

# PROGRAM BOOK

**B<sup>2020</sup>CMST**

**BRAWIJAYA  
INTERNATIONAL CONFERENCE  
ON MULTIDISCIPLINARY  
SCIENCES AND TECHNOLOGY**

*“Sustainable Future for Human and Natural  
Resources and Development”*

**2 - 3 January 2020  
Universitas Brawijaya  
Malang, Indonesia**

**Supported by:**



**FORWADEK II**

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## RECTOR WELCOME



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Good day,

BICMST is the first multidisciplinary conference in Brawijaya organized by the Forum of Vice Dean for General and Finance Affairs. In this conference, we take the theme of “Sustainable Future for Human and Natural Resources Development”. The conference itself is aimed to comprehend the scientific field from the social field into science. By comprehend all of this knowledge; we hope to contribute in the development of scientific

sustainability in major field especially in Indonesia.

The conference was recorded 371 participants consisted of speaker and poster. All of the participants are coming from nine countries including United-States, Sudan, Russia, New Zealand, Malaysia, Japan, Indonesia, India, and Gambia. The participant is coming from multi-disciplinary field especially in law, economy, human social, humanities, linguistics, natural science, mathematics, medic, veterinary, animal husbandry, farming, fisheries, computer science and technology, etc.

And today, I would like to warmly welcome all of the participant including the invited speaker, seminar attendant, and speaker in our university in BICMST 2020. I hope you all will enjoy your stay in Malang City.

**Prof. Dr. Ir. Nuhfil Hanani AR, MS**

Rector of

**Universitas Brawijaya**

## CHAIRMAN LETTER

---

Dear conference participant, presenter, and guest,

Good day,

The first *Brawijaya an International Conference on Multidisciplinary Sciences and Technology* (BICMST 2020) is a conference that covered multidisciplinary studies. The conference is aimed to increase the understanding on multidisciplinary knowledge and to find the red line between each disciplinary in order to have comprehensive understanding about human and nature. In the BICMST 2020, we organized a technology development, medical science, life science, environment, advance in economy, law, human resource, education, social media, institution cooperation, etc. We also invited nine specialists from different countries as speakers. All of the invited speaker has different specialist and will presenting their research in the BICMST.

The BICMST is organized by the Forum of Vice Dean for General and Finance Affairs Universitas Brawijaya Malang (FORWADEK UB) with the theme of "Sustainable Future for Human and Natural Resources Development". By this conference, we would like to make a stand in the development of human sustainable through the knowledge and advancing the resource quality and development.

For all participants, I am very grateful with all of your participation and attending in this conference. I hope you to enjoy your stay in Malang city. There is a lot of tourism destiny in this city and I wish you all could visit them during your stay. Now, on behalf of BICMST organizing committee, I warmly welcome you in Universitas Brawijaya, Malang in the first Brawijaya an International Conference on Multidisciplinary Sciences and Technology 2020.

Sincerely yours

**Prof. Sukir Maryanto, S.Si., M.Si., Ph.D**

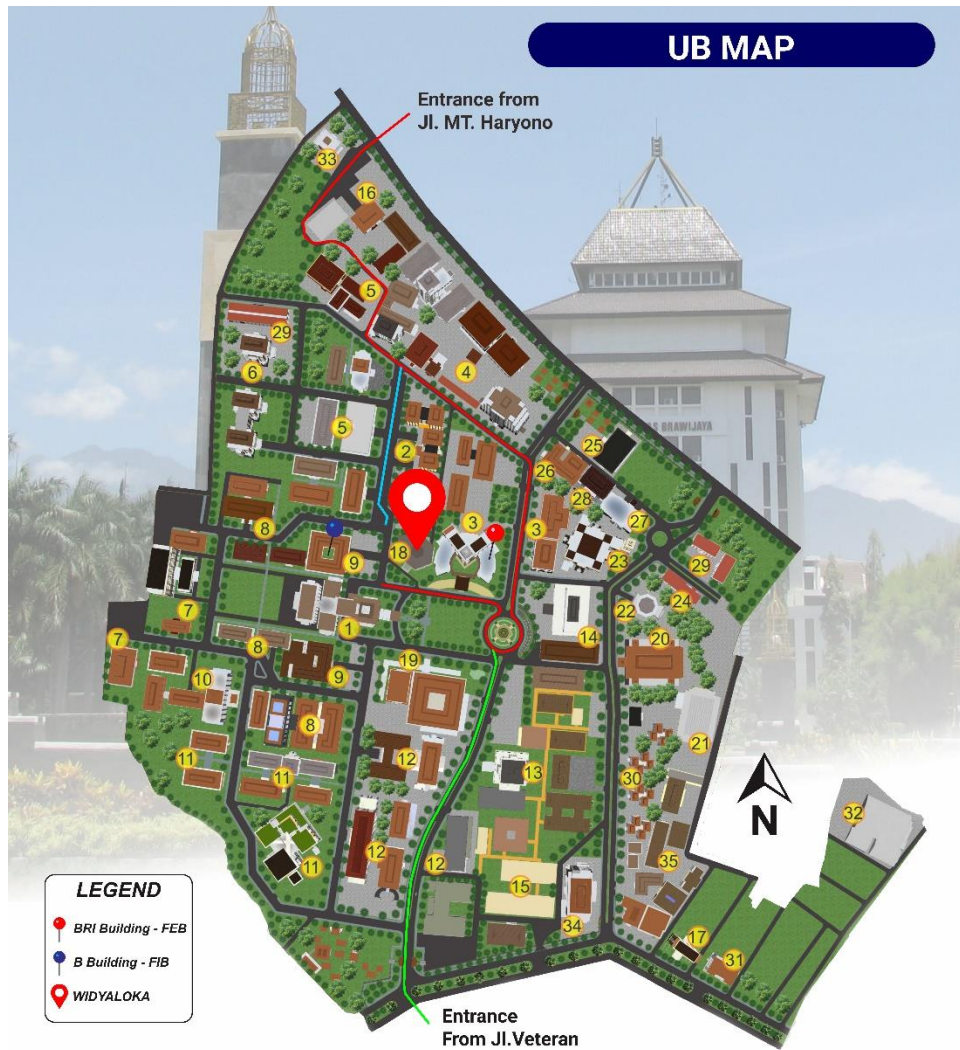
Chairman Committee

**BICMST 2020**

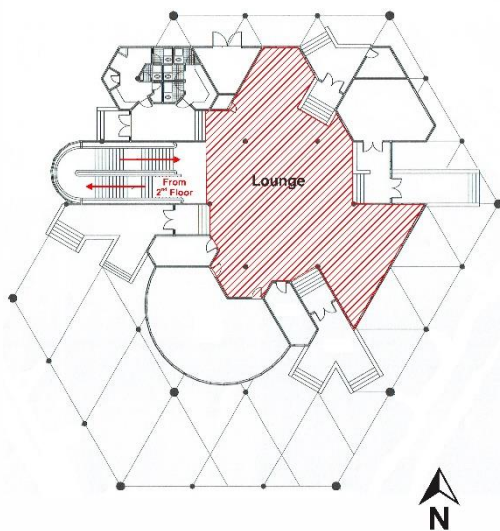


# MAP LOCATION

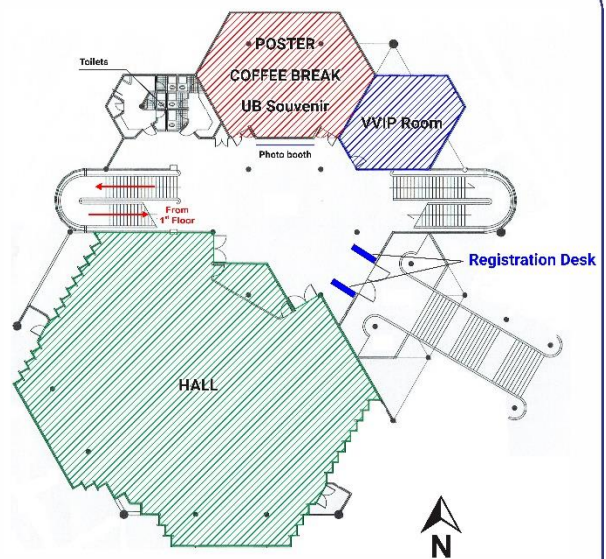
## PLENARY SESSION



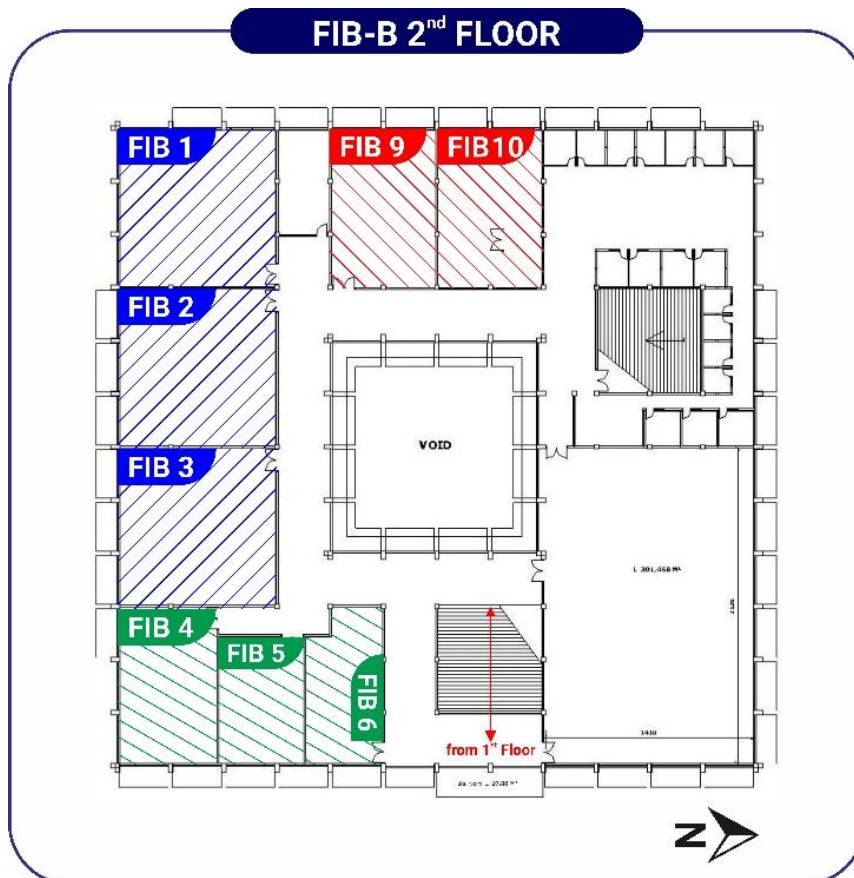
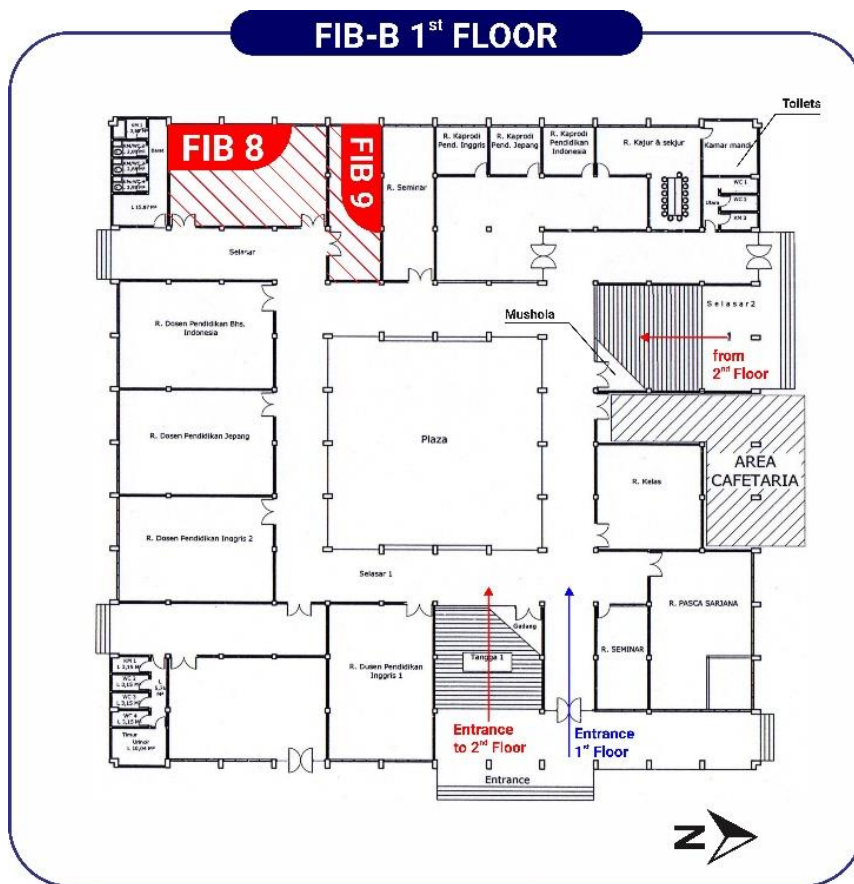
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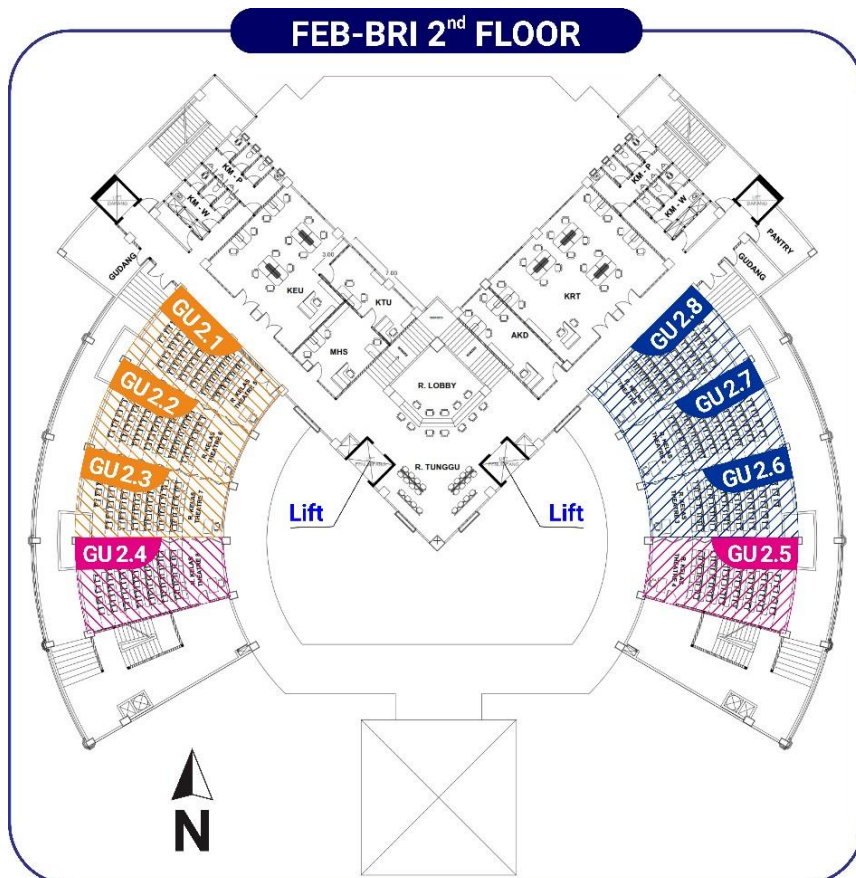
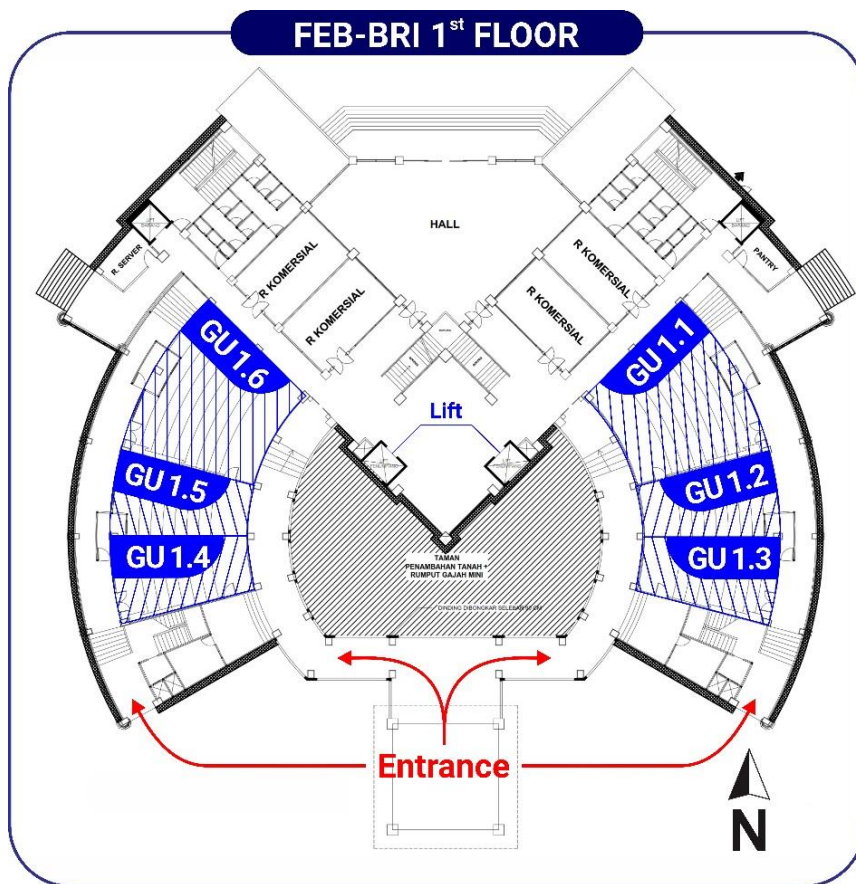
### WIDYALOKA 2<sup>nd</sup> FLOOR



ORAL SESSION VENUE: FIB (B Building)

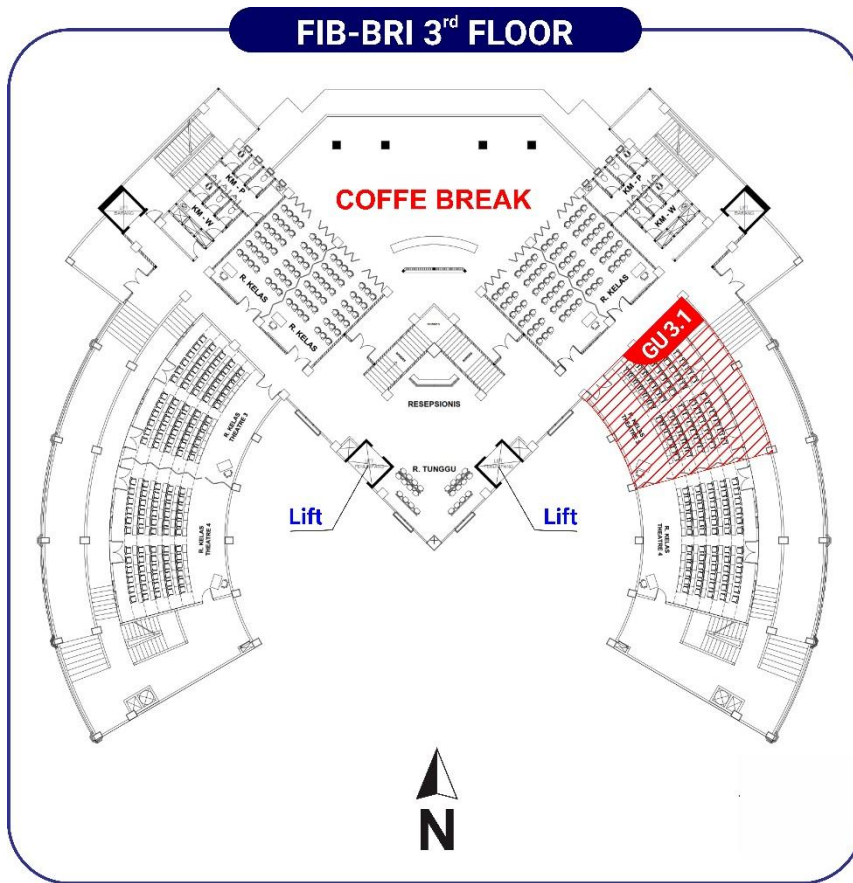


ORAL SESSION VENUE: FEB (BRI Building)





ORAL SESSION VENUE: FEB (BRI Building)



## BICMST 2020 PROGRAM AT A GLANCE

Thursday – 02 January 2020

TIME	EVENT	SPEAKER/PIC*	VENUE
07:30 – 08:00	Registration	Committee	WIDLK
08:00 – 08:20	Opening ceremony	MC/Committee	
	Welcome speech from Chairman	Chairman	WIDLK
	Welcome speech from Rector	Rector	Hall
	Doá	Committee	
08:20 – 08:30	Coffee break	Committee	WIDLK
<b>Plenary Session 1 (Moderator: Andi Kurniawan, S.Pi., M.Eng., D.Sc.)</b>			
08:30 – 08:50	Prof. Dr. Ir. Muhammad Sasmito Djati, MS - <i>Indonesian Endemic Plant as Functional Food and Herbal Medicine, A Synthesis of Traditional and Modern Pathway to Conserve Biodiversity</i>		
08:50 – 09:10	Dr. Akira Kikuchi - <i>Potential Transformation of Research and Education in the Century of AI</i>		
09:10 – 09:30	Ms. Rebecca Brittain - <i>Fluctuating nutrition, gut microbiomes, and parasite infections in wild Bornean Orangutans</i>		WIDLK
09:30 – 09:50	Dr. Mark Duncan, B. VSc - <i>Problem Solving Approach to Companion Animal Medicine</i>		Hall
09:50 – 10:10	Prof. Dr. Ir. Imam Santoso, MP - <i>Horticultural Agro-Industrial Development Strategy: Case Study in Regency X</i>		
10:10 – 10:25	<i>Discussion</i>		
<b>Plenary Session 2 (Moderator: Ainur Rofiq, SE, MM., Ph. D)</b>			
10:25 – 10:45	Dr. Endra Gunawan, S.T., M. Sc - <i>The Use of High Accuracy Technology from Space to Understand Earthquake Process in Java, Indonesia</i>		
10:45 – 11:05	Prof. Dr. dr. Loeki Enggar Fitri, M. Kes., Sp. ParK - <i>New approaches in investigating the activity of compounds from natural source: Strategies for antimalarial drug discovery</i>		WIDLK
11:05 – 11:25	Prof. Gugus Irianto, SE., MSA., Ph.D., Ak. - <i>Tentative topic</i>		Hall
11:25 – 11:45	Prof. Dr. Bambang Supriyono, MS. - <i>Innovation of The Regional Government Implementation and Development in the Catchment Area Perspective</i>		
11:45 – 12:00	<i>Discussion</i>		
12:00 – 13:30	Lunch, Praying	Committee	WIDLK
**13:00 – 13:30	Poster Session		WIDLK
13.30 - 15.00	Oral Presentation Session 01		FEB & FIB
15.00 - 15.05	Coffe Break	Committee	FEB & FIB
15.05 - 16.30	Oral Presentation Session 02		FEB & FIB
16.30 - 17.30	Closing Ceremony	Committee/Chairman	WIDLK
			Hall

\*person in charge

\*\*estimated start time

Friday – 03 January 2020

TIME	EVENT	SPEAKER/PIC*	VENUE
00:00 – 13:00	Field-trip	Committee & Travel	Bromo



ORAL SESSION SCHEDULE

Venue: FIB (B-BUILDING)

CLASS	ROOM	13:30 - 13:40	13:40 - 13:50	13:50 - 14:00	14:00 - 14:10	14:10 - 14:20	14:20 - 14:30	14:30 - 14:40	14:40 - 14:50	14:50 - 15:00	15:00 - 15:05	15:05 - 15:15	15:15 - 15:25	15:25 - 15:35	15:35 - 15:45	15:45 - 15:55	15:55 - 16:05	16:05 - 16:15		
CE-1	FIB 1	CE-1119-060	CE-1127-099	CE-1129-140	CE-1127-103	CE-1127-106	CE-1127-101	CE-1129-142	CE-1129-144	CE-1129-148	COFFEE BREAK	CE-1130-155	CE-1130-174	CE-1201-185	CE-1203-205	CE-1207-366	CE-1208-401	CE-1212-408		
		Ade Rahmat Iskandar	Dongqi SHI	Novenda Prahastiyani	Asidigisianti Surya Patria	Alifa Camilla Fadillah	Dongqi SHI	Anung Putri Ilahika	Alex Jhon	Chandra Kurniawan Wiharja		Esti Juning	Isti Purwaningtyas	Sultan Syah	Dwi Ismawati	Reski Amalla	Bina Adi Prakosa	Anang Sujoko		
CE-2	FIB 2	CE-1204-227	CE-1205-233	CE-1205-246	CE-1206-254	CE-1207-299	CE-1207-306	CE-1207-313	CE-1207-315	CE-1207-346		CE-1207-362	CE-1207-386	CE-1210-406	CE-1127-110	CE-1204-230	CE-1207-357	CE-1230-411		
		Mutiara Nurmalasari B	E. Susilawati	Vita Mayastinasari	Yulia Hapsari	Ive Emaliana	E. Susilawati	Leleta Primadani	Ressi Maulidina Deljar	Amanda Vira Maharani		Vera Yulianti	Fransisca Berliana Maiten	Hamamah	Laili Etika Rahmawati	Hamimah	Zulkarim Salampessey	Sahrudin		
CE-3	FIB 3	CE-1105-005	CE-1111-016	CE-1115-038	CE-1115-040	CE-1116-049	CE-1121-070	CE-1128-119	CE-1130-171	CE-1130-177		CE-1202-195	CE-1203-203	CE-1203-210	CE-1204-225	CE-1204-228	CE-1207-363			
		Sylva Alkornia	Sugeng Susilo Adi	Criscentia Jessica Setiadi	Syhabuddin Asriani	Rezki Pratami	Dwi Ismawati	Sandy Ariawan	Mayang Dintarini	Neli Siti Aisah		R Clarrino Adesetya Jaya	Riza Wulandari	Agus Adriyanto	Angelina Arini Larasati	Zainal Abidin	Dewi Andriani			
EG-1	FIB 4	EV-1111-014	EV-1115-031	EV-1119-059	EV-1126-092	EV-1207-381	EV-1126-097	EV-1128-122	EV-1130-160	EV-1130-178		GT-1207-322	GT-1205-234	EV-1206-251	GT-1206-297					
		Aulia Annas Mufti	R. Adharyan Islamy	Intan Flindanavy Ridzqo	Gita Sekar Prihanti	Ratnawati	Octora A. Puspitasari	I. Nugroho	Rachmadi Agus Triono	Lulu Nurdini		Harky Obed Jusuf Messakh	Arya Mahendra Sakti	Sunkung Danso	Mochamad Asrofi					
EG-2	FIB 5	EV-1203-207	EV-1204-221	EV-1204-222	EV-1206-276	EV-1206-277	EV-1207-310	EV-1207-324	EV-1207-332	EV-1203-208		GT-1207-337	EV-1102-003	EV-1128-128	EV-1202-200					
		Layta Dinira	Yulanda Kurnia Prahani	Shofiana Istiqomah	Dita Rifka Annisaa	Wahyu Budi Pratiwi	Sandra Ayu P. Gunawan	Franciscus Benhardi Wastuwidiya	Triadna Febriani Aabidah	Arinto Y. P. Wardoyo		Gloria Zefanya Rilutapa	Eka Pratiwi Tenriawaru	Ayu Pramita	Anto Tri Sugiarito					
EG-3	FIB 6	EV-1115-043	EV-1115-048	EV-1121-072	EV-1121-073	EV-1125-089	EV-1125-090	GT-1206-260	GT-1206-261	EV-1207-340		EV-1207-331	EV-1203-209	GT-1207-378						
		Erlina Kurnianingtyas	Dodi Satriawan	James Rilutapa	Rohaiza Rokis	Kasta Rosyada	Kasta Rosyada	Budiman	Patsal Nuradi	Raynita Aji Kumaladewi		Cresensia Liany Prastica Mallisa	Febrianawati Yusup	Amun Amri						
LSP-1	FIB 7	LW-1115-037	SP-1115-030	SP-1123-080	SP-1125-084	SP-1128-125	SP-1130-167	SP-1206-269	SP-1130-169	SP-1121-068		SP-1128-124	SP-1128-127	SP-1128-129	SP-1204-224	SP-1207-383				
		Mohammad Yufi Al Izhar	Fathur Rahman	Muchsin al-Fikri	Edhib Harits Anugrah	Ikeu Kania	St. Jumriati	Busdir	Rasmiati Thahir	Sahmar Pulungan		Ali Muhtasom	E. O. Permatasari	Surjono	Ramsinim Saragh	Arjun Fatahillah				
LSP-2	FIB 8	SP-1130-170	SP-1203-212	SP-1204-215	SP-1206-263	SP-1206-284	SP-1206-285	SP-1207-307	SP-1207-326	SP-1130-172		SP-1130-179	SP-1205-249	SP-1205-250	SP-1204-216					
		Safaruddin	Dwi Yan Nugraha	Chairul Muriman Setyabudi	Santi Mardhotillah	Eka Kurniawan Putra	Nur Ida Febriany	Tiara I. W. Primadani	Ishaq Yunus	Yahya Muhammed Bah		Feri Taupik Ridwan	Tatang Sudrajat	Tatang Sudrajat	Anang Sujoko					
LSP-3	FIB 9	LW-1113-020	LW-1115-041	LW-1119-061	LW-1121-074	LW-1201-192	LW-1206-265	SP-1115-032	SP-1115-036	SP-1115-039		SP-1115-042	SP-1207-399	SP-1206-268	SP-1207-385					
		Wahyu Kurniawan	Agung Imam Zulhatta	Taufiqurrahman	Aulia Rosa Nasution	Nurwidya Kusma Wardhani	Dijan Widijowati	Retno Damayanti	Winda Indri Astuti	Agung Imam Zulhatta		Agung Imam Zulhatta	Iko Aulya P. Santoso	Ali Anas	Hervina Dwi Wulandari					
LSP-4	FIB 10	SP-1118-057	SP-1118-058	SP-1121-069	SP-1129-141	SP-1129-146	SP-1130-159	SP-1206-262	SP-1207-394	SP-1207-312		SP-1207-317	SP-1207-321	SP-1207-349	SP-1207-380					
		Dina Mizanie	Aswin Ariyanto Azis	Muhammad Zuchri Nasuha Lubis	Safaruddin	Kasta Rosyada	St. Jumriati	Erti Fadhilah Putri	Enny Asrida	Wildan Syaftri		Rachma Kusumaputri	Maryanti	Katarina Dhiani W A	Erti Fadhilah Putri					

## PLENARY SESSION SUMMARY

### Indonesian Endemic Plant as Functional Food and Herbal Medicine, A Synthesis of Traditional and Modern Pathway to Conserve Biodiversity

**Muhammad Sasmito Djati**

*Division of Human and animal Cell Culture, Laboratory of Physiology, Department of Biology, Faculty of Science, Universitas Brawijaya*



**Summary** - In lightening of growing understanding of herbal medicine and functional food, Indonesian has potential resources not only to conserve its biodiversity, but also economically advantage for developing the country for implementing food and traditional pharmaceutical such as “jamu”. Most of Indonesian traditional food are spicing and flavorings with Indonesian spice, and almost all the spice has an effective phyto-medicine, unfortunately such phenomenon has not fully understood mechanism yet, detail research in term bio-actives containing in all of plant have not well done yet. Both, functional food and “jamu” synergistically has potential to support healthy life habit. In the market, jamu and functional food are whole extracts of the plant, that’s mean in modern term, the mechanism of action still unknown, but in term of evident base research these phenomena are conclusively balance in complexity of mechanism. In case of some potential plant such as Tapak Liman, Daun Katuk, Mahkota Dewa, Lamtoro, these plants have potential for antioxidant, immonu-modulator, antibacterial, anti allergy, even though in certain plants they also potential for having such negative impact or toxic material as well. Conclusively, Scientific formulation is needed, synergistically, coincidentally, antagonistically effects should be detected holistically for traditional herbal medicine, for the reason, it was double impact for Indonesia firstly meaningfulness of endemic plant and conserving mega-biodiversity as well.

**Keyword:** Jamu, functional food, phyto-medicine, Tapak Liman, Daun Katuk, Mahkota Dewa.

### Horticultural Agro-Industrial Development Strategy: Case Study in Regency X

**Prof. Dr. Ir. Imam Santoso, MP**

*Faculty of Agriculture Technology, Universitas Brawijaya*



**Summary** - Regency X is one of the regions with very high potential for agricultural product development. Various kinds of agricultural products are produced from this regency because of the diversity of climatic conditions and goeographic characteristics. The main potential of agricultural products is horticultural commodities, which consist of fruits, flowers and vegetables. The increased production of horticultural commodities in this Regency is due to an increase in demand and the quality of horticultural products that have high competitiveness when compared to other regions. However, along with the increased production of horticultural commodities, the amount of yield produced by 5-20% has low quality (sub-grade). This results in losses for farmers of horticultural products because sub-grade products will be sold cheaply or damaged because they are not sold quickly. In addition, the characteristics of perishable horticultural products are a problem for farmers, so post-harvest handling is crucial to prolong the shelf life of the product. Based on these problems, an effort to reduce the number of sub-grade products is analyzed by applying post-harvest technology and utilizing sub-grade products to add value.

This research was conducted in case study of Regency X, especially in seven (7) districts with the largest level of horticultural production. The main products from District X include apple, mango, durian, chrysanthemum, tuberose flower cabbage, carrots, potatoes, peppers and scallions. The analysis was carried out by involving experts, namely district agriculture service officers, agricultural extension workers in each sub-district, and farmer groups. The stages of analysis in this study were in the form of analysis and improvement of standard operation procedures (SOP) for post-harvest handling of horticultural products, determination of key factors of post-harvest, analysis of the application of post-harvest handling technology, and analysis of the potential utilization of sub-grade products. Based on a number of stages of the analysis, it is expected to be able to provide input to the government, relevant agencies and farmers of horticultural products to increase sales and product competitiveness.

The results showed that the current post-harvest handling is limited and simple, post-harvest handling is only limited to sorting, grading, and packaging. Key factor analysis shows that harvesting activities will have an impact on post-harvest conditions and the method of handling horticultural products affect the shelf life of horticultural products. In the harvesting activity, the harvest season and harvest time affect the condition of horticultural products, namely the amount of water content, so the treatment of horticultural products in the rainy and dry season requires slightly different handling. In post-harvest activities packaging methods and storage methods become the main key factors in maintaining shelf life. Based on the analysis of key factors, the development of the application of post-harvest handling technology was carried out on several horticultural products. The application of post-harvest technology focuses on adding coatings to some commodities such as apples, mangoes and paprika.

Other commodities focus on controlling the temperature of storage and distribution of products. The recommendations proposed are the use of sub-grade horticultural products to produce products of market value and policies related to the development of hortikultura potential in terms of efforts to improve the quality of crops, marketing and development of high-value processed products.

### **Problem Solving Approach to Companion Animal Medicine**

**Dr. Mark Duncan, B. VSc**

At the Vets, Veterinary Clinic, New Zealand



**Summary** - Historically, and even today, Veterinary diagnosis is mainly done using the empirical method. Another common method is making a differential diagnostic list. Both these methods have with some disadvantages. In more recent times, the problem-solving approach has become popular. The basis for this method of diagnosis is answering some basic questions about the main clinical signs. This can reduce the list of diagnoses to just a few possibilities. Using this method can save both clients and clinicians time and money, and improve the welfare of our patients. This discussion will introduce using a problem-solving approach as an additional method to make Veterinary diagnoses.

### **The Use of High Accuracy Technology from Space to Understand Earthquake Process in Java, Indonesia**

**Dr. Endra Gunawan, S.T., M. Sc**

*Global Geophysics Research Group, Faculty of Mining and Petroleum Engineering, Bandung Institute of Technology*



**Summary** - During the last 30 years, geoscientists have used a millimeter accuracy technology from space to study earthquake phenomenon. They use GNSS (Global Navigation Satellite System) to understand the earthquake cycle process through the recorded deformation in an active tectonic region. An earthquake cycle can be categorized into three deformation process, i.e. inter-, co-, and post- seismic. If during an interseismic period the fault accumulates energy, a coseismic period is releasing energy through the mainshock of an earthquake while a postseismic period is a continuation of energy release following the mainshock. Using GNSS, geoscientists capable of showing a detail information of an active fault. One of the examples is the interseismic period along megathrust in western Java, where a recent study showed that this active region is accumulating energy to be released as an earthquake in the future, at least with magnitude 8.7. Using GNSS, a coseismic deformation of an intraslab earthquake also investigated in western Java. The vertical displacement of GNSS sites located near epicenter play important role in determining the depth of the fault. In addition to tsunami simulation and stress transfer analysis, the study suggested that the combined data capable to explain the responsible fault of the mainshock. Along megathrust in western Java, a postseismic deformation of the 2006 Java tsunami earthquake also investigated. The coseismic ruptured of previous studies analyzed to search for best-fit model explaining the postseismic deformation of the earthquake. The investigation showed that one of the fundamental keys to understand the earthquake triggering process is the comprehensive information of the coseismic slip of the fault. Thus, the inter-, co-, and post- seismic information are the keys and fundamental for understanding future earthquake hazard, especially for conducting disaster risk reduction in Java region.

### **Fluctuating Nutrition, Gut Microbiomes, And Parasite Infections in Wild Bornean Orangutans**

**Ms. Rebecca Brittain**

*Department of Anthropology at Rutgers, The State University of New Jersey.*



**Summary** - Bornean orangutans are critically-endangered great apes that are challenged with unpredictable and extended periods of food scarcity. Orangutans are preferred frugivores, and because fruit availability fluctuations are both extreme and unpredictable, Bornean orangutan nutrition oscillates between feast and famine. Famine periods force orangutans to switch from their preferred food source, fruits, to fibrous food items that are much more difficult to digest, such as tree bark and pith, and mature leaves. Some famines last nearly one year, and during these times their total caloric intake is also reduced. Gut microbes are key players in fiber digestion, and during the microbial fermentation process microbes also produce molecules that are rapidly absorbed by host organisms and used as a direct source of energy. The relative importance of microbial fermentation in helping organisms meet their minimum energetic requirement varies among organisms. Ruminants acquire 80 to 95% of their daily energetic needs through microbial fermentation, and highly folivorous howler monkeys obtain at least 30% of their daily energetic needs from fermentation. While this figure is still unknown for wild orangutans, Brittain expects microbial fermentation to be extremely important for meeting energy requirements during extensive periods of reduced caloric intake.

The objective of Brittain's research is to measure the energetic and digestive roles of the gut microbiome in a population of wild Bornean orangutans (*Pongo pygmaeus wurmbii*) across their shifting nutritional landscape. Brittain's overarching research question is "during low fruiting periods when orangutans consume proportionally more dietary fiber, will the relative abundance of fiber-degrading gut microbes mirror this increase and also produce a corresponding increase in microbial energy production that compensates for caloric intake deficits?" She will collect environmental changes in food availability, the nutritional contents of food items, and estimate gut microbe composition and microbial energy production from orangutan fecal samples at the Tuanan Orangutan Research Station, in Indonesian Borneo. This research will advance our understanding of the gut microbiome's role in the survival of wild mammals faced with unpredictable or changing nutritional landscapes. Bornean orangutans are now classified as critically endangered and only 38 viable metapopulations with more than 100 individuals remain in the wild. As such, the data generated by this project will directly contribute and apply to orangutan conservation and health in the wild, the captive management and wellbeing of orangutans, and will also be germane to rehabilitation and release efforts.

## New Approaches in Investigating the Activity of Compounds from Natural Source: Strategies for Antimalarial Drug Discovery

Prof. Dr. dr. Loeki Enggar Fitri, M. Kes., Sp. ParK

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**Summary** - Recently many endemic areas had been certified as districts for malaria elimination. Unfortunately some areas still have an increasing incidence of malaria infection that causes malaria remains a major world health problem. Over the last 30 years, strains of malaria parasites which resistant to a number of different antimalarial have spread around the world. A new Plasmodium (P) falciparum strain PfPailin that is resistant to Artemisinin and Piperaquine a first line drug for malaria has been found. There is an urgent need to restrict the spread of multiple drug resistant strains and develop new drug for the treatment of malaria. The discovery of the first antimalarial treatment almost 400 years ago resulted from

observations from *Cinchona calisaya* and *Cinchona succirubra* plants which were later characterized to the Alkaloid Quinine. Afterwards, Chinese herbalists for centuries used traditional Chinese medicine Qinghaosu that was rediscovered by Chinese biomedical researchers as Artemisinin in the 1970s. We have evaluated several original plants from Indonesia like Buah Merah (*Pandanus conoideus*), Sambiloto (*Andrographis paniculata*), Talikuning (*Anamirta cocculus*), Daun Kelor (*Moringa oleifera*), Mimba (*Azadirachta indica*) and Brotowali (*Tinospora crispa*) for their antimalarial activities.

Antimalarial discovery approaches include the following: (i) the design of antimalarial based on the covalent linking of drugs into a single hybrid molecule. (ii) Metabolomics technology that focused on high-throughput identification and quantification of small molecules metabolites (iii) testing of commercially available drugs that have been approved for other diseases in humans and (iv) molecular modeling using virtual screening technology and docking. It is important to select novel potential drug targets through essential metabolic processes of *P. falciparum* such as pyrimidine biosynthesis, aspartate metabolism, and mitochondrial TCA cycle includes their enzymes e.g *P. falciparum* dihydroorotate dehydrogenase (PfDHODH) and *P. falciparum* L-malate: quinone oxidoreductase (PfMQO), as well as *P. falciparum* Ubiquitin-proteasome system (UPS) which acts to control the regulation of cell protein receptor signaling. PfDHODH is a promising drug development target for antimalarial therapy since it catalyzes the rate-limiting step for DNA and RNA biosynthesis and the fourth reaction of de novo pyrimidine biosynthesis. PfMQO is a membrane protein, involved in three pathways (ETC, the tricarboxylic acid cycle and the fumarate cycle) and has been shown to be essential for parasite survival.

Most programs aiming to discover new antimalarial are based on micro-tests against *P. falciparum* in blood cultures and animal models. The evaluation of *P. falciparum* drug susceptibility in vitro, formerly based on microscopy, has been replaced by the detection of parasite DNA and specific parasite enzymes like *P. falciparum* lactate dehydrogenase (PfLDH). We have done several studies to reveal if eponemycin a proteasome inhibitor that contains in metabolite extract of *Streptomyces (S) hygroscopicus* can inhibit UPS function of *Plasmodium berghei*. We analyzed eponemycin analog in *S. hygroscopicus* using Thin Layer Chromatography (TLC) and High Performance Liquid Chromatography (HPLC). TLC analysis showed a spot with refractory factor (Rf) 0.7 whereas HPLC demonstrated compound similar to dihydroeponemycin. This analog eponemycin showed strong potential activity for new antimalarial drug by inhibiting UPS function of the parasite and caused stress and dead of the parasite.

To further analyze the effects of other active compounds on *S. hygroscopicus* toward *Plasmodium* parasite, we identified and analyzed the effectiveness of compounds contained in *S. hygroscopicus* through Liquid Chromatography/Mass Spectrometry (LC/MS) and in silico studies. The derivative compounds which successfully identified using LC/MS instrumentation were 6,7-Dinitro 2 [1,2,4] triazole-4-yl-benzo [de] isoquinoline-1,3-dione and Geldanamycin. This Isoquinoline derivative had the potential to bind to each of fourteen protein targets. The

pharmacokinetic profile showed that this compound had the druglikeness criteria with the best inhibitory ability of compounds based on bond affinity was adenylosuccinate synthetase. Now, reverse molecular docking studies and prediction of pharmacokinetic profiles is being underinvestigating to Geldanamycin for its antimalarial activities.

**Keywords:** antimalarial resistance, herbal medicine, drug target, *Streptomyces hygrosopicus*.

**Prof. Dr. Bambang Supriyono, MS.**

**Innovation of the regional government implementation and development in the catchment area perspective**

Faculty of Administrative Science, Universitas Brawijaya

**Dr. Akira Kikuchi**

**Potential Transformation of Research and Education in the Century of AI**

Faculty of Agriculture, UB.

**Prof. Gugus Irianto, SE., MSA., Ph.D., Ak.:** Universitas Brawijaya, Indonesia



## ABSTRACTS

### Oral Session Abstract

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**ABES-1113-018**
**ROOM: BRI-1**
**13:30 - 13:40**


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#### Environmental Budget Policy Analysis Using Budget Tagging Model in Gresik Regency

<sup>1</sup>Badrudin Kurniawan\*, <sup>2</sup>Eva Hany Fanida, <sup>3</sup>Fitrotun Niswah, <sup>4</sup>Muhammad Farid Ma'ruf, <sup>5</sup>Deby Febriyan Eprilianto  
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**Abstract** - Gresik Regency is an industrial city in East Java Province. High economic growth in the district is also accompanied by increasingly severe environmental damage. Ironically, a number of cases show that local governments have very limited environmental functions in the public budget. Furthermore, local government did not have yet ability to identify cross-department environmental budget. These facts encourage researchers to examine the Gresik Regency Government's budget policy for environmental functions. This study uses budget tagging techniques. It comprises three steps namely input, process and output. Input process analyzes direction and goal of environmental development. Process phase tags budget allocated to the direction. Output step calculates the total number of tagged budgets. Data mainly used by researchers are secondary one. The results of the study describe that the regional development planning document both long term and short term has determined several directions of environmental development. Based on the document, there were 4 directions of environmental development in 2014-2015 period. Then in 2016-2018, the number of the direction were increased until 8 points. The funds allocated to reach the direction of environmental development in the period from 2014 to 2018 reached more than two hundred billion. In that period the regional government was able to absorb the budget up to 80.3 percent of the total environmental function budget ceiling. The amount and percentage of budget realization in the period of 5 years is fluctuating. Overall, in budget aspect, local government give more attention to environmental issues each year.

**Keywords:** Public Budget; Environmental Budget; Budget Tagging.

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**ABES-1114-027**
**ROOM: BRI-1**
**13:40 - 13:50**


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#### Disclosure of Local Government Financial Statements in South Sulawesi

<sup>1</sup>Syamsuri Rahim\*, <sup>2</sup>Andi Nursadirah

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**Abstract** - This study aims to explain the disclosure of local government financial reports in South Sulawesi (district/city). Testing the level of disclosure of local government financial statements using variables of local wealth, level of dependency, total assets, population, number of work unit, and number of audit findings. The population and sample of research are district and city governments in South Sulawesi. The data uses pooled data from 2015-2017 and analyzed by multiple regression. The results showed that the level of disclosure of local government financial statements is influenced by the level of local wealth, the level of local dependence, the number of residents, the number of SKPD, and the number of audit findings. While total regional assets don't have significant effect on the level of disclosure of regional financial statements. The research findings provide an illustration that the level of regional dependence and the number of audit findings significantly drives the level of disclosure of local government financial statements in south Sulawesi.

**Keywords:** Disclosure; Financial Statement; Local Government.

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**ABES-1115-029**
**ROOM: BRI-1**
**13:50 - 14:00**


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#### Evaluation of E-Village Budgeting Program in Banyuwangi District

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**Abstract** - Law No. 6 of 2014 mandated the village government to be more independent in managing government and various natural resources that are owned, including financial management and wealth belongs to the village. The allocation of village funds from Banyuwangi district budget in 2017 increased from Rp 83 billion in 2016 to Rp 148.6 billion in 2017. The village of central government funds to 189 villages in Banyuwangi in 2017 reached Rp 172.1 billion. To keep the government budget management in the village, Banyuwangi pioneered the use of financial application software e-village villages namely budgeting is a village government budgeting system that is integrated in the network. The program aims to help the government oversee Banyuwangi regency village fund management based on information technology. This study used descriptive qualitative approach. The purpose of this study to identify and analyze the impact of e-village program budgeting. Data collection techniques with deployment interviews and observations, the data is processed and analyzed qualitatively The results of this study

after the e-village budgeting There are many benefits or advantages that exist behind the system of E-Village Budgeting applications such as: 1) The financial reporting becomes easier, effective and efficient; 2) The error at the time of data entry can be caught early; 3) Work in a neat and orderly; 4) Characteristically transparent; and 5) financial management more clear and detailed. The fundamental difference between before and after implementation of the system of E-Village Budgeting is located in the village activities program planning model becomes more focused than ever before. Based on research that has been done, the impact of the government program of Banyuwangi district to the village fund management can be deduced as follows: financial reporting becomes easier, effective and efficient, error at the time of data entry can be caught early; Work in a neat and orderly; Be transparent; as well as financial management more clear and detailed.

**Keywords:** E-Village Budgeting, Policy Evaluation, Institutional Strengthening.

**ABES-1116-050**

**ROOM: BRI-1**

**14:00 - 14:10**

### **Assessing Optimal Retention with Quantile and Expectile Risk Measures**

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**Abstract** - The form of claim severity from the reinsurance contracts is skewed to the right and heavy tail. The aims of this research are to determine the optimal risk measure on a reinsurance contract. This risk measure is the coverage limit between an insurance company and a reinsurance company called optimal retention. Optimal retention in this research is estimated with 2 risk measures methods, which are the quantile-based Value-at-Risk (QVaR) and the expectile-based Value-at-Risk (EVaR). The Comparison results of the both methods by analytically and numerically show that EVaR is coherent and has a more optimal value than QVaR. As an illustration, we will use data of claim severity on a reinsurance contracts to determine the value of QVaR and EVaR.

**Keywords:** Pareto Distribution; Reinsurance Contract; Quantile; Expectile; Optimal Retention; Coherent Risk Measures.

**ABES-1120-064**

**ROOM: BRI-1**

**14:10 - 14:20**

### **Remuneration for Welfare Distribution - Evidence from Indonesia**

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**Abstract** - This study aims to reveal the welfare distribution after the implementation of remuneration policy at X Health Polytechnic in Indonesia. Claims that remuneration policy will establish internal and external justice in an organization encourage the researcher to employ Political Economy of Accounting theory as the analysis tool. The results indicated that the implementation of remuneration policy at X Health Polytechnic was fairly strong according to single salary principle. As a consequence, honorarium is no longer a component of remuneration except operational honorarium which is still allowed by the Public Service Agency (BLU) to be included in the working unit budget. The next consequence after the implementation of remuneration policy is that the financial performance is getting better compared to the period before remuneration. However, the remuneration load is also increasing. In addition, the welfare distribution caused by the remuneration policy triggers social jealousy between headquarter and branch office employees because the amount of remuneration received is similar despite workload differences. The originality of this study addresses the challenges of Indonesian higher education management in implementing remuneration policy.

**Keywords:** Public Service Agency; Distribution; Political Economy of Accounting; Remuneration; Single salary

**ABES-1121-067**

**ROOM: BRI-1**

**14:20 - 14:30**

### **A Conceptual Study on Business Performance influenced by Three Exogenous Variables and its Implications on Competitive Advantage (A Study on Overseas Education Consultation in Indonesia)**

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**Abstract** - Education is considered as one of important factor to improve competitiveness of a country and higher education institutions have an important role to produce qualified Human Resources. Nowadays, creating well-educated employee is greatly required to compete with the other countries. One of the efforts that is made in response to the recent demands is by opening the scholarship programs offered by the government. Up to now, there are 35,000 Indonesian students continuing their study overseas with three favorite's destination countries: Australia, America, and Malaysia. This phenomenon now become the opportunities for the overseas education consultants to provide overseas education services. Education agents are still greatly required due to the social interaction needs that those agents may provide and complete information guidance that they give to the students to meet the overseas

institutions' requirements. This research is concocted to develop the existing knowledge in the field of management related to the business performance made by the entrepreneurs running their businesses in the field of overseas education consultation. The result is expected to figure out the influence of International Experience, Entrepreneurial Orientation, and Company Reputation variable on Competitive Advantage as intervening. The research result is also expected to provide a contribution to the knowledge development for academicians and experts, related to the theories used in this research, such as Strategic Management, Foreign Market Entry Mode, Entrepreneurship as grand theory and Resource Based view, Internationalization and firm specific factors as Middle theory. This research examines hypotheses and relationships using a quantitative approach with the population of 108 company owners running businesses on overseas education consultation services as the research object units.

**Keywords:** International Experience; Entrepreneurial Orientation; Company Reputation; Competitive Advantage.

**ABES-1126-091**

**ROOM: BRI-1**

**14:30 - 14:40**

**Ceper Foundry Industries, Technology Management Readiness for Industrial Revolution 4.0**

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**Abstract** - Ceper foundry industry is one of the industrial centers in the field of metal product manufacturing. This industry has existed since the time of the ancient kingdom of Mataram by producing tools and horse carriages. However, lately many businesses have gone bankrupt. The development of the industrial revolution 4.0 will certainly be a new problem in Ceper Metal Casting Industry if it is not accompanied by technological developments and human resources readiness. Interviews and questionnaires become a method to collect this data and there were 110 respondents. The method to process the data used SPSS 18 and Excel. 30 respondents from outside the sample have been tested for validity and reliability. The results are reliable,  $76.5 \geq 0.5$ . The data showed that 64% of respondents thought that their management industries had not yet used automatic machines. 61% of respondents assumed that the metal casting industry still used manual systems in the bussiness process. Therefore the conclusion is that industrial revolution 4.0 has not yet been fully implemented in the metal casting industry because the technology management used still manual and not yet automatic. This research has an important goal which is to be reference data for determining policies to government, to provide protection and support the metal casting industry players.

**Keywords:** Technology; Management; Foundry; Revolution 4.0.

**ABES-1126-096**

**ROOM: BRI-1**

**14:40 - 14:50**

**The Influence of International Accounting Experts Towards the Birth of Islamic Accounting Civilization in Indonesia**

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**Abstract** - The aim of the research is to look at the influence of the new thinking of international accounting experts on the birth of a substantial Islamic accounting civilization, because accounting must change itself or introspection. If the accounting does not want to be abandoned or included in the museum of civilization. One such thought is the need for accounting to shift its function from the decision-making facilitation function to accountability. The research method uses a qualitative descriptive approach using library studies, to get a complete understanding and picture of the phenomenon of sharia accounting libraries. The results of this study indicate that the birth of the Islamic Accounting civilization clearly exists, as well as its history. It is not possible for Muslims who were once imperial or superpower in this world and have had and mastered sophisticated technology in their time without Islamic management accounting. Islamic accounting has come to the attention of accounting experts, not only from Muslims but also from non-Muslims. The influence of international accounting experts on the birth of Islamic accounting civilization in Indonesia is realistic evidence. Islamic accounting civilization is described starting from the concept and content of Islamic accounting itself comprehensively, with various points of view by looking at from history, social, values, and harmonization.

**Keywords:** international accounting experts; the birth of Islamic accounting civilization

**ABES-1206-282**

**ROOM: BRI-1**

**14:50 - 15:00**

**Retired Indonesian Navy Empowerment in Improving Well-Being through Entrepreneur, Labor Wages and Farming**

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**Abstract** - Retirement Preparation Period is a situation of change from active service as a navy soldier to civil society. This is a difficult period because of significant differences. When they were still active, all facilities and various supports were attached to the soldiers. However, after retirement, all facilities are lost including reduced

income/salary. Following the provisions, retired Navy personnel only get as much as 75% of the basic salary, so their income will drop practically while the needs remain high. This study aims to analyze the level of welfare through alternative jobs that can empower retired personnel according to their expertise. This research uses quantitative methods by taking data through questionnaires and literature studies. Around 200 respondents were selected from retired Navy personnel in Surabaya, Malang, and Pasuruan. The results showed that there were three employment options to supplement the Navy's retirement income, as entrepreneurs, wage laborers, and farmers. Of these options, as entrepreneurs have the highest welfare level of 2.7658, the second as a wage laborer of 2.7241 and the last as a farmer is 2.5375. Based on these results the authors recommend entrepreneurs as jobs that increase income after retirement. Of course, there are still limits to entrepreneurship. So, retired personnel can choose to become wage laborers. The limits to wage laborers are age and physical decline. For this reason, it is necessary to prepare other skills that maximize existing potential such as becoming lecturers/teachers, consultant and trying to farm by hiring farm laborers in processing their fields.

**Keywords:** Retired Indonesian Navy; Welfare; Entrepreneur; Labor Wages; Farming.

**ABES-1207-377**

**ROOM: BRI-1**

**15:05 - 15:15**

### **Collaborative Organizational Culture on Bureaucratic Behavior in the Industrial Revolution Era 4.0**

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**Abstract** - One of the main objectives in the era of the industrial revolution 4.0 on bureaucratic behavior is the ability to provide good services by adopting science and technology in harmony with organizational culture. This is done so that an organization can run effectively and efficiently. This study seeks to analyze the effect of bureaucratic behavior on organizational effectiveness by collaborating on culture break Coffee variables as an element of local wisdom, and the use of social media as an element of technology. The method used in this research is descriptive analysis. The results showed that the behavior of bureaucrats in carrying out their duties and responsibilities is based on and driven by the values, myths, and beliefs that are adopted from the culture of an organization based on local wisdom.

**Keywords:** Culture; Collaboration; Coffee Break; Social Media; Technology.

**ABES-1128-121**

**ROOM: BRI-1**

**15:15 - 15:25**

### **Fire and Explosion Risk Analysis of Condensate Storage Tank in PT Trans Pacific Petrochemical Indotama by Using RFMEA and FFTA Methods**

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**Abstract** - Condensate storage tanks have crucial function in regulating the flow of oil inventory in refineries, including PT. Trans Pacific Petrochemical Indotama (PT TPPI). From the historical data of fires and explosions in such tanks which have occurred in oil refineries, they are known to cause death or injury to the workers, huge economic losses, and environmental pollutions. This study aims to conduct an in-depth and feasible hazard analysis in the condensate storage facility at PT TPPI, so that mitigation and modification steps can be taken to ensure accidents do not occur. In the initial stage, potential failures in condensate tank operating activities at PT TPPI are identified through a group discussion forum dominated by PT TPPI's marine offsite staffs and subsequently, using Risk Failure Mode Effect and Analysis method (RFMEA), critical risks of tank operations will be found, including fire and explosion accidents in the condensate tank. The next step is to search the critical risk factors of fire and explosion for condensate tank by using Fault Tree Analysis (FTA). Combining with fuzzy triangular number (FFTA), the FTA's qualitative analysis can be modified into quantitative analysis which will allow the risk factor level to be known. Based on the data of this research, risk ranking that had been generated, thus allowing several preventive measures to be conveyed in the form of unit or system modification to reduce the potential of risk factors occurrence and mitigate the impact of a condensate storage tank fire in PT TPPI.

**Keywords:** Oil storage tank fire; risk management; external floating roof; RFMEA; Fuzzy Fault Tree Analysis.

**ABES-1128-130**

**ROOM: BRI-1**

**15:25 - 15:35**

### **The Effect of Islamic Work Ethic toward Teacher Performance with Work Motivation as an Intervening Variable at Sabilillah Islamic Boarding School in Sampang**

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**Abstract** - In an educational institution in Islamic boarding schools to create quality human resources, teachers are at the forefront, because teachers are directly dealing with students in the delivery of the learning process. The

purpose of this research is 1) determining the direct effect of Islamic work ethic on work motivation and teacher performance, 2) investigating the direct impact of work motivation on the teacher performance, 3) describing the indirect consequence of Islamic work ethic to the teacher performance through work motivation. In order to examine the hypothesis testing, the researcher employed path, in order to examine the hypothesis testing, the researcher employed path analysis. The data used in this study were all teachers who worked at Sabilillah Islamic Boarding School in Sampang totaling 117 teachers. The analysis showed that there is a direct effect of Islamic work ethic on work motivation and teacher performance, direct effect work motivation on the teacher performance and indirect influences of the Islamic work ethic to the teacher performance through work motivation.

**Keywords:** Islamic Work Ethic; Work Motivation; Teacher Performance.

**ABES-1206-266**

**ROOM: BRI-1**

**15:35 - 15:45**

### **Strategic Communication of Entrepreneurship Education for Digital Generation**

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**Abstract** - Entrepreneurship and the creative economy are important sectors in sustainable development that have proven capable of being the backbone of the country's economy. Supporting this, entrepreneurship education began to be developed in almost all universities in Indonesia with a variety of processes aimed at creating entrepreneurs. The development of entrepreneurship culture also received support from the government through various entrepreneurship facilitation programs in tertiary institutions. One of the challenges faced in the entrepreneurship education process is the change in student trends that have led to the digital generation. Transformation of communication strategies in entrepreneurship education programs in tertiary institutions is needed so that they are always relevant to the changing times and trends of generations that tend to have different characteristics and learning styles. The study was conducted using descriptive methods with library research, interviews and observations on entrepreneurship education practices at Dian Nuswantoro University Semarang. This paper produces an explanation of the practice and communication strategies of entrepreneurship education for the digital generation, with an analysis of the communication elements which include communicators, messages, channels (media), receiver and effects.

**Keyword:** Strategic Communication; Entrepreneurship; Digital Generation.

**ABES-1206-255**

**ROOM: BRI-1**

**15:45 - 15:55**

### **The Performance of Regional Budget Agency in implementing performance-based budgeting in Maros District- South Sulawesi**

<sup>1</sup>Aslinda\*, <sup>2</sup>Muhammad Akmal Ibrahim, <sup>3</sup>M. Imadudin Akmal, <sup>4</sup>M. Ikramullah

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**Abstract** - Budget has important role in the effort of increasing the performance and effects the government to effectively, efficiently, and professionally run the government system. This research aims to analyze and explain the performance of Regional Budget Agency in implementing performance-based budgeting in Maros District. The research design for this research uses qualitative method. The research result shows implementation of performance-based budgeting in Regional Budget Agency in Maros District has referred on government regulation of minister of home affairs 9, No. 21 of 2011 about guidance of regional budget management with using budget performance indicator among the input, output, outcome, and impact from every program. The finding of this research also explains that Regional Budget Agency of Maros District in implementing performance-based budgeting has not used expense standard analysis (ASB), it is a system which focuses on evaluating the appropriateness of active program and activity, this research finds that program and activity which is run on the sub division on Regional Budget Agency are still difficult in looking appropriateness of workloads and cost on an event and indicating of subjective budget determination, because there is no expense standard which eases in deciding budget organizing with measured calculation formula. In addition, this research also founds the measurement method which is used by Regional Budget Agency in deciding the activities of performance-based budgeting in Maros District Government is only based on performance report (LAKIP) as a tool that has function to measure the performance with showing the presentation of program achievements and active programs.

**Keywords:** Budget implementation; Based-on Performance; Maros District.

**ABES-1206-259**

**ROOM: BRI-1**

**15:55 - 15:05**

### **Islamic Business Ethics Towards Company Performance Through Intellectual Capital and Organizational Commitment at Baitul Mal Wa Tamwil (BMT)**

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**Abstract** - Baitul Mal wa Tamwil (BMT) is an Islamic microfinance institution that operates as a business line (*Tamwil*) to facilitate micro and small businesses, the other hand performs a social function that is collecting, managing and distributing ZISWAF (Zakat, Infaq, Sadaqah, Wakaf) in order to drive the economy of poor (lower level) community. BMT is more appropriate among SMEs than other financial institutions because it is more flexible, for example in terms of conditions and the amount of loans and flexibility in credit disbursement. The purpose of this study is to analyze the sustainability of BMT performance which implements Islamic business ethics through intellectual capital and organizational commitment to BMT performance. This study uses pragmatism and quantitative approaches. The population of this study is BMT leaders in six provinces of Java under the coordination of Inkopsyah with a sample of 283 respondents, research data collected using questionnaires, independent variables are Islamic business ethics, company performance is the dependent variable and both Intellectual capital and commitment organization as a mediation that is analyzed using PLS. The results of this study indicate that Islamic business ethics directly significantly and positively influences company performance as well as intellectual capital and organizational commitment proven to be able to mediate the indirect effect of Islamic business ethics on company performance by mediating types of partial mediation.

**Keywords:** Baitul Mal Wa Tamwil; Etika Bisnis Islam; Kinerja; Modal Intelektual; Komitmen Organisasional.

**ABES-1128-132**

**ROOM: BRI-2**

**13:30 - 13:40**

### **Professionalism-Based Intrapreneurship Diagnosis and Analysis Culture to Bridge Innovation Through Approaches Importance Performance Analysis Theory**

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**Abstract** - The still low attitude of entrepreneurship and low innovation from employees owned by the Company makes research on the implementation of corporate entrepreneurship (intrapreneurship) necessary to be carried out at PT Perkebunan Nusantara IX (Persero) with 14 work units in the province of Central Java. This study aims to analyze how the entrepreneurial orientation of employees of the target companies (EOS) and the Entrepreneur Leadership (ELQ) attitudes of employees of the target companies that are analyzed by IPA (Importance Performance Analysis). As well as how the effect of Organization Learning with indicators (mental models, shared vision, systems of thought, personal mastery, team building), Transforming Organizational Culture (with indicators Proactive, Risk Tolerance, Innovative) and Innovation with indicators of innovation, capacity to innovative and willingness to change) with Competitive Advantage (with indicators of uniqueness, reliable strategies and consumer value). The implementation of this research is expected to be able to contribute to the Plantation Company with policies in an effort to improve the company's competitive advantage and contribute to existing knowledge. This research was conducted at one of the Plantation Companies in Indonesia which has 16 plants in Central Java including the Banaran Village Work Unit. The sample used is employees who also have a business as a target of PTP Nusantara IX with a nonprobability sampling technique. The analytical tool used is Structural Equation Modeling (SEM). There were 160 respondents who participated in this study, but there were 120 questionnaires that were eligible to be processed. Data obtained from the results of the questionnaire were further analyzed by confirmatory and regression weight with the AMOS 24 program. Research findings using the IPA (Importance Performance Analysis) approach show that there is a gap between Perception and Expectation where how important is his behavior to describe expectations and how often his behavior describes Perception. To achieve competitive advantage, Organization Learning with indicators (mental models, shared vision, systems of thought, personal mastery, team building), Transforming Organizational Culture (with indicators Proactive, Risk Tolerance, Innovative) and Innovation with indicators of innovation, capacity to innovative and willingness to change) shows a positive and significant effect. This was tested using SEM analysis tools which were further analyzed by confirmatory and regression weight with the AMOS 2 program. Based on the loading factor numbers on each indicator of each Independent Variable analyzed by second order, the things to note are the loading factor values which has a higher number for each indicator.

**Keywords:** Competitive advantage; Organization Learning; Cultural Transformation; Innovation.

**ABES-1128-133**

**ROOM: BRI-2**

**13:40 - 13:50**

### **Internationalization Model for Increasing the Competitiveness of Local Creative Industries in Asean Economy Community**

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**Abstract** - The main problem in this study is the weak performance of SMEs. This can be caused by business culture factors (market orientation and entrepreneurial orientation) as well as competitive strategy factor in SMEs. The research problem raised was how the effect of market orientation, entrepreneurial orientation, and competitive strategy on SME performance. The purpose of this study was to analyse the effect of market orientation, entrepreneurial orientation, and competitive strategy on SME performance. The research sample was 100 creative industry SMEs in Special Region of Central Java Province with business field of handicrafts (various handicrafts of silver, natural fibres, earthenware, leather, and wood) and fashion business field (various batik). Hypothesis testing used path analysis. The results show that there is a positive and significant influence between market orientation and entrepreneurial orientation on competitive strategy (differentiation, low cost, and focus strategies). Market orientation and entrepreneurial orientation have a positive effect on SME performance. Competitive strategies (differentiation, low costs, and focus strategies) have a positive effect on SME performance. Entrepreneurial orientation has a higher direct influence than market orientation.

**Keywords:** Entrepreneurial orientation, competitive strategy, performance

**ABES-1129-145**

**ROOM: BRI-2**

**13:50 – 14:00**

**The Development of Modelling Factors Influencing the Consumers to Use Fintech Payment Services in Indonesia (Case Study: LinkAja)**

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**Abstract** - Fintech payment is a form of financial transformation that develops along with change in people's lifestyles which are currently dominated by the use of information technology and demands of fast-paced life. Based on data from Bank Indonesia digital payment transactions through fintech, the trend grew to 77.6% at February 2019. This shows the increasing enthusiasm of Indonesian people to use of fintech as digital payments. However, according to the OJK, there are risks of using fintech payment, namely the potential for fraud and data privacy abuse from hacker attacks. This can affect the trust of consumers to use fintech services, furthermore fintech providers in Indonesia need to make efforts to maintain trust and service quality for their consumers. According to Snap chart Survey on May, 2019, the fintech market leaders for digital payment applications are OVO (58%) and Go-Pay (23%), while LinkAja's market share for fintech payments is still very small (1%). So, this research aims to develop a model that affects consumers in Indonesia in using fintech services, so their expectations can become an insight for LinkAja to increase market share. This study offers a UTAUT2 development model by adding service quality and trust variables, where both of these variables in previous studies have been shown to increase Behavioral Intention. The method used to analyze the model is the Structural Equation Model. Research data collection was carried out through an online questionnaire. This study examines 12 hypotheses that affect behavioral intention and use behavior in using fintech payment services in Indonesia.

**Keywords:** Fintech; Service Quality; Trust; UTAUT2; SEM

**ABES-1129-153**

**ROOM: BRI-2**

**14:00 - 14:10**

**The Influence of Work Experience on Job Rotation (Case Study on Post Office Manager in Regional IV Jakarta)**

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**Abstract** - Job rotation is one of the tools used by management in order to develop the competencies of its employees. In addition, job rotation can also be used as a way to avoid stress or pressure on employees. With the job rotation program that is carried out regularly, this can help increase the productivity of existing employees in an organization. Empirically, the job rotation program carried out by an organization, in addition to developing competence, reducing pressures faced, and increasing employee productivity, this job rotation program also serves to prevent fraud in the organization. How important the effects produced by job rotation, the organization must do it well and regularly. One of the factors that influence the success of job rotation is the work experience of the employee to be rotated. This study aims to analyze the effect of work experience on job rotation in PT Pos Indonesia Regional IV Jakarta. The results showed that the managerial experience variable had a significant positive effect on job rotation ( $p = 0.006$ ). Model fit with existing data based on Goodness-of Fit Index criteria with the results of Chi Square evaluation of 1100,906, with a significance level of 0.056 and RMSEA values (0.021), GFI (0.783), AGFI (0.762), CMIN / df (1.071), TLI (0.983) and CFI (0.984).

**Keywords:** Work Experience; Job Rotation

**ABES-1129-156**

**ROOM: BRI-2**

**14:10 - 14:20**

**Entrepreneurial Orientation Towards Access to Finance of Startups in Indonesia**

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**Abstract** - Indonesia is the largest market in the Asia Pacific and ranks third in Asia after China and India. More than half of Indonesia's population actively access the internet network every day to enjoy diverse services, including e-commerce, fintech, and also on-demand services. With the growing digital economy market opportunities, Indonesia in recent years has been active in building startup ventures that is expected to build the country's economy. However, a startup company will not be able to run smoothly when faced with a problem, one of which is the limited funding and capital. With entrepreneurship being the nature of startups, this study aims to see whether access to finance of a startup company can be influenced by entrepreneurial orientation within the company, moreover, how the relationship between the two is mediated by the company's growth. Based on the results of multiple linear regression and binary logistic regression, the dimensions of risk taking and innovativeness of entrepreneurial orientation have been shown to influence access to finance from venture capital, and fully mediated by the growth of the company.

**Keywords:** -

**ABES-1130-162**

**ROOM: BRI-2**

**14:20 - 14:30**

**The Financial Feasibility of Business Pulses and Mobile Internet Plans continues Based on Technical Configuration**

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**Abstract** - One type of business in the field of services integrated by the internet network is the distributor of pulses and Mobile Internet Plans. Entering the 4.0 era, the need for information supported by the internet is higher among consumers, so the consumption of pulses and Mobile Internet Plans continues to increase. This is an opportunity to open or develop the business. Problems that occur among entrepreneurs are when determining three aspects including price, internet network and services. This research tries to develop three alternative (low, medium and high) operations that integrate the three aspects. These three alternatives will be chosen based on technical analysis and Human Resources (HR) which will have an impact on the financial aspects. The alternative chosen is determined by a financial feasibility analysis consisting of payback period (PP), net present value (NPV) and internal rate of return (IRR). The results of this study indicate that alternative highs produce the highest profits for 60 months.

**Keywords:** -

**ABES-1130-180**

**ROOM: BRI-2**

**14:30 - 14:40**

**Transforming Corporate Social Responsibility Towards Industrial Evolution 4.0: Strategy and Challenges**

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**Abstract** - Purpose of Paper: The purpose of this study is to explain how the strategies and challenges of corporate social responsibility lead to the industrial revolution 4.0. Method Used: The method used is descriptive qualitative method. Researchers analyze existing issues related to corporate social responsibility in the face of the industrial revolution 4.0, then formulate existing problems, and look for strategies to solve problems and explain the challenges faced. Results: The key to the industrial revolution 4.0 is Human Resources and technological innovation, then the right strategy to deal with it, the Social Responsibility of the Community must give a large portion of these two things in its CSR program, while the challenges faced are social problems, that will occur public unrest due to the reduction in labor because it was replaced by machines, computers and robots. Therefore, the CSR program must pay attention to this in the future. Discussion: The 4.0 Industrial Revolution is talking about information systems and computers that are built with wireless structure systems. Two things that need to be focused on are Human Resources and Technological Innovation, to build these two things, the role of CSR is also very important to lead to the industrial revolution 4.0.

**Keywords:** Corporate social responsibility; Industrial Revolution 4.0; Human Resources; Technology Innovation.

**ABES-1201-184**

**ROOM: BRI-2**

**14:40 - 14:50**

**Brand Credibility vs Brand Image. A Case Study of GoJek Customers' Loyalty**

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**Abstract** - The present study aims to determine the influence of brand credibility on brand image as well as investigate the effect of brand credibility and brand image on the customer loyalty. The study was conducted to GoJek brand operated at a district in Indonesia. To achieve the objective, the study utilized descriptive and



verificative approach. The study involved 100 respondents who were selected by using purposive sampling technique. The data were collected through library studies and observations. The data were analyzed by using path analysis with the SPSS V20 program. The results showed that the brand credibility affects brand image and partially affects customer loyalty. This shows that the higher the brand's credibility, the higher the brand image that will form in the minds of customers. Conversely, the lower the brand's credibility, the lower the brand image that will be inherent in the minds of customers. The results of this study are expected to contribute to further research or become additional information for the academics and the GoJek Company itself.

**Keywords:** Brand Credibility; Brand Image; Customer Loyalty

**ABES-1201-191**

**ROOM: BRI-2**

**14:50 – 15:00**

**Analysis of Local Government Efforts in Local Economic Resources Development  
(A Case Study of Superior Commodity Development in Sumenep Regency)**

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**Abstract** - Regional autonomy is the right momentum for all local governments in Indonesia to move up to carry out regional development by maximizing the potential of their local economy to realize the welfare of society. The local economic development approach is holistic so that it is widely used by local governments because it is considered capable of overcoming various problems encountered. The purpose of this study is to analyze the efforts to develop local economic potential based on local economic resource development, in the main commodity of Sumenep Regency, namely shallots. A series of observations, documentation and structured interviews were carried out at the head of the agriculture, food crops, horticulture and plantation offices and their staff, the head of Rubaru's Agricultural extension center, academics, local media journalists and the Gapoktan chairman who together wanted to realize community welfare and improve the quality of community life. The results showed that a number of efforts had been made to develop local economic resources. These efforts include developing the onion planting area since 2017-2019 with a total area of 41 hectares, and the amount of shallot production has increased from 4,270.20 tons in 2016 to 5,639 tons in 2019, increasing the competency of farmers and staff resources field extension agent (PPL) through technical guidance, guidance and counseling as well as increasing the role of PPL, infrastructure development / development, procurement of agricultural production equipment (alsintan), supply and increase of seed production, introduction of soil processing technology. Nevertheless, a high level of commitment from the local government is needed to remain consistent in increasing the potential of the local economy by developing regulations related to marketing networks that protect farmers, especially in determining the price of onions. In addition, there is also a need to increase competitiveness in the form of processed onion products which currently do not yet exist and the need for collaboration with the private sector, academics and the media.

**Keywords:** Local Economic Resources Development (LERD); Superior Commodity; Collaborative Governance

**ABES-1203-202**

**ROOM: BRI-2**

**15:05 - 15:15**

**Does the Tourist Destination Image affect the Intention of Spa Tourism in Bandung?**

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**Abstract** - People who are health conscious and actively enjoy tourism activities such as pampering the body, visiting spas, receiving medical care, improving fitness and adventure. This type of tourism is defined as wellness tourism. Wellness tourism is defined as a phenomenon to improve personal well-being for those who travel to destinations that provide services and experience to rejuvenate the body, mind and spirit. Indonesia has an extraordinary potential of Human Resources in the Tourism sector; the Spa Industry is included in 3 areas of the tourism industry. The Spa and Wellness Industry in Tabah Air has the potential to drive Indonesia's tourism sector to become increasingly competitive and competitive. An event entitled the Spa & Wellness Tourism Award 2019 themed (Heritage Spa Indonesia) held by the Ministry of Tourism as a form of support for Spa tourism in Indonesia. The number of tourists visiting Bandung according to BPS City of Bandung is for tourists 173,036, while domestic as many as 4,827,589. Tourists who visit are not just looking for tourist attractions, but also looking for a place of relaxation to unwind from work. The independent variable in this study is Destination Image which is seen from the dimensions, namely: cognitive image, affective image, and overall image. While the independent variable is Behavioral Intention seen from the dimensions, namely: Keep Visiting, Recommended and Positive WOM. Destination Image affects Behavioral Intention, both partially and simultaneously. The relationship is a positive relationship which means the Destination Image relationship to Behavioral Intention is very strong.

**Keywords:** Wellness Tourism; Destination Image; Behavioral Intention; Spa tourism; Spa Indonesia

**ABES-1203-213**

**ROOM: BRI-2**

**15:15 - 15:25**

### An Exploration of an Entrepreneurial Strategy in a Resource-Constrained Region: A Case Study of Cocoa Bean-To-Bar Business Venture in Aceh

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**Abstract** - Indonesia is the third largest cocoa producing country after Ivory Coast and Ghana. Aceh Province is one of the cocoa-producing regions in western Indonesia. However, the slow rate of development of Aceh province plays a role in inhibiting the emergence of entrepreneurship in Aceh. This study examined the phenomenon of entrepreneurship in in resources-constrained area and hostile with entrepreneurial activity. The study takes Aceh as area and use the phenomenal cocoa business venture, *Socolatte*, as the object of the case study. The study reveals that the entrepreneurial strategies which commonly advised and applied in the resources-constrained and under-developed area are also applicable in Aceh. The study shows that the entrepreneur applied different treatment to obtain and manage resources. The entrepreneur emphasized that the physical resources and labor are the importance factors which need to be considered in creating the venture in depleted and penurious environment. By using the resourcefulness strategies as the frameworks in interpreting the data, it can be concluded that the bricolage and improvisation were used by the entrepreneur as the strategies. The strategies were not only used in acquiring and managing the resources but also used as tools to assist the entrepreneur in finding alternative solutions to alleviate the problems in the venture. These strategies can be considered to be applied as the framework which can abet the potential entrepreneurs, particularly in Aceh, to create a venture in such resources-constrained area.

**Keywords:** Entrepreneurship; Resources-constrained; Aceh; Bricolage; Cocoa

ABES-1206-271

ROOM: BRI-2

15:25 - 15:35

### The Role of Cultural Values in Entrepreneurial Process of a Female Entrepreneur in Aceh: Study Case Gayo Coffee Industry

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**Abstract** - Gayo Coffee industry is one of the most promising sectors in Aceh. The popularity of Gayo Coffee both in national and international market led the emerging start up in this sector. Until recently, Gayo Coffee industry is dominated by male entrepreneur. Male domination of the Gayo Coffee industry is a significant cultural factor as it effects the opportunity for women in this industry. This study seeks to broaden understanding of women's entrepreneurial process by exploring issues of cultural role in entrepreneurial and networking process of a woman entrepreneur in Aceh, Indonesia. The aim of this study is to know how a woman entrepreneur in Aceh can successfully establish her own business against the traditional gender stereotype in the society. Data of this study was collected through in-depth interview and study comparison. Data from this study was synthesized using biographical method. The participant of this study is a woman entrepreneur from Gayo Highland, Aceh Mrs. Riskani. Result of this study showed that culture plays a significant role in entrepreneurial process. The findings of this study suggest that women in Aceh should have equal opportunities as men in terms of career choice. Furthermore, this study also intended as a reference for Aceh community to reframe the traditional gender stereotype towards working women, so that women in Aceh in the future could have equal right as men in terms of career choices.

**Keywords:** Aceh; Gender; Culture; Entrepreneurial Process; Networking.

ABES-1207-376

ROOM: BRI-2

15:45 - 15:55

### Analysis of the Effect of Inflation Rates and Unemployment Rates on GDP Per Capita of Countries in the World Using Panel Data Regression Method

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**Abstract** - National development can be interpreted as a deliberate economic, social and cultural transformation through policies and strategies in the desired purpose. National development can also be interpreted as a continuous increase in Gross Domestic Product (GDP) in a country. Some modern economies have begun to prioritize the dethronement of GNP, poverty line alleviation, unemployment, increasing income distribution, and decreasing existing income. The use of development indicators and variables can be different for each country. One economic indicator used by international institutions is per capita income. This indicator is part of human welfare, so that it can consider the welfare and prosperity of the community. In economic terms, there are inflation and unemployment rates. Inflation is a

process of reacting to prices generally associated with market changes that can be caused by various factors. The unemployment rate is the total amount of unemployed compared to the amount of work specified in percentages. This research was conducted by analyzing the inflation rate and unemployment rate to GDP per capita. The data used are secondary data taken from the tradingeconomics.com website which includes data on GDP, inflation rates and unemployment rates of 85 countries in 2014-2018. Data are analyzed using the panel data regression method with EViews 10 software. The results of the analysis using panel data regression with a random effect obtained the inflation rate and unemployment rate are negatively related to GDP per capita.

**Keywords:** economic; GDP; inflation rate; unemployment rate; panel data regression.

**ABES-1207-373**

**ROOM: BRI-2**

**15:45 - 15:55**

### **Analytical Hierarchy Process (AHP) as an Approach to Sharia Banks**

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**Abstract** - Analytical Hierarchy Process (AHP) in this study is used as a tool to help find out how to choose Islamic banks. AHP considers factors or criteria based on analysis to solve multi-object and multi-criteria problems based on the comparison of preferences of each element in the hierarchy. The population in this study is the customers of Bank Muamalat and Bank Syariah Mandiri in Garut Regency, with the sample used is simple random sampling and incidental sampling. The number of samples is 40 customers. In addition to AHP, the analysis used in this study is Descriptive Analysis. This research is organized into 3 levels of criteria, the first level answers the formulation of the bank selection problem. The second level analyzes the factors taken into consideration in the selection of banks, which consist of 5 factors, namely religious, mass media, family, location and service quality. The third level is a combination of bank choices with the five factors. The results of this study indicate that the bank which is the most choice of customers is Bank Muamalat at 54.8 percent and Bank Syariah Mandiri at 45.2 percent.

**Keywords:** Bank Selection, Analytical Hierarchy Process, Criteria.

**ABES-1222-410**

**ROOM: BRI-2**

**15:55 - 16:15**

### **Innovative Governance Model of Small and Medium Tourism Entreprises (SMTEs) Empowerment: A Stakeholder Analysis of Lumajang Regency**

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**Abstract** - The purpose of this research is to find out and analyze the role of stakeholders, the coordination system, and formulate an innovative governance model for empowering small and medium businesses in tourism in Lumajang Regency. The research method uses a qualitative approach with descriptive analysis techniques, data collection by conducting in-depth interviews with the Regional Apparatus Organization and SMTEs. The results of this study indicate that stakeholders involved in empowering SMTEs in Lumajang Regency consist of key, primary and secondary stakeholders. Key stakeholders consist of the Tourism and Culture Office and Regional Development Planning Agency. Primary stakeholders consist of the Transportation Office, Agriculture Office, Public Works and Spatial Planning office, Social Affairs office, Manpower Office, Community and Village Empowerment Office, Trade Office, Cooperatives and Micro Enterprises Office, Communication and Information Office, and Environmental Office. Whereas secondary stakeholders consist of Tourism Awareness Group, Rural Community, and the media. The role of stakeholders in the empowerment of SMTEs is divided into very high to low interest groups. And the influence is very high to low. The institutional coordination system in empowering SMTEs in Lumajang Regency consists of a vertical and horizontal coordination system. Vertical coordination has been done and the relationship tendency is good. Whereas horizontal coordination between Regional Apparatus Organozations have not been carried out routinely and the relationship still needs to be improved. Innovation of an effective governance model that empowers SMTEs is the establishment of governance structures that are oriented towards empowering SMTEs. This is a joint task whereby SMTEs are empowered, tourist destinations will be more attractive, and tourism competitiveness will increase. The required governance innovation is a combination of elements of the pentahelix model in empowering SMTEs.

**Keywords:** National Park, Bromo Tengger Semeru, roles, involvement, influence, coordination

**ABES-1206-272**

**ROOM: BRI-3**

**13:30 - 13:40**

### **Formulating Strategies for Improving the Competitiveness of Cajuput Small Industry in Buru Regency's (A Case Study)**

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**Abstract** - Buru regency is the largest cajuput forest in Indonesia. Producer the cajuput oil in the region dominated by small industries (99.38%), which faced some obstacles of competitiveness. This research aimed to determine the best strategy for improving the competitiveness of cajuput's small industry. Formulating the strategy used IFE and EFE matrix, IE matrix, and expert judgment. By using the AHP method, the judgment value based on cost and benefit criteria calculated. This result showed that 25 internal factors and 20 external factors affected the cajuput small industry. Moreover, the total score of both factors was in the V-quadrant of the IE matrix, and the strategic position was holding and maintaining. Thus, 10 strategies regarding to the quadrant were (1) creating a brand and brand awareness for cajuput product, designing a business model, (3) designing a creative and informative packaging, (4) designing a marketing and distribution system, (5) increasing and maintaining the quality of cajuput oil which related to the market preference or Indonesian National Standard, (6) developing a downstream product, (7) investing in the scaling-up of distillation equipment, (8) promoting cajuput product with social media ads and e-commerce, (9) doing direct selling and promotion, and (10) creating an intensive cooperation and promotion with potential distributors. Then, the main strategies were increasing and maintaining the quality of cajuput oil which related to the market preference or Indonesian National Standard, investing in the scaling-up of distillation equipment, and creating a brand and brand awareness for cajuput product.

**Keywords:** Competitiveness; Cajuput Oil; Small Industry; Buru Regency

ABES-1206-275

ROOM: BRI-3

13:40 - 13:50

### Analysis the Readiness of Integrated Reporting of Mining Company in Indonesia

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**Abstract** - The shifting reporting policy from Sustainable Reporting to Integrated Reporting requires all listing companies to provide information based on Integrated Reporting Framework. This research aims to identify the readiness of the mining company in fulfilling all elements of integrated reporting proposed by the International Integrated Reporting Committee (IIRC). This research is quantitative, testing the score value of Integrated Reporting element. The score value of Integrated Reporting elements identified from Mining Company's Annual Report, sustainability report and the information presented on the company website. This research use eight elements of the Integrated Reporting Framework which are Organizational Overview and External Environment, Governance, Business Model, Risk and Opportunities, Strategy and Resource Allocation, Performance, Outlook, and Basis of Preparation of Presentation. The population of this research is the mining company listed on the Indonesian Stock Exchange (IDX) in 2017 and 2018. The sample was taken by using purposive sampling method. Research data analysis using descriptive statistical analysis in tabular form. The result shows that 7 companies implement all element Integrated Reporting voluntarily. The findings show that the 83% IDX-listed mining companies have presented an annual report in accordance with the element of integrated reporting This research also finds that there an inconsistency of other mining companies in implementing the element of Integrated Reporting.

**Keywords:** integrated reporting, mining, voluntarily, readiness.

ABES-1203-292

ROOM: BRI-3

13:50 - 14:00

### Effects of Brexit on Employability and Qualification Recognition of Accountants and Auditors in the UK - "Faith of Accountants and Auditors Working outside the UK"

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**Abstract** - This study aims to examine the effects of the United Kingdom exiting the European Union (Brexit) on employability of Accountants and Auditors who already had a UK qualification, will they be allow to work outside the UK after Brexit (no deal). This study finds the answers to this question. For this study, data is gathered through a collation of prior research articles, reports magazine and other secondary source of data. The study revealed that, auditors and accountants may be potentially affected negatively by a change in their capacity to carry out audits and accounting service cross border, the number who carry out such work may be quite small. The Paper will hopefully serve as a useful primer for stakeholder discussions and decisions on strategy in the medium term and the regulation of the accountancy and audit profession post-Brexit. As the shape of Brexit becomes clearer IAASA's primary objective is to have a seamless transition and a continuation of high professional standards and a properly functioning audit and accountancy profession. The study specifically links the findings from academic research to the discussion questions posed by the public from time to time. Several potential implications of the findings should also interest accountants and managers in and outside the UK. It is of benefit to students, and researchers in the face of little empirical literature available in this area of study.

**Keywords:** Brexit, Employability, Accountants, United Kingdom

ABES-1207-398

ROOM: BRI-3

14:00 - 14:10

### Broiler's Supply Chain Analysis at Wonogiri Regency, Central Java Province

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**Abstract** - The purpose of this research is to find out the model and form of distribution flow coordination on Broiler's supply chain at a chicken farm in Wonogiri district. This research is a qualitative research and the data collecting method is done by observing, interview, and documentation. The results showed that the model and form of distribution flow coordination on Broiler's supply chain at a chicken farm in Wonogiri district started from farmers selling all livestock production to companies that are permanent partners of the farmers, subsequently the company sells livestock production to the brokers. The brokers processed the broilers into chicken meat and then distributed to traders, retailers, restaurant, supermarket, and also sell it directly to the consumers. According to the findings of the research, it is recommended to the farmers that it would be better to lessen the company's role by directly sell the broilers to the brokers, so that the farmers would be able to gain more profit and simplify the distribution flow.

**Keywords:** Supply Chain; Distribution; Broiler.

**ABES-1207-314**

**ROOM: BRI-3**

**14:10 - 14:20**

### **Is Inbound Marketing the Right Choice in the Industrial Revolution 4.0 Era?**

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**Abstract** - The world has entered the era of the industrial revolution 4.0 that brings change to human life. The impact of the digital industry revolution 4.0 is the development of the Internet in the industrial and commercial world so as to bring up a new system. One result of the digital industrial revolution is the dynamics of the marketing model. Traditional marketing models (outbound marketing) have shifted to inbound marketing because it is considered to be cheaper and more favorable than traditional models. But both have different audience characteristics so some industries still maintain the traditional model but combine it with digital inbound marketing model to achieve wider marketing. The new paradigm offers new options for marketing like Internet marketing mix. Initially marketing was oriented toward boosting sales, seizing and retaining customers, and is now changing for long-term marketing. This paper was written to explain the new paradigm of marketing as a result of the 4.0 digital revolution. This paper was a compilation of articles, journals and books that explained the current marketing dynamics paradigm. The results describe the dynamics of the marketing world and the emergence of a new paradigm of the marketing world of the 4.0 digital age.

**Keywords:** Inbound Marketing; Marketing; Industrial Revolution 4.0; Digital; Digital Marketing.

**ABES-1207-330**

**ROOM: BRI-3**

**14:20 - 14:30**

### **Analysis the Marketing Margin of Palm Oil Distribution Network in Bengkalis Regency's**

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**Abstract** - The business of palm oil plantation in Bengkalis Regency dominated by smallholder which has Fresh Fruit Bunches (FFB) as the main product. The amount of FFB production was very high, but the benefits obtained by farmers were very low due to the distribution network of the product is long. The aimed of this study is to analyze value stream mapping (VSM) of the palm oil in Bengkalis Regency and to analyze the value of marketing margins that received by farmers in the palm oil distribution network. Data used in this study were primary dan secondary data. The primary data were collected by observation and interview with the farmers from Pinggir, Mandau, Bantan, and Bengkalis District, whereas, the secondary data were accessed from the Department of Plantation in Bengkalis Regency. Moreover, the data were analyzed by using value stream mapping and marketing margin methods. The results of this study indicated that there were five palm oil distribution networks in Bengkalis Regency, Network I (farmer-collector-trader-industry), Network II (farmer-trader-industry), Network III (farmer-collectors-cooperation-industry), Network IV (farmer-cooperation-industry), and Network V (farmer-collector-industry). The most network chosen by the farmers was Network II, with a 44% value of VSM. Meanwhile, the smallest value was Network IV, with a 2% value of VSM. The largest margin obtained in Network II with the value at the farm level of 90,07% in Mandau sub-district, while the smallest marketing margin was obtained in the Network I with a value of 72.73% in Bengkalis District.

**Keywords:** Bengkalis regency; distribution network; oil palm; VSM; marketing margin

**ABES-1207-338**

**ROOM: BRI-3**

**14:30 - 14:40**

### **The Policy Implementation of Program *Gerakan Ayo Sekolah* to Reduce Dropout Children in Bojonegoro Regency**

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**Abstract** - Community welfare shows the size of the development of community in achieving a better life by one of the ways to make a better educated for Indonesian children. It is undeniable that there are still many school-age children who are not in school or drop-out. For example, in Bojonegoro, according to information from the Bojonegoro head of education, children aged 7-18 years old who do not get school bench amounted to 667 children (SD), 1,103 Children (SMP), and 2,221 Children (SMA). Meanwhile, the number of dropped schools there reached 1,330 children (SD/MI), 3760 Children (SMP/MTs), and 3042 Children (SMA). Lower level of education has made social problems for the Bojonegoro district because of the economic growth of Bojonegoro Regency in 2014 by 6.19% which placed it at number 9 in East Java. The economic rankings of Bojonegoro district decreased from the previous year, 2013 was ranked 5th in East Java (BPS, 2015). This indicates that the economic level of Bojonegoro district has a good growth, but there is no change in the level of education for the children of Bojonegoro. Seeing the reality, the government of Bojonegoro district created a new program to solve the problem above is "Gerakan Ayo Sekolah". This school movement is a real step taken by the government of Bojonegoro regency by giving funds to the children of school age, especially the age of 7-18 years. The purpose of this research is to know how to implement a Gerakan Ayo Sekolah in Bojonegoro district and to find out how the impact of the Gerakan Ayo Sekolah to improve the quality of children's education. This research includes a type of qualitative descriptive research. Research conducted in the Bojonegoro regency of East Java province. Data collection techniques are performed by observation, interviews, and documentation. The data analysis techniques using qualitative analysis. The results showed that Gerakan Ayo Sekolah Program in Bojonegoro has been executed in accordance with the regulation of the government of Bojonegoro District number 8-year 2016 about the guidelines for the fund management of special allocation of education in the field of funds disbursement, and acceptance techniques. It is still not impacting school dropouts, this is because the program is still running for 1 year, so it has not been a real impact on the decline in school children.

**Keywords:** Gerakan Ayo Sekolah; Dropouts;

**ABES-1207-354**

**ROOM: BRI-3**

**14:40 - 14:50**

#### **Implementation of the Innovation in Treatment of Family Card and Birth Card in the Lamongan District**

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**Abstract** - This study aims to describe how the implementation of TTE information in managing Family Cards and Birth Certificates in the Lamongan District as well as measuring the quality dimensions of public service innovation. The theory used in seeing the implementation of this innovation uses the implementation of George C. Edward III related factors that influence this program. To measure the quality of service innovation using SERVQUAL theory, namely tangible, reliability, responsiveness, assurance, and empathy. The method used in this research is qualitative with descriptive type. Data collection techniques are carried out by the process of condensing data display data and drawing conclusions. Then to test the validity of the data used data source triangulation techniques. The results showed that the implementation of TTE innovations in the handling of Resident Card and Birth Certificate in Lamongan District, which was seen from the staff, authority and information was quite good. It can be seen from almost all sub-districts in Lamongan that the TTE has implemented the management of Family Card and Birth Certificate in stages. The problem with the system is that sometimes the rest of the error is fine. For the measurement of TTE innovation services, this is very influential for the community and the Office of Population and Civil Registration Lamongan Regency. The community can save money on trips to the Population and Civil Registry Office because it can be completed only at the sub-district office. The work that usually accumulates in the Lamongan District Population and Civil Registry Office is also reduced. Researchers see the need for a system improvement only.

**Keywords:** Implementation; Inovation; Public Services

**ABES-1207-364**

**ROOM: BRI-3**

**14:50 - 15:00**

#### **Prediction of the Quantity of Foreign Tourist in Bali Based on ARIMA and ARIMAX Methods**

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**Abstract** - The United Nation as an intergovernmental organization confirms a Sustainable Development Goals (SDGs) otherwise known as the Global Goals. Out of the 17 goals, the Indonesian government is mainly focused on eradicating poverty. One of the ways is to develop the tourism sector. This sector can move the people's economy because it is considered the most prepared sector in terms of facilities and infrastructure compared to other business sectors. The ministry of tourism and creative economy has targeted 20 million arrivals and 250 trillion rupiahs from foreign tourist arrival in 2019. Bali is one of the destinations and tourist paradise of the world with a million charms of natural beauty, cultural richness, culinary and also the unique religious traditions of the

majority of the community it has. With these various charms, the island known as Dewata Island is able to attract both foreign and domestic tourists, so as to make Bali as a major contributor to the number of national tourists. In this paper, this study applied to predict a foreign tourist in Bali using ARIMA and ARIMAX method. The result show that the best model of ARIMA is  $(0,1,0)(2,1,1)^4$  and there is no model of ARIMAX because there are basic assumptions that are not met. So, we can conclude that the best model to predict a foreign tourist in Bali is ARIMA is  $(0,1,0)(2,1,1)^4$  with the MSE value given is  $8.125 \times 10^{-9}$ .

**Keywords:** Foreign tourist in Bali; ARIMA; ARIMAX.

**ABES-1207-365**

**ROOM: BRI-3**

**15:05 - 15:15**

### **The Mediating Effect of Asymmetric Information on the Financial Decision to Firm Value**

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**Abstract** - There are several opinions about corporate funding decisions based on company value. Asymmetric information between the company management and investors will have an influence on the company's performance and have an impact on the company's value. The purpose of this study is to find out how much influence the funding decisions are mediated by asymmetric information on increasing firm value. After reviewing some of the literature reveals that asymmetric information is a key factor influencing the relationship between funding decisions and firm value. Data were collected as many as 140 samples of 40 Indonesian property and real estate companies listed on The Stock Exchanges of Indonesia. While the sampling period for 7 years from 2010 to 2016, data and data analysis was performed using Amos. The results of this study found that the high or low value of the company depends on management in making policies in accordance with the state of the company. The results of this study indicate that corporate funding policies play a less role in increasing firm value while information asymmetry has a role in increasing firm value. The results of this study contribute to potential investors to be used as a reference for the policy decided by the manager so as to minimize the risks that may occur.

**Keywords:** Financial Decision; Asymmetric Information; Firm Value.

**ABES-1207-374**

**ROOM: BRI-3**

**15:15 - 15:25**

### **Analytical Hierarchy Process (AHP) as an Approach to Sharia Banks**

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**Abstract** - Analytical Hierarchy Process (AHP) in this study is used as a tool to help find out how to choose Islamic banks. AHP considers factors or criteria based on analysis to solve multi-object and multi-criteria problems based on the comparison of preferences of each element in the hierarchy. The population in this study is the customers of Bank Muamalat and Bank Syariah Mandiri in Garut Regency, with the sample used is simple random sampling and incidental sampling. The number of samples is 40 customers. In addition to AHP, the analysis used in this study is Descriptive Analysis. This research is organized into 3 levels of criteria, the first level answers the formulation of the bank selection problem. The second level analyzes the factors taken into consideration in the selection of banks, which consist of 5 factors, namely religious, mass media, family, location and service quality. The third level is a combination of bank choices with the five factors. The results of this study indicate that the bank which is the most alternative choice of customers is Bank Muamalat at 54.8 percent and Bank Syariah Mandiri at 45.2 percent.

**Keywords:** Bank Selection, Analytical Hierarchy Process, Criteria.

**ABES-1203-206**

**ROOM: BRI-3**

**15:25 - 15:35**

### **Implementation of School Community-Based-Waste Management Policy in Makassar City Elementary School**

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**Abstract** - One of the causes of environmental degradation in urban areas is the waste problem. Waste problem arises because of improper human behavior in managing waste. The trigger of this behavior is the lack of awareness in waste management. Waste management education should be given at an early age in school. One of the policies concerning waste management that has been implemented in schools in Makassar City is Local Government Regulation Number 4 of 2011 about Waste Management through 3R (Reuse, Reduce, and Recycle) Principles. This study, used descriptive qualitative approach, aimed to find out the process of implementing this policy in Elementary Schools. The informants were taken from the school community, Environmental Office and Education and Culture Office. Data were collected through interviews, observations and documentation technique and analyzed using qualitative descriptive. The study showed that the implementation of waste management

policy in this school was conducted and organized systematically through School Waste Bank Program. The existence of this program has an important role in raising awareness of the school community, especially that of students, and motivating them to implement 3R in solid waste management.

**Keywords:** implementation; policy; waste management; school

**ABES-1204-218**

**ROOM: BRI-2**

**15:35 - 15:45**

### **The Implementation of Waste Management Policy Based Collaborative Governance in Makassar City**

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**Abstract** - Waste management in Makassar City is the responsibility and authority possessed by the Makassar City Government based on delegation and attribution. Various policies have been issued and implemented by the Makassar City Government to solve problems in the waste field. However, the results until now have not been able to solve the waste problem. The amount of waste generation is increasing while the waste landfills capacity is increasingly limited. The government should share the burden of collaborative waste management with various stakeholders. One of the collaborations carried out by Makassar City Government in implementing waste management policy is manifested in the waste bank management program. This study aims to know the implementation of collaborative governance-based waste management policy in the waste bank program and the influenced determinants. This research used a qualitative approach, data collection techniques used interviews, observation, and documentation. Validation of data was by triangulation. The results of this study indicated that the implementation of collaborative governance based waste management as an effort to overcome waste in Makassar City which involved 3 parties, namely the government through the Makassar City Central Waste Management Unit, the private sector namely Unilever through the *Yayasan Peduli Negeri* (YPN), and the public, namely the Manager Waste Banks Unit were scattered in each village. The determinant factors that influenced the implementation of collaborative governance-based waste management policy were the relationship behavior between organizations, the implementor behavior and the behavior of group target.

**Keywords:** Policy Implementation; Waste; Collaborative Governance

**ABES-1204-220**

**ROOM: BRI-3**

**15:35 - 15:45**

### **Capability of Aparatur Resources in Support of Functions Implementation Regional People's Representative Council of South Sulawesi Province**

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**Abstract** - This research was motivated by the implementation of the secretariat of the South Sulawesi Provincial DPRD, which appeared to be ineffective. This is mainly influenced by the apparatus resources that are considered less productive and professional in carrying out their duties and responsibilities as government officials. This study, used descriptive qualitative approach, aimed to determine the ability of the apparatus resources in supporting the implementation of the functions of the Regional Parliament of South Sulawesi Province. The results of the study showed that the ability of the apparatus resources in supporting the implementation of the DPRD function was not yet optimal. This is based on the skill factor, especially from the background of an average standard of education. Another thing is the apparatus' skills which are considered low because they are not supported by training or workshop knowledge. Behavior or attitude of the apparatus also did not escape the spotlight not yet the maximum ability of the apparatus in completing their duties. The factors that influence the increase in the ability of the apparatus include a work environment that is not conducive. Supporting facilities are considered inadequate when viewed from technological means to support in carrying out the duties and functions of the existing chair and board members. Equally important is that the work culture of the apparatus is still low if measured from the assessment of the applicable operational procedures.

**Keywords:** Ability; Apparatus Resources; Board Members Services.

**ABES-1204-223**

**ROOM: BRI-3**

**15:45 - 15:55**

### **Strategy Formulation in Improving the Financing Performance of PT BPR Syariah Amanah Ummah**

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**Abstract** - This research aims were 1) to analyze the internal and external environmental factors that influence the financial performance of the BPRS Amanah Ummah and compete in the BPRS industry; 2) to identify internal and external factors that influence the development of company performance and the strategic position of the BPRS



Amanah Ummah based on these factors; and 3) to formulate alternative strategies that are accurate and priorities that can be recommended to the company in achieving its objectives. This research was conducted by qualitative methods through a questionnaire to ten experts from the management of PT. BPRS Amanah Ummah or any chosen external party deliberately. The initial stage is to identify internal and external factors that are analyzed using the IFE Matrix and EFE Matrix. Then in the second stage, IE Matrix and SWOT matrix analyzes are performed to determine the company's current condition. At the last stage, QSPM analysis is carried out to determine priorities for the formulation of alternative strategies. Based on the results of the QSPM analysis in determining priority strategies, it appears that the strategy of strengthening the function of public relations and research is a priority strategy of PT. BPRS Amanah Ummah.

**Keywords:** Strategies in Increasing Financing; BPRS Amanah Ummah; IFE, EFE; SWOT; QSPM.

**ABES-1103-004**

**ROOM: BRI-4**

**13:30 - 13:40**

### **Learning Culture Map: Path finding the Sustainable Growth in Industrial Revolution 4.0 Era**

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**Abstract** - Industrial Revolution 4.0 has caused disruptive and continuous changes in managing the business organization fundamentally. It demands the company companies to develop dynamic capability as one of the resources for achieving sustainable growth. Dynamic capability of business organization can be developed by using the learning culture approach. This approach is a combination of two main concept - organizational culture and learning organization. Based on those reasons, the objective of this paper is to measure and to map the learning culture simultaneously in the Indonesia palm oil industry. The palm oil industry is known as the main pillar for economic and social development in Indonesia. This paper involves 367 managerial resources - supervisors and managers in the palm oil industry in Indonesia. Learning culture that occurs in the palm oil industry is quite high (71%), which is reflected into two dimensions: external adaptation (74%) and internal integration (69%). This paper provides the learning culture map by utilizing the culture map concept. The outcome of this paper is recommendation for palm oil company to transform the hierarchical-centralistic into learning culture. Those are (1) considering more low context in communication, (2) giving negative feedback more directly in evaluation, (3) using application-first style in persuasion; (4) more egalitarian in leading the people, (5) more consensual in making decisions; (6) more task-based in trusting others; (7) more confrontational in disagreeing; and (8) more flexible time in scheduling the agenda.

**Keywords:** Learning Culture; Culture Map

**ABES-1106-006**

**ROOM: BRI-4**

**13:40 - 13:50**

### **Analysis of Government Role in Speeding Welfare: Empirical evidence in East Java Province, Indonesia**

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**Abstract** - The objective of this study is to analyze the government role in speeding the welfare in East Java Indonesia. Two Stage Least Square (2SLS) is used. This study applied data for 38 regions of East Java Indonesia for the period of 2012 to 2018 to ascertain the relevance of Solow Growth Theory in measuring the welfare in recent time. The results show that government role through education expenditure, health expenditure, investment have a significant effect on creating the welfare. While, public service expenditure has negative effect on welfare. These results indicate that is accordance to Solow growth theory, that the investment through some of expenditure can create capital accumulation, which in turn create the welfare. Our findings thus conform that Solow growth theory is still relevant in evaluating the government role in speeding the welfare through government spending in developing country such as in East Java Indonesia

**Keywords:** Government Role; Welfare; Two Stage Least Square

**ABES-1106-007**

**ROOM: BRI-4**

**13:50 - 14:00**

### **Fine-tuning Organizational Citizenship Behavior and Knowledge Management Behavior in the Higher Education Institution**

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**Abstract** - The drive to maintain the quality of education in accordance with the development of information technology requires adequate capability in knowledge management. Therefore, the higher education institutions demand the lecturers and also supporting staff to acquire aligned behaviors in organizational citizenship and knowledge management. This manuscript aims to measure organization citizenship behavior (OCB) and knowledge management

behavior (KMB) of supporting staffs in higher education institution. The study was conducted at the Universitas Bina Nusantara, especially supporting staffs in Kampus Kemanggisan Jakarta. Organizational citizenship behavior as the independent variable is reflected perfectly into five dimensions-altruism, civic virtue, consciousness, courtesy, and sportsmanship. Knowledge management behavior as dependent variable is reflected perfectly into three dimensions: knowledge creation, knowledge sharing, and knowledge update. The results of statistical tests show that female supporting staffs more than five years of service has higher score in OCB and KMB significantly. The measurement and structural model which developed by using SmartPLS explains that OCB has a positive and significant impact on KMB.

**Keywords:** organizational citizenship behavior; knowledge management behavior

**ABES-1113-021**

**ROOM: BRI-4**

**14:00 - 14 :10**

### **The Impact of Quality Control Circle (QCC) Implementation on Micro Small Medium Enterprises (MSMEs) in Lampung**

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**Abstract** - In 2017, the Indonesian Chamber of Commerce and Industry stated that there had been an increase in the last five years in the MSME sector with the value of Gross Domestic Product (GDP) from 57.84% to 60.34%. In its influence, Quality Control Circle (QCC), Work Productivity, and Organizational Performance must always be maintained and improved. In this study, the research was conducted to MSME Units in manufactures and services. The purpose of this study was to find the impact Quality Control Circle to measure the accomplishment of Quality Control Circle implementation, Work Productivity, and Organizational Performance in MSMEs in Lampung Province. The method of this study used a descriptive quantitative method. In measuring the impact, this study indicated that 34 instrument variables to measure the Quality Control Circle, Work Productivity, and Organizational Performance and also the impact the implementation of QCC in MSMEs that are often found and faced by MSME Units manufacturing and services. The results of the study explained that the Quality Control Circle, Work Productivity, and Organizational Performance had a significant value in indicating the MSMEs. The achievement of the Quality Control Circle Implementation was divided by 114 QCC MSMEs and 59 Non-QCC MSMEs. Furthermore, Organizational performance measurement between the QCC MSMEs and Non-QCC MSMEs financially and non-financially has significant value as well as the results.

**Keywords:** Quality Control Circle; Productivity; Organizational Performance; Achievement of QCC; MSMEs

**ABES-1124-082**

**ROOM: BRI-4**

**14:10 - 14:20**

### **Is Public Service Motivation Important to Improve the Performance and Job Satisfaction of Civil Servants?**

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**Abstract** - The purpose of this study was to determine the role of employee performance as a moderating variable of the influence of public service motivation on the level of satisfaction among government officials in the Office of Population and Civil Registration (Disdukcapil) of West Pasaman Regency. This research is motivated by the non-optimal performance of these employees, causing a sense of job dissatisfaction for employees. High and low employee performance is assumed to be influenced by public service motivation. This study wants to prove and analyze the influence caused by exogenous variables on endogenous variables both directly and through intermediate variables. This research is a quantitative associative type. The study population was all active employees in the West Pasaman Disdukcapil Institution with a total of 61 employees. The sampling technique uses simple random sampling using the Slovin formula at an error of 3% and a sample of 58 respondents is obtained. Data was collected through a Likert scale questionnaire that had been validated and previously reliably both content and empirical test items. Data were analyzed using path analysis which had previously been tested by classic assumptions and regression tests. Data collection is also supported by documentation studies. Furthermore, the results of the study prove that there is a significant influence of public service motivation variables on job satisfaction directly at 90.7%, and significant influence indirectly or through performance variables of 67.5%. So, it can be concluded that the results of the study have provided evidence that the research model can be used as an academic reason to strengthen the theories and models that have been reviewed in this research study.

**Keywords:** Public Services Motivation; Performance; Job satisfaction

**ABES-1124-083**

**ROOM: BRI-4**

**14:20 - 14:30**

### **Customer Satisfaction Factors to Services of Regional Water Supply Company in Makassar**

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**Abstract** - The purpose of this research is to describe the factors causing user satisfaction (customer) to the service of the Regional Water Supply Company (RWSC) in Makassar. The method used in this research is the quantitative method through a customer satisfaction survey. The research conducted in the Regional Water Supply Company (RWSC) of Makassar, precisely in region 1, region 2, region 3, and region 4. Samples randomly collected amount to 384 respondents from the population of 163,549 customers. The instruments of data collection are questionnaires. The data obtained from the field is processed using technical analysis of descriptive statistical data. The results obtained from each region seen from the technical aspects of customer satisfaction are at the level of satisfaction. Meanwhile, if viewed from the nontechnical aspects, region 1, region 2, and region 4 customer satisfaction is at the level of being quite satisfied. While in region 3 customer satisfaction is at a satisfied level.

**Keywords:** Level of Satisfaction; Quality of Service; Makassar.

**ABES-1125-087**

**ROOM: BRI-4**

**14:30 - 14:40**

**Public Sector Services at Sultan Hasanuddin Makassar International Airport (Case Study of Passenger Service Quality)**

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**Abstract** - The research was conducted at the International Airport of Sultan Hasanuddin Makassar, Primary data was collected with in-depth interview technique with the passengers and airport management officials as well direct observation, while the secondary data obtained from reports, article and operational standard of service. Data were analyzed using analysis of service quality theory. Results of analysis of data showed that the quality of public services at the International Airport of Sultan Hasanuddin Makassar is not maximized, where a negative assessment of passengers is more dominant than the positive assessment. Positive assessment of the physical appearance of the airport, the appearance of officers, the availability of terminal facilities. Negative assessment of the use of airport as a means of promotion and advertising, the reliability of facilities and infrastructure supporting public service facilities such as toilets, parking and traffic flows do not meet standard level of service.

**Keywords:** International Airport of Sultan Hasanuddin Makassar, Quality Public Service, Service Quality.

**ABES-1128-136**

**ROOM: BRI-4**

**14:40 - 14:50**

**Risk Analysis in the Feasibility Process of Providing Small Medium Enterprise Loans to PT. Bank Permata Tbk Makassar Branch.**

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**Abstract** - This research aims to: 1). Knowing the role of risk management units through a risk analysis in the feasibility of providing small medium enterprise loans to reduce the level of risky credit at PT. Bank Permata Tbk. Makassar branch. 2). Knowing the effect of liquidity ratio / leverage factors and profitability on the quality of small medium enterprise credit at PT Bank Permata Tbk. Makassar branch. The analytical method used is descriptive analysis method and multiple linear regression analysis. The research results show that: 1) Risk analysis using risk rating through the analysis of industry, management, financial, collateral and relationship factors using the Credit Risk Management System (CRMS) measurement standardized by risk management has a significant effect on reducing the level of risk loans at PT. Bank Permata Tbk. While the high risk through decisions / policies on the eligibility of SME credit can be controlled by identifying and assessing risks, monitoring risks, implementing policies and saving risk loans by preparing concrete strategies and plans that are active and effective roles carried out by risk management. 2) Together there are real influences on liquidity, leverage and profitability factors on credit quality. The most influential variable on credit quality is profitability (Return on Equity) with the biggest positive  $\beta$  coefficient. This shows that the higher the ROE level of the debtor company, the better the credit quality.

**Keywords:** -

**ABES-1201-201**

**ROOM: BRI-4**

**14:50 - 15:00**

**Knowledge Assembly: Competence in Digital Literacy to Improve Business Performance in the Fashion Creative Industry**

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**Abstract** - The fashion creative industry is a very strategic creative industry in the city of Bandung because it has a high contribution to the Bandung city GRDP and employment. Bandung itself is a fashion icon in West Java and

Indonesia. In the era of the Industrial Revolution 4.0, the strategy of developing a creative fashion industry must be directed at the use of digital technology to support business. Utilization of digital technology must be supported by the mastery of business operators on digital technology or what is referred to as digital literacy. The current phenomenon is that the level of digital literacy is still so low that a strategy is needed to improve it. One competency in digital literacy is knowledge assembly. The purpose of this research is to obtain a description of the level of knowledge assembly and recommend strategies that can be done to improve digital literacy through increased knowledge assembly. The research method used is descriptive survey. Methods of data collection through observation, questionnaires, and in-depth interviews, then the data were analyzed descriptively. Observations using one shoot / cross sectional time coverage

**Keywords:** Business Performance; Digital Literacy; Fashion Creative Industry, Knowledge Assembly.

**ABES-1203-204**

**ROOM: BRI-4**

**15:05 – 15:15**

**Performance Analysis of Share Before and After Online Application on the Sector Registered Transportation in Indonesia Exchange**

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**Abstract** - The purpose of this study was to determine differences in stock performance before and after the existence of online applications in the transportation sector listed on the Indonesia Stock Exchange. The analytical method used is the average difference test of one sample by processing data using SPSS version 20. Based on the results of the analysis it can be concluded that there are differences in stock performance but not significantly in the transportation sector listed on the Indonesia Stock Exchange before and after the online application.

**Keywords:** online application, Stock Performance

**ABES-1206-296**

**ROOM: BRI-4**

**15:15 – 15:25**

**Bayesian Mixture Multinomial Regression Model for Loan Repayment Classification of Village Unit Cooperative**

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**Abstract** - Village Unit Cooperative (VUC) Jaya is an institution that provides financial services in Bondowoso, Indonesia. In the process of providing loans, credit risk is an important factor that needs to be managed. To minimize the risk of default in providing loans, the cooperative needs to predict prospective borrowers as an effort to determine applicants who are eligible for credit facilities and are not at risk of causing bad loans. Modeling will be done using multinomial logistic regression due to the dependent variable which has three categories of loan repayment, there are bad loans, late repayment and pay loans on time. The installment and interest payment system in VUC Jaya consists of two types of systems, namely the monthly payment system and the seasonal payment system which formed a mixture model. Multinomial mixture regression modeling forms a complex likelihood function so that the Bayesian Markov Chain Monte Carlo (MCMC) approach is often used in the estimation of mixture regression parameters. Therefore, modeling will then be performed using multinomial logistic regression and Bayesian mixture multinomial regression to predict the feasibility of credit applications from prospective debtors. The comparative results show that the Bayesian mixture multinomial regression model approach gives a higher percentage of loan repayment classification accuracy than multinomial logistic regression. Therefore, the best model that can represent the loan repayment in VUC Jaya is a Bayesian mixture multinomial logistic regression model.

**Keywords:** Bayesian Analysis; Loan Repayment; Markov Chain Monte Carlo; Mixture Multinomial Regression; Multinomial Logistic Regression.

**ABES-1207-347**

**ROOM: BRI-4**

**15:25 - 15:35**

**Mapping the Potential of Green Economic Development Jakarta City Based on Green GRDP**

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**Abstract** - Environmental problems in the city of Jakarta such as loss of agricultural land, environmental pollution, increased air temperature, low air quality, impacts on water quality and quantity, impacts on public and social health need to be anticipated by applying Green GRDP as a basis for measuring the economy. In 2016 the value of Green GRDP was 99.69% or 0.31% smaller than conventional / brown GRDP, while in 2017 the value of Green GRDP was 99.70% or 0.30% smaller than conventional / brown GRDP. The results of the potential mapping in the Province of DKI Jakarta obtained the transportation sector, accommodation providers, communication information, financial services & insurance, company services, other services have fast growth in the economy of

the Province of DKI Jakarta and have better competitiveness compared to other regions in Indonesia. Whereas the manufacturing, electricity & gas, real estate and wholesale & retail trade sectors are sectors that can only be enhanced in the scope of DKI Jakarta Province. While the Agriculture, Mining, Water Supply, Waste & Waste Management, Government Administration and Education Services sectors have no role in advancing the economy of the Province of DKI Jakarta and in Indonesia. Finally, the Construction and Health & Social Services sector is a sector that has fast growth in the economy of the Province of DKI Jakarta, but has less competitiveness compared to other regions in Indonesia.

**Keywords:** Green GRDP; Green Development; Green City

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**ABES-1207-370**

**ROOM: BRI-4**

**15:35 - 15:45**

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**Estimation of GMM in Incomplete Data Panel (Case Study: The Role of Infrastructure for Poverty Reduction in Indonesia)**

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**Abstract** - In econometrics research there are often missing observations in the data collected. One of them is in research on poverty, poverty is a major problem in various developing countries, including Indonesia. One effort to reduce poverty is to build infrastructure. This study analyzes the role of infrastructure in poverty in Indonesia in the period 2011-2017. Researchers in this field prefer to discard data that is not available in certain years due to the availability of data where there are several new provinces in Indonesia and this will undermine the validity of research conclusions with reduce sample size and produce bias. Research that uses incomplete panel data generally uses imputation for data that is not available. In this study the Generalized Method of Moments (GMM) method is used with missing data standard rules that do not need to impute because the imputation approach is not consistent if the imputation model is mis specified. By using an Inverse Propensity Score Weighting (IPW) estimator for data (missing at random) a regression coefficient is obtained, where the estimator is doubly robust. The findings show that the infrastructure of electricity, health, sanitation, and building of senior high school has a significant negative impact on the percentage of the underprivileged people. Meanwhile, the building of elementary school has a significant positive impact on the percentage of the underprivileged people.

**Keywords:** Incomplete Data; GMM; IPW; Infrastructure; Poverty.

ADS-1022-001

Room: BRI-5

13:30 - 13:40

**Individual Variation in Semen Characteristics of Murrah Buffalo Bulls**<sup>1</sup>Nurul Isnaini\*, <sup>2</sup>Tri Harsi, <sup>3</sup>Sandy Eka Kurnianto<sup>1,3</sup>Department of Animal Production, Faculty of Animal Science, University of Brawijaya, Malang-65145, Indonesia<sup>2</sup>Lembang Artificial Insemination Center, Bandung-40391, Indonesia<sup>1</sup>nurulisna@ub.ac.id\*

**Abstract** - The success of implementing artificial insemination largely depends on the semen characteristics of bulls. The purpose of the study was to evaluate the variation in semen characteristics between two individual Murrah buffalo bulls in Lembang Artificial Insemination Center. A total of 290 semen samples were involved in this study. The results showed that most of the semen of Murrah buffalo bulls had a milky white color with moderate consistency. The Bull B1 tended to have preferable semen characteristics as indicated by the higher proportion of creamy color and moderate consistency than the Bull B2. The ejaculatory volume is varied ( $P < 0.01$ ) between Bull B1 and Bull B2. However, semen pH and sperm concentration were similar ( $P > 0.05$ ) between those two bulls. The individual bull had a highly significant effect ( $P < 0.01$ ) on sperm motility of fresh semen and significant effect ( $P < 0.05$ ) on before freezing semen. Whereas, sperm motility of post-thawing semen and recovery rate value were not significantly influenced ( $P > 0.05$ ). Moreover, it was found that the frozen semen production differed ( $P < 0.01$ ) between two individual bulls, with bull B1 had higher production than the bull B2. This study clearly demonstrates that the frozen semen production of Murrah buffalo bull is highly dependent on the individual animal. However, the variation in frozen semen production between two bulls studied here is still acceptable to be used for artificial insemination.

**Keywords:** Genetic Potential; Individual Variation; Murrah Buffalo; Reproductive Performance; Semen Quality.

AST-1120-065

Room: BRI-5

13:40 - 13:50

**The Impact of Invasive Aliens Species of Plant in Dryland Crop Production**<sup>1</sup>Suyud Warno Utomo\*, <sup>2</sup>Priyaji Agung Pambudi<sup>1,2</sup>School of Environmental Science, University of Indonesia<sup>2</sup>Department of Environmental Health, Faculty of Public Health, University of Indonesia<sup>1</sup>suyudwarno@gmail.com\*; <sup>2</sup>priyajiagungpambudi@gmail.com

**Abstract** - The existence of invasive alien species (IAS) in an ecosystem has become a global issue that continues to be discussed. Invasive plants led to the dominance of the crop in the fulfillment of competition for nutrients, water, light, and pollinated by pollinators. In Indonesia there are 27 IAS that is very dangerous and threatens the stability of the ecosystem. The introduction of IAS in Indonesia generally lowers production reached 20%, 1 individual IAS in the area of 0.1 m<sup>2</sup> can reduce 57% of agricultural production. This aims to determine the introduction of IAS and its impact on agricultural. The method used is the analysis of vegetation, a literature review of national and international journals and complemented by interviews was conducted in June-October 2018 in Pacitan, East Java. Based on the research known biodiversity in the study site was (2.99) and Evenness medium ( $e' = 0.41$ ) with the third-highest family Compositae (IVIs = 53.1), Poaceae (IVIs = 41.16), and Amaranthaceae (IVIs = 23.97). Cyperaceae and Compositae is the most dominant and is found throughout the agricultural types in the sites. Compositae is dominating (IVIs = 53.1). *Alternanthera sessilis* (IVIs = 23.97), *Cyanthillium cinereum* (IVIs = 1.45), and *Echinochloa colona* (IVIs = 12.33). Based on the concept of IAS disturbance caused interference in terms of the type, intensity, spatial reach, frequency, and other factors are interspecific. According to the concept of disturbance the solution is control the growth and spread of IAS to save the ecosystem and agriculture sustainability.

**Keywords:** crop production; ecosystem; invasive alien species; organism interaction

ADS-1121-066

Room: BRI-5

13:50 - 14:00

**Factor Analysis Adoption Artificial Insemination Sexing Method Technology in Beef Cattle for Supporting Smallholders Farmer in Tuban Regency East Java Province Indonesia**<sup>1</sup>Satria, A.T\*, <sup>2</sup>Nurul Huda, A, <sup>3</sup>Susilawati, T<sup>1,2,3</sup> Faculty of Animal Science, University of Brawijaya, Jl. Veteran, Malang 65145, Indonesia.<sup>1</sup>awangtrisatria@ub.ac.id\*

**Abstract** - This study aims to analyze the factors that influence the adoption of Artificial Insemination (AI) sexing method technology in beef cattle. AI sexing method is the technology where bull's sperm containing chromosome X and Y separated with some treatment like sedimentation, albumin column, centrifuges gradient density, electrophoresis, H-Y antigen, flow cytometry and filtration with Sephadex column. The result of the sperm sexing method was frozen and it's using for Artificial Insemination in female beef cattle. The study was conducted in the Tuban Regency, East Java Province. Tuban Regency is the third-largest beef cattle population in east java province. The research uses data consisting of primary data and secondary data. The quantitative method with survey design is used for this research. 92 smallholders' farmers were being to collect Data with interviews, observations and

documentation of parameter. The parameters measured for the factors that affect AI are knowledge (X1), motivation (X2), cost of AI (X3) and feeding knowledge (X4). Data were analyzed using perception scores for each factor and multiple linear regression analysis was used to determine the effect of each factor on the adoption AI sexing method technology using SPSS 23 statistical tools. The results of the regression analysis showed that the motivation factors (X2) and feeding knowledge (X4) effect on IB adoption of sexing semen with a regression equation  $Y=12,998 +0,197 X1+ 0,511 X2 - 0,157 X3 + 0,307 X4$ . The motivation and feeding knowledge are significantly impact for adoption of AI with semen sexing method. Conclusion of research data shows that with an increase in the factors that influence it will support an increase in the adoption AI sexing method technology. This information needs to be managed appropriately and farmers get an economical increase by using AI sexing method technology.

**Keywords:** Artificial insemination, sexing method, Beef cattle, adoption technology

**AST-1114-025**

**Room: BRI-5**

**14:00 - 14:10**

### Effect of Nano-Silica Application on Rice (*Oryza sativa*) Using SEM-EDX and XRF Analysis

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**Abstract** - Just in recent years, agriculture researchers started to show an increased interest in the usage of Silicon (Si) in plants to increase growth and productivity. Yet, considerably small amounts of literature available to support as strong evidence regarding Si as a beneficial nutrient application in rice field experiments. Therefore, his study aims to experimentally investigate the importance of nano-silica in rice plants' stronger appearance, especially based on their microanalysis appearance and microelement contents. The author methodologically performed an experimental investigation on the effect of different hydrophilic fumed nano-silica applications in rice plants with the frequency of 1x, 2x, 3x, and 4x application respectively. The results of the SEM-EDX analysis of the rice husk show physical differences in the metal-like surface appearance of the rice husk surface layer, which shows increased intensity on more frequent applications. The XRF analysis shows the availability of Si, P, K, Ca, Mn, Fe, Ni, Cu, Zn, Eu, and Re from all treatments, and shows peak differences. The single most striking result to emerge from the data is that the existence of Ytterbium (Yb), known as a Rare Earth Elements (REE) at higher Nano-silica application frequency. This result supports previous research that had shown the relation between Si and Yb, which both found to be interconnected and favorable for plants' growth and productivity. As conclusion, it is recommended to use 3x nano-Si applications to achieved stronger plants' structure and tolerance against stress.

**Keywords:** Nano-silica; REE; rice husk; SEM-EDX analysis; XRF analysis.

**FM-1120-062**

**Room: BRI-5**

**14:10 - 14:20**

### Screening, Isolation And Identification Of Potential Bacteria Producing Cold-Adapted Lipase From Fish Cold Storage

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**Abstract** - Lipases constitute as the third most important group of enzymes after carbohydrases and proteases, and are widely used in various industries. Study about this enzyme for industrial process is always interesting. One of the trend studies is to find and characterize lipase that show high activity at low temperatures, or referred as Cold-Adapted Lipases (CLPs). This unique feature is the main advantage of CLPs in the industry because it requires a low energy source that is correlated with lower costs and energy. Reactions occur in cold temperatures may result in better product quality. The purpose of this research is to perform screening and isolation of the lipase-producing bacteria that shown high activity at low temperatures using Rhodamine B and olive oil as lipase substrat. This research obtained four bacterial isolates produce lipase on screening media. Bacterial isolate B5 showed the highest crude extract activity of 3.21 U / mL, followed by isolates B4 (3.09 U / mL), H5 (2.56 U / mL and B9 (1.02 U / mL). Lipase enzyme B5 showed optimal activity in the range of 20-30°C that it can be categorized as CLPs potential. Identification of B5 isolates based on 16s rRNA analysis showed 99.62% similarity with *Bacillus amyloliquefaciens* H strain (CP041693.1)

**Keywords:** Fish cold storage; cold-adapted lipase; *Bacillus amyloliquefaciens*

**FM-1127-116**

**Room: BRI-5**

**14:20 - 14:30**

### Digital Shoreline Analysis System (DSAS) to support Indonesia's Maritime Security in Monitoring and Anticipating Shoreline Changes from Abrasion

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**Abstract** - Indonesia's coastal area has high level of human activity in their coastal areas. Monitoring of shoreline changes are indispensable for the study of coastal dynamics studies, environmental protection, and development of the coastal environment. The threat of coastal abrasion due to coastal reclamation activities, coastal areas development and sea level rise need to be anticipated because it can threaten national and even regional borders, especially for small and outermost islands in Indonesia that could be threatened by disappearing of islands due to abrasion. Abrasion need to be anticipated due to protection for the marine environment and marine safety in maritime security sector. Shoreline changes monitoring can be done using remote sensing data. Utilization of remote sensing to monitor shoreline changes is particularly needed in areas with long shoreline or an area with many islands such as Indonesia. Digital Shoreline Analysis System (DSAS) is one of the remote sensing technologies that can be used to detect and calculate shoreline changes automatically. The purpose of this research is to know the use and benefit of DSAS as a recommendation for monitoring shoreline changes and anticipating shoreline changes from abrasion. DSAS calculation method used for calculating shoreline changes are Net Shoreline Movement (NSM) and End Point Rate (EPR). Linear Regression Rate (LRR) calculation method in DSAS can be used to predict future shoreline changes. By predicting shoreline changes that will occur in the future can be used as a reference for determining the actions that must be taken to overcome the existing threats.

**Keywords:** GIS; DSAS; Maritime Security; Shoreline; Abrasion

**TF-1128-118**

**Room: BRI-5**

**14:30 - 14:40**

### **Integrated Water Resources Management Scenario Simulation in Unda Watershed Using Water Evaluation and Planning (WEAP)**

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**Abstract** - Unda watershed is the second largest watershed in Bali Province which is planned to fulfill water demand in Karangasem and Klungkung regency which are experiencing water crisis. However, there are still various problems in the management of water resources in the Unda watershed. To optimize the use of the water potential in the Unda watershed, it is necessary an integrated water resources management so that the potential of the available water can be sustainable. Integrated water resources management planning is very complex in its implementation because it is multisectoral in nature. To facilitate water resources management planning, it can be done by making a model, one of the models that can be used is Water Evaluation and Planning (WEAP). WEAP is an integrated water resources management model that allows for analysis of various scenarios for changing the supply and demand conditions of a water source. Data needed in this study are primary data in the form of an existing state survey to take assumptions in making models and secondary data in the form of population, irrigated land area, climatology data, discharge data, and Unda GIS maps obtained from relevant agencies. Then from these data a water allocation model will be made. After inputting the data, various scenarios are simulated to know the impact of the water system. The output of this model provides information about the condition of the water balance in the simulation year.

**Keywords:** Water Balance; Integrated Water Resource Management; Water Evaluation and Planning (WEAP).

**FM-1207-348**

**Room: BRI-5**

**14:40 - 14:50**

### **The Role of Supply Chain Integration to Improve SMES Performance - A Case Study of The Fisheries Industry in Aceh.**

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**Abstract** - This article proposes an approach to determine the underlying dimensions of Supply Chain Management integration and its relation to performance among small firm with special emphasis on tuna industry in Aceh, Indonesia. The overall aim of the study is to better understand successful SCM practices which have been implemented by small industry in Aceh and the challenges faced in the process. This paper uses qualitative data, which was collected from open-ended interviews with stakeholders in a leading Aceh tuna business, together with the SCOR model, which is used to define supply chain processes and associated performance indicators. The result of this research indicates that the industry regards flexibility, efficiency and quality as the most important indicators in their supply chain operation. however, factors such as financial, SCM expertise, infrastructure and resource create a barrier in implementing an effective supply chain. Further to this, Successful SCM strategies improving SCM performance were identified based on each performance indicators. The result of this paper is expected to contribute to theoretical and practical knowledge of SCM practice, and to develop recommendation for future development of industry with small-scale capabilities.



**Keywords:** Supply chain management (SCM); Small and Medium Enterprises (SMEs)

**ADS-1126-095**

**Room: BRI-5**

**14:50 - 15:00**

**The Comparison Effect Among of Red Ginger (*Zingiber officinale* var. *rubrum*) Rhizome, Tetracycline and Stimuno Forte® on the Total Fecal Bacterial Count of Broiler Chicken on Starter Stage**

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**Abstract** - This study was aimed to determine the effect of red ginger (*Zingiber officinale* var. *rubrum*) powder as feed additive on the total fecal bacterial count of broiler chickens (starter phase) and comparing it to the effect of tetracycline (antibiotic growth promoter) and Stimuno Forte® (commercial immunostimulant product). A total of 100-day-old broiler chickens were divided into four experimental feed/dietary treatments groups (after 7 days of acclimatization). Group I (control) was given standard broiler feed for the whole experiment period; group II was given standard broiler feed supplemented with 2% red ginger rhizome powder; group III was given standard broiler feed supplemented with tetracycline (15 mg/Kg body weight orally); group IV was given standard broiler feed supplemented with Stimuno Forte® (13.5 mg/ Kg body weight orally). The supplementation was given for 7 days (day-8 until day-14). The result showed that the supplementation of red ginger powder to the broiler feed significantly increases ( $p < 0.05$ ) the number of total fecal bacterial count score compared to the control group at day-14 (H+14) while no significant difference of total bacterial count score ( $p > 0.05$ ) was observed among Tetracycline and Stimuno Forte® supplemented group compared to the control group. Because the chickens were not intentionally infected with pathogenic bacteria, the result suggest that red ginger powder might have significantly increase the total fecal bacterial count by stimulating the growth of beneficial bacteria in the digestive tract of broiler chicken at the end of starter stage.

**Keywords:** Red ginger; feed additive; total fecal bacterial count; broiler chickens

**ADS-1207-339**

**Room: BRI-5**

**15:05 - 15:15**

**Determination of Superior Products in Mulia Farm Goat's Milk Processing Industry**

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This study aims to determine the superior products in the Mulia Farm goat's milk processing industry in Pesawaran Regency, Lampung. The data in this study used primary data and secondary data. Primary data collected through field observations, questionnaires, and interviews. Secondary data obtained through company documents, literature studies from journals, books, and the internet. Data were analyzed using the Exponential Comparison Method to get the priority of products that would become superior products. In the MPE required the right criteria and product alternatives to get superior products that can be profitable and sustainably be able to become superior products of the Mulia Farm goat's milk processing industry. Determination of the criteria is done from the results of literature studies and discussions with experts. Experts who play a role in determining superior products include business people in goat's milk processing industry, academics, and the government. The criteria used in determining superior products are; availability of raw materials, market potential, product added value, business capital, capability and skills of production technology and employment. While alternative products in this study are; pasteurized milk, fermented milk (yogurt, kefir), milk powder and soap / cosmetic products. The results of the MPE analysis show that the superior product of the Mulia Farm goat's milk processing industry is pasteurized milk with MPE value is 577 306 312.

**Keywords:** Goat's milk processing industry, superior products, Exponential Comparison Method, Pesawaran Regency

**AST-1125-086**

**Room: BRI-5**

**15:15 - 15:25**

**Morphological and Pasting Properties of Talas Beneng (*Xanthosoma Undipes* K. Koch) Flour**

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**Abstract** - Talas beneng (*Xanthosoma Undipes* K. Koch) is one of indigenous resource from Banten. It is commonly found in several areas of Banten, both growing wild and already cultivated. The existence of talas beneng is most found in Pandeglang district, Banten. Some groups of farmer use it to be processed into several food products, both intermediat products and processed products that are already to be eaten like chips. One of group of farmers is called Gapoktan Juhut Mandiri in Pandeglang, they use talas beneng to be process into the flour product. TO improve and optimize the utilization of talas beneng, the research is needed to be done related to the

characteristics of talas beneng flour, so that it will be useful to be applied to several types of food products. The aim of this study is to determine the morphological properties using SEM and pasting properties using RVA of talas beneng flour. This research covers the production of flour, and analysis of morphological and pasting properties of flour. The result showed that starch granule of talas beneng flour is polygonal. The RVA test result showed that peak viscosity is 2291 cP, minimum viscosity is 1186 cP, breakdown is 1105 cP, final viscosity is 1857 cP, setback is 671 cP, pasting temperature is 80.05°C, and peak time is 7,8 minute. Amylose content of talas beneng flour is 18,19%. From the results, we know that talas beneng flour has polygonal in shape, and it is not resistant to heat and cooling treatment.

**Keywords:** talas beneng flour; morphological; pasting; amylose; Banten

**AST-1127-114**

**Room: BRI-5**

**15:25 – 15:35**

**Influence of time and stirring on cow and goat milk yogurt powder compounds.**

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**Abstract** - Yogurt is one of the most common fermented dairy products widely consumed worldwide. Mostly studies are about in how to longer the yogurt shelf life. this study purposed to drying cow and goat milk yogurt by freeze dryer to provide alternative method don't have effect on yogurt compounds and lactic acid bacteria cell, and to determine the effect of batches and time on yogurt powder compounds. The International Official Analytical Chemistry Association (AOAC) and the Indonesian National Standard (SNI) methods were used to analyze the chemical composition of yogurt powder. Yogurt drying by freeze dryer at -73°C for 16, 19, and 22hours on 4, 5, and 3 batches with stirring respectively. The results obtained from this study that the best drying of cow and goat milk yogurt treated by freeze dryer was 19h. Moreover, the drying by batches with stirring have significant effect on amount of lactic acid bacteria cell and decreased the drying time and improving product quality.

**Keywords:** Cow and Goat milk, Yogurt powder, Time, batches, Nutritional value

**FM-1129-135**

**Room: BRI-5**

**15:35 - 15:45**

**Responsible Variety of Fish Resources Using Handline in Sangiran Reservoir Ngawi District East Java**

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**Abstract** - The objective of this study was to determine the fish species in the Sangiran Reservoir. This research was conducted using survey methods. Fishes samples and water quality are taken from fisherman's fishing spot. The fish are caught with extended fishing rods (fishing rods between numbers 4 and 5). During the study, all four species were introduced around 2001, namely Red Devil (*Amphilophus labiatus*), Tawes (*Barbonymus gonionotus*), Lohan (*Cichlasoma trimaculatum*) and Tilapia (*Oreochromis niloticus*). Red devil is caught 106 individuals for about (35%), Tawes (28%), Lohan (11%), Tilapia (26%). More fish are caught in the middle of the reservoir, such as Red Devil and Lohan. Tawes occur at the Wekas River, the Wekas River branches off with the irrigation branch and the Pang River. Tilapia is close to the Wekas River Pier and the bay, which is said to have plenty of food in the area. All observed water quality parameters are good for the life of the fish. The Morosita index (distribution pattern) indicates that caught fish have a spread randomized pattern to the Morosita index 0.211-0.625. To sustain the conservation of fish in the Sangiran Reservoir, management efforts are needed to remain sustainable. One effort that can be made is the use of selective fishing gear.

**Keywords:** Sangiran Reservoir, Fish Species, Fishing Line, Fishermen, Morosita Index.

**AST-1127-115**

**Room: BRI-6**

**13:30 - 13:40**

**Optimum condition of fresh cow milk treated by ozone**

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**Abstract** - The microbial load in fresh milk has a significant influence on shelf life and quality. Mostly peoples used pasteurization for improving quality and reduce microbial load in raw milk. The researcher purposed to treat fresh cow milk with ozone to provide alternative method don't have influence on compounds of milk. This present study aimed to comparing between pasteurization and ozonation treatment effect in fresh cow milk. Pasteurization treated by heat treatment at 72°C for 15 sec for optimization employed the response surface method with three variables temperature, time and flow rate, concuss thirty-three runs with one response (log cycle). General results obtained from this research that the optimum condition of fresh cow milk treated by ozone on temperature at 5°C, time 20 min, and flow rate is 0.5m/L. In the other hand, the pasteurization, and ozonation has not significant effect

on pH, lactose, protein, there were significant effect on increased the viscosity, fat and decreasing density and non-fat solids.

**Keywords:** Fresh Milk, Pasteurization, Ozone treatment, Response Surface Methodology

**BT-1206-274**

**Room: BRI-6**

**13:40 - 13:50**

### Exploring Antibacterial of Pulutan (*Urena lobata* Linn) Leaf Extract to Acne-causing Bacteria

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**Abstract** - Pulutan (*Urena lobata* Linn) is one type of plant that has long been used by Indonesian people as a remedy for various diseases. This is because there are components in it that have pharmacological effects. The part that is often used as medicine is the leaf. It has been shown that the leaf extract has antioxidant, antibacterial, and antifungal properties. There has been no research related to the potential for antibacterial against bacteria that cause acne. Therefore, this study aims to explore the antibacterial activity against bacteria that cause acne. Extraction was carried out using the Ultrasound-Assisted Extraction (UAE) method using 3 concentrations of ethanol solvents then carried out the analysis of yields, testing the antibacterial activity against *Propionibacterium acne*, *Staphylococcus aureus*, and *Staphylococcus epidermidis* using disk diffusion method, and identification of active compounds using GC-MS. One-way ANOVA statistical analysis shows that ethanol extract has a significant effect on yield. Ethanol extract does not provide an antibacterial effect on *P. acne*. extracts provide inhibitory power against *S. aureus* and *S. epidermidis* at 250 mg/mL. Ethanol extract 90% gives the highest antibacterial effect compared to other extracts but is still lower than the control (clindamycin). The types of active compounds identified by GC-MS also differ in which 30% ethanol extract is dominated by 56.93% *scyllo inositol*, 60% ethanol extract has 29.76% *4H-Pyran-4-one, 2,3-dihydro-3,5-dihydroxy-6-methyl-*, and 35.1% *Stigmasta-3,5-diene* in 90% ethanol extract.

**Keywords:** antibacterial; *Urena lobata* Linn; GC-MS; UAE.

**BT-1207-382**

**Room: BRI-6**

**13:50 - 14:00**

### Arrhythmia Prototype Monitoring Device: A Pivotal Clinical Trial

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**Abstract** - Lethal arrhythmia such as Ventricular Tachycardia (VT) and Ventricular Fibrillation (VF) has contributed to sudden cardiac death cases. Atrial Fibrillation (AF) is type of arrhythmia that often found in hypertension and heart failure patients, and also the risk factor of stroke. This research was sought to developing ECG recorder 3 leads to data acquisition on prototype arrhythmia monitoring. The pivotal clinical trial was involved a total 103 people (health and stable arrhythmia patients). This research used a diagnostic test by comparing the electrocardiography (ECG) from prototype with standard holter ECG for diagnose arrhythmia. The Prototype monitoring Algorithm (PMA) that we developed has three hardware components; smartphones, server for arrhythmia detection and patchable ECG recorder. All three components are connected with internet of things (IoT) technology. The architecture of Arrhythmia software monitoring included ECG signals preprocessing, beats detection, features extraction for detecting VT/VF, and classification for detecting VT/VF. Features extraction such as heart rate variability (HRV) and T wave alternans. We compared the ECG of arrhythmia prototype monitoring device with standard holter monitoring. Result: We enrolled 103 patients. There was no significant difference of heart rate between arrhythmia prototype monitoring device and standard holter (87.26 ± 11.2 vs 86.07±9.15, P=0.43). There was significant different of maximum and minimum heart rate between arrhythmia prototype monitoring device and standard holter monitoring (121.3±31.7 vs 131.0±10.8, p= 0.000, and 65.1±13.5 vs 73.07±10.02, p=0.000). Arrhythmia prototype monitoring device has low sensitivity (40% CI 95% 38%-42%) and low specificity (37.8% CI 95% 35%-42%) for detecting arrhythmia. According to the results of our study, the interpretations of arrhythmia prototype monitoring device has low sensitivity and specificity for detecting arrhythmia. However, the device should be relied upon when assessing averaged of heart rate.

**Keywords:** Arrhythmia, prototype monitoring device, holter

**ADS-1212-409**

**ROOM: BRI-6**

**14:00 - 14:10**

### Effect of Liquid Smoke as Antibiotic Replacer on Ileal Characteristic and Intestinal Microflora in Broiler Chicken

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**Abstract** - The purpose of this research was to evaluate the effect of liquid smoke from coconut shell on the ileal characteristics and microflora population in broiler chicken. The method was in vivo experiment by using Completely Randomized Design. One-hundred-and-forty-day old chicken of strain Cobb allocated into 4 treatments and 5 replications. The treatments consisted of T0= basal feed (control). T1=basal feed + 0.5% liquid smoke, T2=basal feed + 1% liquid smoke, and T3=basal feed + 1.5% liquid smoke. The measured variable was: ileal length and weight, pH and viscosity of ileal content, population of microflora consisted of *Lactobacillus*, *Escherichia coli*, dan *Salmonella* sp. Data were analyzed with ANOVA and if significant result was obtained then continued with Duncan's multiple range test. The results showed that there were no significant different ( $P>0.05$ ) effect of treatment on intestinal characteristic values, but it significantly affected ( $P<0.01$ ) all microflora population. Conclusion of this research was addition of smoke liquid up to 1.5% does not cause a negative effect on intestinal characteristics, but improve non-pathogenic microflora population in broiler chicken. It might suggest that liquid smoke could be consider to replace the use of antibiotic in broiler feed.

**Keywords:** Liquid smoke, ileal villi, microflora, and broiler.

AST-1130-158

ROOM: BRI-6

14:10 - 14:20

### Replanting Model of Palm Oil with Paludiculture System on Peatland in South Kalimantan (Soil Physical Characteristics and Optimize Analysis)

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**Abstract** - Efforts to accelerate the development of smallholder plantations in the plantation revitalization program are carried out through expansion, rejuvenation and rehabilitation of estate crops. However, the problem faced by farmers today is the fear of farmers losing their livelihoods if their oil palms are rejuvenated. On the other hand, peat ecosystem is an ecosystem that is very important role in maintaining environmental sustainability, especially related to the issue of global warming. One way that can be taken to prevent widespread damage on *peat lands* and to prevent future loss of community livelihoods by applying *paludiculture* planted on *peat lands*. The *paludiculture* model is a multiple cropping system in *peatlands* that can be adopted in oil palm areas. The results showed that the status of soil fertility in the area of oil palm rejuvenation has a relatively better soil fertility status when compared to mineral material, which has a range of status from low to moderate. Whereas mineral soil material has a low soil fertility status. This is concluded, although the cation exchange capacity of this soil sample is classified as high, but the cause of the low soil is the P-total, K-total and C-organic content is classified as very low to low. The results of the analysis of farmer optimization show that the optimal cropping pattern of vegetable farmers is commodity long beans + cucumbers. With farm income at optimal conditions is Rp 4,289,944 per year or Rp 18,619,548 per hectare per year.

**Keywords:** Palm oil replanting model; Paludiculture; Optimize analysis.

AST-1130-231

ROOM: BRI-6

14:20 - 14:30

### Utilization of Antagonistic Bacteria Originated from UB Forest Coffee Litter as Biological Control of Basal Rot Disease and Plant Growth Regulators on Shallot

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**Abstract** - Litter of abundant coffee plants in the forest has not been widely used. UB Forest located on Mount Arjuna is one of the forests that has coffee litter. Exploration of the potential of antagonistic bacteria aims to find beneficial bacteria as biological control agents in agricultural crops, one of which is shallot. Shallot productivity in Indonesia in 2014 - 2018 is still fluctuating, caused by infection *Fusarium oxysporum* f.sp. *cepae* (FOC) is a basal rot disease. This disease can damage 50% until crop failure. The study was conducted by examining shallots infected with the basal rot disease. And evaluate growth from shallot plants. This research aimed to find out about potential of bacteria in coffee plant litters as biological control of basal rot disease and plant growth regulators on shallot. The test stage consisted of bacterial propagation, seed treatment, planting of shallots, pathogen inoculation, observation and analysis. The results of this study are coffee litter bacteria tested were *Bacillus mycoides*, *Clostridium* sp., *Pseudomonas* sp. and *Enterobacter* sp. Two of the best bacteria were obtained as biological control and plant growth regulators, identify UB2 (*Clostridium* sp.) and UB5 (*Pseudomonas* sp.) *Clostridium* sp. has the best potential as a biological control with an effectiveness of up to 52.42% and increase plant height up to 30.96% and *Pseudomonas* sp can increase the number of leaves 66.82% and wet weight up to 52.65%.

**Keywords:** Basal rot disease; biological control; litter bacteria; PGPR; shallot.

AST-1207-343

ROOM: BRI-6

14:30 - 14:40

### Sustainability Analysis of Palm Oil as Implications for The Decrease of The Price of Coconut Palm Oil Sei Kepayang Region

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The price of oil palm is a challenge posed by oil palm farmers at the moment, a decrease in the price of oil palm can be calculated by blocking from abroad the Indonesian CPO, opening new land and increasing the current budget of the price of oil palm to be very cheap when compared to the previous 2 years. This cheap price has an impact on reducing the allocation for plant maintenance which will also have a direct impact on quality and will have another impact. For this reason, research on the impacts of oil palm on sustainability is needed and factors that can be proposed for improvement. This research uses SSM, AHP and ISM methods to get more complete results. SSM research results indicate the need for improvements to infrastructure to transport oil palm yields, a guarantee of the selling price of FFB and improvement in the quality of human resources of oil palm farmers is very necessary. ISM results show government, farmer groups, farmer groups, and cooperatives can join together to improve the quality of oil palm products, join together to send crops directly to PKS to get better prices with the support of cooperatives and local governments. Further research from this research is the formation of models that are produced according to ISM results.

**Keywords:** Palm Oil, Selling Price, SSM, AHP, ISM

AST-1207-345

ROOM: BRI-6

14:40 - 14:50

### Financial Technology for Support Sustainable Agriculture

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**Abstract** - Financial markets play an important role in overcoming the agricultural crisis. The fact is there are many farming practices that stop due to capital problems. Therefore, it is important to examine innovations in agricultural capital services such as Financial Technology to support sustainable agriculture. This research is an in-depth case study of Financial Technology services in the agricultural sector conducted by iGrow startups. Information technology support places iGrow as a sponsor bridge that has funds, landowners, and operators responsible for production activities and ensures market certainty. So, farmers who do not have land and do not have fixed capital can do agricultural activities. The existence of an indent sale and purchase system makes it easy for farmers to access capital, sales certainty support, profitable agribusiness management for the parties involved, making agricultural practices supported by Financial Technology continue to expand. The role of information technology, collaboration with other parties, indent capital, standby buyers, will support sustainable agricultural practices in Indonesia.

**Keywords:** Financial Technology, Sustainability, Agriculture, iGrow, Agriculture Finance

AST-1207-388

ROOM: BRI-6

14:50 - 15:00

### Multi Effect Evaporator Design Calculation for Brown Sugar Production using Computational Fluid Dynamic

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The industrial-scale of brown sugar process starts from grinding, filtering, first heating, sulfidation, decantation, and evaporation. One of the most important processes in brown sugar production is the evaporation process. Evaporation method using Multiple Effects Evaporator (MEE) has been widely used and has an important role in the food industry for the process of evaporation of water in agricultural products. Therefore, the design of MEE has several parameters that need to be considered such as pressure, temperature, the amount of water evaporated, the amount of steam that enters and so on. This study aims to discuss the semi-iterative design of MEE for industrial-scale and simulation using Computational Fluid Dynamics (CFD). The MEE design has three effects and use a feed forward system. The calculation results not only compared with the transportation process and operation unit calculations but also compared with previous studies for processing sugar cane juice into brown for industrial-scale. By using the CFD software, an accurate design process can be performed to determine the effect of parameters in order to optimize of MEE performance.

**Keywords:** Multiple effects evaporator; design; brown sugar; computational fluid dynamics.

BT-1114-023

ROOM: BRI-6

15:05 - 15:15

**Measuring Potential from Muscle Activity of Lower Arm**<sup>1</sup>Sri Herwiningsih\*, <sup>2</sup>Setyawan P. Sakti, <sup>3</sup>Firdy Yuana, <sup>4</sup>Triswantoro Putro, <sup>5</sup>Nabila Ratna Ayuningsih<sup>1,2,3,4,5</sup> Physics Department, Faculty of Sciences, Brawijaya University, Malang, Indonesia<sup>1</sup>herwin@ub.ac.id\*

**Abstract** - Muscle is a type body tissue which is excitable. It poses an electrical activity during contraction and relaxation which could be measured using an electrical device called as electroneuromyograph. This device has played an important role in medicine to detect any abnormalities in peripheral nerves and muscles such as monitoring for patients after struck attack, evaluating fatigues in muscles and evaluating muscle strains. Although the electroneuromyograph has a wide application, its availability is limited to certain hospitals. This cause a limited access for people with muscle problem due to expensive cost for following the test. This paper presents a work in measuring biopotential produced from the muscle activity of lower arm using a simple electroneuromyograph module. The measurement of biopotential was performed form lower arm muscle by using three surface electrodes. One electrode was placed in the end of the muscle fiber, one electrode was placed in the middle part of the muscle and one electrode was placed in the bony part of the arm as a reference. The electrodes were connected to the electroneuromyography module by using an EMG cables. The record the activity of the muscle, the electroneuromyography module was powered using 18 V batteries and was connected to the oscilloscope to display the output signal. The recorded biopotential was varied from 30 mV to 80 mV during muscle contraction. This shows that the simple electromyograph module could be used to detect the electrical activity of the body muscle.

**Keywords:** muscle electrical activity; electroneuromyograph; biopotential; muscle contraction.

FM-1201-193

ROOM: BRI-6

15:15 - 15:25

**Diversity and Coverage of Coral Reefs in the Olele Regional Marine Conservation Area, Gorontalo**<sup>1</sup>Asniati Ningsi\*, <sup>2</sup>Ida Astuti, <sup>3</sup>Ramdan Monoarfa<sup>1,2</sup> Prodi Perikanan dan Kelautan, Fakultas Pertanian, Universitas Gorontalo, Indonesia<sup>1</sup>aningsihazis@gmail.com\*

**Abstract** - Olele Marine Park is one of the Regional Marine Conservation Areas (KKLD) which is designated as a conservation area based on the Decree of the Regent of Bone Bolango No. 165 of 2006. As one of the Marine Parks, the Olele KKLD provides a coral reef ecosystem which is an important asset in attracting local and foreign tourists to visit. Seeing tourism activities in the area referred to by monitoring and observing the condition of coral reefs is a big concern to do for the sake of ecosystem sustainability in the future. This study aims to study the extent and extent of coral cover in the Olele Regional Marine Protected Area. This research was conducted in April to May 2019 in Olele Village, Bone Bolango District. The study used the LIT method at three stations at depths of 2 and 4 meters. In LIT observations, data recording consists of coral reef species, percentage of selection based on lifeform. The results showed station I depth 2 and 4 m wide coral cover 12.8% and 22.9% classified as bad, station II coral cover area 24.1% and 37.5% classified as poor on the surface of 2 m and moderate at height 4 m, while at station III the area of coral cover is 86.5% at a depth of 2 m and 95.4% at a depth of 4 m with coral conditions that are still very good. For the index of coral reef diversity in the Olele KKLD in the medium category.

**Keywords:** Cover; Coral reefs; LIT; KKLD; Olele

AST-1127-105

ROOM: BRI-6

15:25 - 15:35

**Resistance of Ten Local Probolinggo Tobacco Accessions to Armyworm (*Spodoptera litura* F.) In Field**<sup>1</sup>Heri Prabowo\*, <sup>2</sup>Sri Adikadarsih, <sup>3</sup>Janis Damaiyani<sup>1,2</sup> Indonesian Sweetener and Fiber Crops Research Institute, Jl. Raya Karangploso Kotak Pos199, Malang 65152, Tel./Fax. +62-271-663375,<sup>2</sup>Plant Conservation Center of Botanical Garden of Purwodadi, Indonesian Institute of Sciences

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**Abstract** - Tobacco (*Nicotiana tabacum* L.) is an important cash crop of Indonesia. This commodity is great economic importance and a source of revenue, employment, and foreign exchange. Tobacco production in Indonesia faces several obstacles, one of which is damage caused by armyworm (*Spodoptera litura*) infestation. The armyworm causes destructive effects on plant so that it is necessary to obtain information regarding the types of tobacco, especially new tobacco varieties which are resistant to armyworm. Therefore, the production of tobacco could be improved. This research aimed to identify the resistance of local Probolinggo tobacco to armyworm so that they can be utilized to develop armyworm resistant tobacco and to improve productivity. A study to test the field resistance of local Probolinggo Tobacco was conducted in Desa Besuk and Krejengan, Probolinggo. Eight accessions with two controlling accessions (Paiton 1 and 2) were used. The results showed that the average percentage of armyworm infestation on Vis-à-vis tobacco accession was approximately 9.0 up to 17.33 %. The most attracting accessions are DB Srongsong Sadhana, DB Srongsong Gajah, and Paiton 1 with the

percentage of infestation of 19.50; 14.34 and 14.17 %, respectively. The lowest armyworm infestation was found in two tobacco accessions i.e. Samporis and Jimamwut. The level of resistance based on Chiang and Talekar showed that Samporis and Jimamwut were moderately resistant to armyworm, but accession DB Serongsong Sadhana dan Paiton 1 were susceptible. Samporis and Jimamwut can be developed as candidates to face army worm infestation.

**Keywords:** Armyworm; tobacco; resistance

**AST-1207-341**

**ROOM: BRI-6**

**15:35 - 15:45**

**Comparison Of "Rorak" And Non- "Rorak" Technology in Cocoa Farming: Study of Farming and Factors That Influence Decision Making**

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**Abstract** - Bakung District is one of the districts in the Blitar Regency. This district has the potential to increase the yield of cocoa production because of the vast planting area it has. This increase in production output needs to balance with the technology used in cocoa cultivation. The technology used is Rorak (sediment pit) technology. Rorak (sediment pit) technology is a trench that is useful for holding water and cocoa leaves during the rainy season. Mixing water and cocoa leaves will become organic fertilizer. Initially, farmers tried cocoa to apply this technology, but later on some farmers no longer applied it. Based on this description, the researcher wants to examine the differences in productivity, income, and cost-efficiency of cocoa farming using Rorak and not using Rorak. Besides, the researcher also wants to analyze the factors that influence cocoa farmers' decision making in applying Rorak technology. The sampling method in this study was 44 Total Sampling farmers who were members of the Ismoyo Maju and Mutiara Tania Cocoa Group. The farmer's group located in the sub-district of Bakung, Blitar Regency. The research method used is descriptive and analytic. The analysis used is Farming analysis which is then performed a different test analysis using the t-test. To determinants factors that influence decision making using Rorak technology, logistic regression model analysis is used. It assumed that the variables which influence the decision making are among others Planted Area, Information Sources and Technology Suitability, Age, and Participation in Training. The results showed that: 1) there were differences in productivity, income, cost efficiency between cocoa farming using Rorak, and nonRorak technology. Obtaining productivity, revenue, and R/C ratio for cultivation using Rorak technology in succession is 798.12 kg/ha/year, 30,885,814.01 Rp/ha/year, and the R/C ratio of 12.85. The acquisition of productivity, income, and R/C ratio for nonRorak technology farming businesses was 698.22 kg/ha/year, 16,105,308.16 Rp/ha/year, and 7.55. Significant factors affecting the decision making of cocoa farmers to apply Rorak technology are Planting Area, Information Sources and Technology Suitability.

**Keywords:** Rorak, Productivity; Revenue; Cost Efficiency; Decision Making.

**ADS-1107-009**

**ROOM: BRI-7**

**13:30 - 13:40**

**Impact of Alternative Feed Technology Utilization, Between the Increase in Feed Cost and Revenue on Rural Cattle Farming**

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**Abstract** - The research aims to study the effect of alternative feed technology utilization include costs of alternative feed technology and added labor costs to the value added or revenue added of cattle farming. The aims for search the effort the development of beef cattle feed technology utilization in increasing household income, improving production yields and can reduce the cost factors needed in cattle farming. The study was conducted in the Minahasa Regency of North Sulawesi Province, Indonesia. The research method that has been used is a survey method to cattle farmers with an interview approach based on a list of questions (questionnaires). The research sample are cattle farmers household with the criteria of raising cattle at least 2 heads, a minimum of one-year experience in cattle farm, and using and processing alternative feeds such as hay, silage, ammonia of crop waste, urea molasses block (UMB) and dry straw tower. Alternative feed technology cost and alternative feed technology workflow costs in cattle farming have a significant effect on value added cattle. Allocation of farmer workforce after using feed technology is actually higher than before they use feed technology, but the parameter coefficient of alternative feed technology cost has a positive sign indicate that even though production costs increase but produce greater additional revenue cattle farming.

**Keywords:** Alternative feed, revenue, rural, cattle farming

**AST-1114-028**

**AST-I ROOM: BRI-7**

**13:40 - 13:50**

**Educational Geographical Indication Standards (IGs) for Coffee Farmers: Challenges and Solutions**

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**Abstract** - Coffee is a commodity with high economic value, export potential, and a source of income for farmers in Indonesia. Temanggung is the main producer of Robusta coffee in Central Java with an area of more than 8,000 hectares. Temanggung Coffee has the potential to become a specialty because of its distinctive flavors that are indicated by geography. To realize sustainable agriculture, increase added value, maintain quality, and increase competitiveness, coffee must be cultivated and processed according to standards. However, the results of the study indicated that Temanggung coffee farmers' adoption of these standards is still low, especially harvesting and post-harvest handling. The purpose of this paper is to describe the challenges and solutions in the education of geographical indications to coffee farmers. This article is sourced from the report of the coffee farmers community partnership program which is discussed with articles from scientific journals, books and proceedings. The results showed that the challenge is to motivate farmers to harvest and process coffee according to the standard. To meet these challenges, IGs standard education solutions were found for farmers.

**Keywords:** education; coffee; standard; geographical indication; solution

AST-1121-071

ROOM: BRI-7

13:50 - 14:00

### Strategy of Rural Area Development Based on Plantation Agribusiness

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**Abstract** - This research was conducted in Subulussalam City which aims to find out the strategies for rural area development based on the people's oil palm agribusiness. Determination of the location of this study was determined by purposive sampling and the study population were oil palm farmers with ownership status of their own land with various different strata. Determination of samples using disproportionate stratified simple random sampling, while sampling is done by purposive. Methods of data analysis using SWOT analysis (strength, weakness, opportunity and threat). Whereas to determine the priority of the strategy chosen, it is primarily using QSPM analysis (quantitative matrix priority strategy) which is a continuation of the SWOT analysis. The results showed that the position of the quadrant in the matrix was in the position of the first quadrant by using the power to take advantage of existing opportunities (called aggressive strategies). Whereas the strategy was chosen based on the QSPM matrix by intensifying the presence of agricultural extension agents to assist farmers in plantation business activities. Extension agents act as intermediaries and liaison information for farmers and from farmers to the government or policy makers. While the highest internal factor is self-owned land, which is one of the strength factors, while the highest weakness factors are low farmer education. External factors with the highest score are relatively good road infrastructure (enough to support business activities) which is an opportunity for regional development, while the threat factor with the highest score is fluctuating prices of plantation commodities in the market. The priority strategy chosen with the highest score of attraction is the opening of new swamps with the right pattern of water management technology. The research recommends that it improve and build supporting institutions in order to improve the development of rural areas based on oil palm agribusiness and also really activate extension institutions.

**Keywords:** Development strategy, agribusiness, plantation

AST-1123-078

ROOM: BRI-7

14:00 - 14:10

### The Bamboo Greenhouse for Hydroganic Crops Technology with Independent Photovoltaic Energy

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**Abstract** - The development of the city has made a lot of agricultural land turned into residential land and other urban facilities so that agricultural land becomes increasingly narrow so that it can weaken the food safety program. Another way is needed to utilize narrow land in an effort to develop agricultural products, namely by farming and maintaining fish hydroganic. Hydroganic comes from the words "Hydro" and "Organic" which are defined as organic cultivation systems by combining the hydro system and the organic system. The main source of nutrition from hydroganic is obtained from solid and liquid organic fertilizer and fish pond water that is treated as plant nutrition. The Hydroganic Technology Dissemination Program with independent electricity sources from solar power plants was carried out in Grangsil Hamlet, Jambangan Village, Dampit District, Malang Regency. Communities that are the perpetrators of the activities are the Tourism Awareness Group "Kampoeng Boenga Grangsil" and the "Syakura Arum" Farmer Women's Group. The research method uses a descriptive qualitative method, beginning with the design, the creation of an Independent Energy Hydroganic Greenhouse and the planting of vegetables and fish stocking. Retrieval of data in the form of observations and documentation of photos



and videos on activities: a) lectures and discussions; b) practice of making bamboo structures greenhouses; c) the practice of installing hydroganic plants; d) the practice of installing solar power plants; e) Hydroganic vegetable and fish growing practices. Through this program the construction of a tunnel-shaped greenhouse with bamboo structure has been carried out successfully, 2 (two) hydroganic farming facilities complete with fish ponds, 1 (one) solar power generation unit consisting of 4 solar panels each with a capacity of 100 wp with energy storage in the form of a 100 AH 12 V battery and a 1000 WH inverter in sunny conditions producing a minimum of 13.6 Amp, 18.8 V can meet the energy needs to drive the water circulation pump and greenhouse lighting lamps and the surrounding environment. Planting sla and mustard greens as well as spreading catfish and tilapia in mid-August 2019, lettuce vegetables can be harvested at the end of September 2019. The success that can be seen is that when farmers cannot grow vegetables in dry land, the vegetable plants in this hydroganic greenhouse remain fertile and healthy because water circulation occurs continuously. Tunnel-shaped greenhouse with bamboo structure using independent energy for hydropower farming is very practical, efficient and quick to build and can be planted with vegetables and spread fish throughout the year without pause is expected to be a prototype of modern agricultural and fishery facilities without relying on the rainy or dry season in the framework of the program increase national scale food safety.

**Keywords:** greenhouse, hydroganic, solar energy, food safety.

**FM-1109-010**

**ROOM: BRI-7**

**14:10 – 14:20**

**Hematology Profile and Bacterial Identification on Blood and Water Media Samples of Catfish Cultivation (*Clarias* sp.) In Penataan Fish Seed Center, Pasuruan, Jawa Timur**

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**Abstract** - Catfish cultivation (*Clarias* cp.) Is one type of business in the field of fisheries that is increasingly developing. Disease can cause a decrease in fish production, both in quantity and quality. Bacteria are a source of diseases from fish farming. One way to help diagnose a disease in fish is through a blood test. The presence of infectious and non-infectious disorders will cause changes in blood in general. This study aims to determine the hematological profile and density of bacteria in catfish (*Clarias* sp.) Cultivation at Penataan Fish Seed Center, Pasuruan, East Java. The method used in this study is descriptive method by calculating erythrocyte cells and leukocyte cells using hematology analyzer tools and handtally counter and calculating the number of bacterial colonies in blood and water culture media and observing the results of gram staining on catfish blood bacterial colonies. The results showed that the results of the calculation of erythrocyte cells and leukocyte cells using hematology analyzer tools were more accurate than using handtally counters because the results of t count were greater than t table 1% or t table 5%. As well as a description of the differential components of leukocytes, hematocrit and hemoglobin show that catfish are still in the normal range. The results of the calculation of the average bacterial colonies in the blood of catfish as much as  $38 \times 10^8$  while in the cultivation medium it has an average of  $127 \times 10^7$ . The results of gram staining of bacterial colonies in catfish are known that round colonies including gram positive and curved bacterial colonies include gram negative.

**Keywords:** Clarias sp.; Hematology; Bacterial; Pasuruan

**FM-1115-045**

**ROOM: BRI-7**

**14:20 – 14:30**

**Upwelling As An Indicator Of Illegal Fishing Surveillance In The Maritime Security Perspective (Case Study In The North Natuna Sea)**

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**Abstract** - Indonesia's geostrategic position, which is located between the Indian Ocean and the Pacific Ocean, has made Indonesia a country rich in fisheries resource potential. But the practice of illegal fishing (illegal fishing) carried out by foreign vessels in the sovereignty of Indonesia is a classic problem that has not yet been resolved until now. Illegal fishing is one of the national security threats in the perspective of maritime security. Various efforts have been made by the Indonesian government through supervisory and security agencies such as the Indonesian Navy (Navy) and the Maritime Security Agency (BAKAMLA) in the marine sector are still considered not optimal, especially cases of illegal fishing that often occur in the North Natuna Sea region. Illegal fishing is still common, as in the case of the Navy ships that spotted 10-12 foreign fishing vessels in North Natuna Sea in the Indonesian Exclusive Economic Zone and allegedly was conducting illegal fishing using nets and trawlers. This article offers a monitoring and security strategy through the use of the upwelling phenomenon as one indicator in determining zoning points for potential fishing and can also be useful to help marine patrols in combating illegal fishing in the North Natuna Sea region.

**Keywords:** Upwelling; Surveillance, Illegal Fishing, Maritime Security.

**FM-1207-311**

**ROOM: BRI-7**

**14:30 – 14:40**

**Effectiveness *Spirulina platensis* In Diets on Growth and Nutrient Efficiency of *Litopenaeus vannamei* Shrimp**

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**Abstract** - The purpose of this study was to determine the effect and the best amount of utilization of *Spirulina platensis* flour to replace fish meal protein in feed formula on growth and nutrient efficiency of *Litopenaeus vannamei* shrimp. This study used a completely randomized design with 4 treatments and 3 replications. The four feeds (35% isoprotein and 3.40 kcal/g isoenergy) were formulated with fishmeal protein replaced by *Spirulina platensis* flour protein. The replacements were (A) 0%; (B) 2.5%; (C) 5%; (D) 7.5%. The parameters observed and analyzed were: survival rate, specific growth rate, feed conversion ratio, protein efficiency ratio, protein retention, fat retention and energy retention. The results showed that the treatments had no effect on survival rate. However, it significantly affected on growth rate, feed conversion ratio, protein efficiency ratio, protein retention, fat retention and energy retention. Based on the results of the study it can be concluded, the best amount of utilization of *Spirulina platensis* flour to replace fish meal protein in feed formula on growth and nutrient efficiency of *Litopenaeus vannamei* shrimp is 7.50%.

**Keywords:** *Spirulina platensis* flour; *L. vannamei*, growth, nutrient retention

**TF-1205-236**

**ROOM: BRI-7**

**14:40 – 14:50**

**Potential and Conservation of Kedawung (*Parkia timoriana* (DC.) Merr.) in Meru Betiri National Park**

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**Abstract** - Kedawung (*Parkia timoriana* (DC.) Merr.) is one of type of rare medicinal plant because it is only found in a small part of Indonesia. Kedawung has high ecological and economic potential because it contains various active compounds such as anticancer. This study aims to analyze the condition of habitat vegetation, the rate of regeneration and distribution, as well as identifying the use of Kedawung in the Meru Betiri National Park. The method used is vegetation analysis, observation, and in-depth interviews with the selection of informants using purposive sampling. Kedawung is most often found in research locations at tree and pole growth rates. At the growth rate of saplings and seedlings were not found at all this indicates that the regeneration of the Kedawung in the Meru Betiri National Park rehabilitation zone was unsuccessful and threatened its sustainability. Kedawung distribution is found in almost all rehabilitation zones of Meru Betiri National Park and is located at an altitude of 500 masl. The highest value of importance value index was found in kedawung. The use of kedawung directly by the community is used as herbal medicine and the seeds are sold to the collectors as raw materials for the herbal medicine industry. Conservation efforts that can be done are by conducting regeneration to preserve the kedawung in Meru Betiri National Park.

**Keywords:** Regeneration; rare medicinal plants; ethnobotany

**ADS-1130-157**

**ROOM: BRI-7**

**14:50 – 15:00**

**The Effect of Recycling Litter in Raising Broiler on Litter and Air Quality**

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**Abstract** - Broiler farm waste has many negative effects on the environment, animal health and worker safety in the poultry industry. One type of poultry production waste is litter. It is necessary to reduce the amount of waste, one of them was conducted by reusing litter. The objective of this study was to analyze the effects of reusing litter on litter and air quality. The material used in this research were two-hundred-day old chick (DOC) males strain Ross jumbo with an average body weight of 44.74±2.21 g. The research materials were divided into 3 mini closed-house cages (T0: new litter, T1: litter fermented and sun-dried, T2: litter fermented and aerated). The data of litter quality (pore structure, total bacteria, moisture content, and adsorption percentage) and air quality (carbon dioxide, ammonia, hydrogen sulfide concentration, and dust total) were collected. The data of moisture and adsorption percentage of litter were analyzed statistically using Completely Randomized Design (SAS 9.0). Total bacteria, litter pore structure and air quality were analyzed using descriptive analysis. The results showed that reusing litter did not influence the percentage of moisture and litter adsorption. The pore surface area of litter was not affected by the different treatments. The fermented and sun-dried litter showed a larger decreasing of total bacteria (57.75%) compare to the

fermented and aerated litter (41%). Carbon dioxide, ammonia, hydrogen sulfide concentration, and dust total in all treatments were within the normal standard. In conclusion, litter and air quality were not affected by reusing litter.

**Keywords:** air quality, broiler, litter fermentation, litter quality, new litter

**ADS-1206-264**

**ROOM: BRI-7**

**15:05 – 15:15**

**Business Analysis of Small-Scale Independent Layer Farming System: Case Study in Malang Regency, Indonesia**

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**Abstract** - The research was conducted at Malang Regency, East Java, Indonesia to understand the amount of small-scale income obtained by layer farmers. The research was conducted from June to July, 2018. The method used was a survey method. The total sample was 109 respondents determined by purposive sampling method with the consideration of farmers who breed laying a layer of 1000-5000 for at least 3 years. The collection of research data consisted of primary data and secondary data. Data were analyzed using an input-output approach and descriptive analysis. The result showed that the average production cost of small-scale laying layer was IDR. 105.333.267, - per month while the average revenue is IDR. 114.507.325, - per month. The average income obtained by small-scale layer chicken farmers is IDR. 9.174.058. Moreover, the obtained R/C ratio was 1.09, thus the research concludes that the layer farming practice in Malang regency is categorized feasible.

**Keywords:** Business; layer; small-scale

**TF-1117-054**

**ROOM: BRI-7**

**15:15 - 15:25**

**Analysis of Agrarian Conflict Resolution Through Social Forestry Scheme**

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**Abstract** - Uncertainty of community rights on land become the root of agrarian conflict in Indonesia. Efforts to resolve agrarian conflicts have become important issues in each period of government in Indonesia. The Government of Indonesia issued Ministerial Regulation No.83 of 2016 concerning Social Forestry. The objectives of this policy are forest protection, community economic empowerment and resolution of social problems. This study aims to analyze the development and dynamics of agrarian conflicts in the forestry sector from 2013 to 2018 and the role of social forestry schemes in conflict resolution. The method used is descriptive statistical analysis and exploration of secondary data obtained from the Annual Report of the Consortium of Agrarian Reform (KPA) and conflict resolution reports from the Ministry of Environment and Forestry. Agrarian conflicts in Indonesia during 2013 - 2018 reached 2,612 cases of agrarian conflicts with a total land area of more than 7.1 million ha. The analysis shows that the contribution of conflicts in forest areas is 5% to 8% to all agrarian conflicts in Indonesia. The average area of conflict in the forestry sector per year reaches 24% of the total area of agrarian conflicts in Indonesia or 263,269 hectares per year. The conclusion of this research is the resolution of agrarian conflicts with social forestry schemes can be effective if the community is more oriented to the protection and legal recognition for optimizing forest use rather than the demands of legal recognition of land ownership.

**Keywords:** Social Forestry; Agrarian; Conflict; Forest

**FM-1201-189**

**ROOM: BRI-7**

**15:25 - 15:35**

**First Report on Molecular Identification of Green Seaweed *Caulerpa* sp. Collected from Coastal Waters of Mandangin Island, Madura, East Java, Indonesia**

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**Abstract** - Indonesia has a sea area that reaches up to 2/3 of the total area of Indonesia, which is 6.32 million square kilometers (km<sup>2</sup>). The potential of the Indonesian sea has benefits in supporting the people's economy. One of the marine natural resources owned by Indonesia is green seaweed. *Caulerpa* is one of the green seaweeds that grows naturally in Indonesian waters such as those in the waters of Mandangin Island, Madura, East Java. This study aims to identify *Caulerpa* sp. Based on molecular-based on certain genetic markers. This research is expected to provide information in identifying algal macros from waters in Indonesia, especially Mandangin Island, Madura on a molecular basis based on 18SrRNA primers. The results showed that both green seaweed samples included in the Genus *Caulerpa* were analyzed using 18SrRNA primers. The sample I is related to *Caulerpa sertularioides* f. longipes and sample II is related to *Caulerpa taxifolia* 18SrRNA.

**Keywords:** 18SrRNA, Caulerpa, Caulerpa sertularioides, Caulerpa taxifolia 18srRNA

**BT-1201-188**

**ROOM: BRI-6**

**15:35 - 15:45**

**The Potential of Streptomyces to Inhibit Escherichia coli Extended-Spectrum Beta-Lactamase Causing Urinary Tract Infection**

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**Abstract** - Streptomyces are organisms that have the ability to produce primary metabolites such as enzymes and secondary metabolites such as antibiotics. *Escherichia coli* Extended-Spectrum Beta-Lactamase is a pathogenic bacterium that causes *Urinary Tract Infection* that has resistance to Beta-Lactam antibiotics. The aim of this research is 1. to know the ability of Streptomyces which is isolated in inhibiting *E. coli* ESBL, 2. to find out the best *Minimum Inhibition Concentration* (MIC) of *Streptomyces* filtrate against *E. coli* ESBL, 3. To find out the name of the *Streptomyces* species that has the best ability in inhibiting *E. coli* ESBL was identified molecular. Found 4 isolates of *Streptomyces*, namely *Streptomyces* sp.1, *Streptomyces* sp.2, *Streptomyces* sp.3, and *Streptomyces* sp.4. Only *Streptomyces* sp.3 isolates showed the ability to inhibit *E. coli* ESBL by forming an inhibition zone of 16 mm in diameter. This research shows that the filtrate *Streptomyces* sp.3 which is soluble in N-Butanol solvent is able to inhibit *E. coli* ESBL, while the filtrate that is soluble in water solvent is not able to inhibit *E. coli* ESBL. The Minimum Inhibition Concentration Test of *Streptomyces* sp.3 filtrate which is soluble in N-Butanol obtained 10% filtrate concentration results are still able to inhibit *E.coli* ESBL with inhibition zone diameter of 20 mm. Molecular identification of *Streptomyces* sp.3 isolates was obtained that isolates had homology to 5 species of *Streptomyces* contained in GenBank databases namely *Streptomyces rochei* strain R-3B, *Streptomyces enissocaesilis* AL3, *Streptomyces* sp. SMVB 1 and *Streptomyces djakartensis* with each percentage identify 99.53%

**Keywords:** Streptomyces; Escherichia coli; Beta-Lactamase; Urinary Tract Infection.

MH-1110-011

ROOM: BRI-8

13:30 - 13:40

**Enmg Profile of Patients With Hand Pain Complaints**<sup>1</sup>Shahdevi N. K.\*, <sup>2</sup>Kandhisa, <sup>3</sup>Machlusil H., <sup>4</sup>Neila R.<sup>1,2,3,4</sup>Neurology Department, Medical Faculty of Brawijaya University, Malang, Indonesia<sup>1</sup>shahdevinandar@yahoo.com, <sup>2</sup>kandhisa180322@gmail.com, <sup>3</sup>machlusilhusna@yahoo.com, <sup>4</sup>neilaraisa@gmail.com

**Abstract - Background:** Hand pain is a complaint that often found in daily practice. Electroneuromyography (ENMG) examination has pivotal role neuromuscular disorders in hand pain. This study aims to determine ENMG profile of patients with hand pain complaints also its characteristics. **Methods:** This research is a descriptive observational study. Data were obtained by interviewing technique conducted in neurology polyclinic General Hospital of Dr. Saiful Anwar Malang (RSSA), comprises patient characteristic and their ENMG summaries. There were a total of 58 patients with hand complaint that fulfilled inclusion criteria. ENMG was conducted to all research subjects. **Results:** For 10 months (April 2017 – December 2017) there were 58 patients complained of hand pain, comprised 50 new patients (86%) and 8 old patients (13%). A total of 41 subjects (71%) were women and 17 subjects (29%) were men with complaints of unilateral hand 44 (76%) and bilateral 14 (24%) subjects. The major age group was 45-55 years (70%). The average occupation that experienced by patients was housewife (63%). Patients came with paresthesia as their most complaints (60%) with positive Tinnel sign found in 62% of patients and hypertension 34% and DM 24% as comorbid. ENMG was conducted to all patients with Carpal Tunnel Syndrome (CTS) 44 patients (75%), polyneuropathy 6 patients (10%), de Quervain 6 patients (10%) as results. **Conclusion:** The most ENMG results of patients with hand pain complaints is Carpal Tunnel Syndrome.

**Keywords:** Hand Pain; CTS; Polyneuropathy; ENMG.

MH-1114-022

ROOM: BRI-8

13:40 - 13:50

**Application of The Nesting Method for Preparation of Heavyweight Bodies**<sup>1</sup>Wuri Utami\*, <sup>2</sup>Ning Iswati, <sup>3</sup>Sri Abdi Lestari<sup>1,2,3</sup> STIKES Muhammadiyah Gombong<sup>1</sup>wuri\_utami@stikesmuhgombong.ac.id, utamiwuri@gmail.com\*, <sup>2</sup>ning\_iswati@stikesmuhgombong.ac.id, wise.ning@gmail.com; <sup>3</sup>sriabdillestari80@gmail.com

**Abstract -** Premature born Babies are identical with low birth weight that requires babies to adapt the external environment hard, premature babies also have to face threats to their survival due to organ maturation that has not been reached at birth, so they are at risk of experiencing high morbidity and mortality. The purpose of this study was to find out how the application of nesting to the babies' weight gain in. This research method used a quasi-experimental design method with a pretest-posttest group with 34 respondents treated in the perinatology room at dr Sudirman Kebumen Hospital selected using accidental sampling techniques. The steps of measuring on the intervention respondents are to measuring the babies weigh first before being given nesting, then after weighing it is applied to nest throughout the day and weighed again after the first 24 hours and until for 7 days. Data analysis used a paired t-test. Criteria for respondents in this study were premature babies or LBW, premature babies who did not experience congenital abnormalities. The results showed an average gestational age of 33.5 weeks with the youngest age of 28 weeks and the oldest age of 37 weeks with an average weight of 1790 grams, then after the application of the use of nesting showed an average increase in infant bodyweight of 17 respondents in the intervention group there were no differences with the 17 control groups. The conclusion from this study there was no significant effect on the weight gain of the babies who received the application of the nesting method.

**Keywords:** Nesting Method; Low Birth Weight Babies

MH-1115-044

ROOM: BRI-8

13:50 - 14:00

**Role of Pulmonary Rehabilitation in Acute Exacerbation of Chronic Obstructive Pulmonary Disease: A Case Series**<sup>1</sup>Rakhmawati Diyana\*, <sup>2</sup>Shabrina Narasati, <sup>3</sup>Rahmad, <sup>4</sup>M. Barlian Nugroho, <sup>6</sup>Moch. Ridwan, <sup>7</sup>Eko Nugroho, <sup>8</sup>Samiah <sup>9</sup>Rachmawati<sup>1-9</sup> Department of Physical Medicine and Rehabilitation, Faculty of Medicine Brawijaya University, dr. Saiful Anwar General Hospital, Malang, Indonesia<sup>1</sup>rakhmawatid@student.ub.ac.id\*, <sup>2</sup>shabrina@student.ub.ac.id

**Abstract -** Chronic Obstructive Pulmonary Disease (COPD) is a chronic inflammatory lung disease that causes obstructed airflow from the lungs and primarily affects the airway and lung parenchyma while it also induces clinically important systemic consequences. Pulmonary rehabilitation (PR) in COPD have been shown to improve health-related quality of life, exercise capacity, self-efficacy and reduce COPD-related hospital admission. The purpose of postural drainage, manual technique, and cough control is to drain the excessive sputum, while breathing control with pursed lip breathing and breathing exercise with deep breathing and chest expansion exercise are to improve the respiratory capacity and control. The aim of this study was to investigate the feasibility and outcome of PR in patients with Acute Exacerbation (AE) of COPD. This case report describes 4 patients with of AE of COPD who received PR. The inpatient PR program was 5 consecutive days twice daily of 3 times repetition

cough control, 2 sets of 6 repetition pursed lip breathing, 2 sets of 6 repetition deep breathing exercise, postural drainage, and manual clapping. The postural drainage and the manual technique were given according to the chest x-ray result. The result of 5 days PR was: improvement of clean airway, f SOB, incentive spirometry, chest expansion, and single breath count test in all subjects. Our findings demonstrate that early inpatient PR in COPD AE is safe, significantly effective and beneficial by improving many aspects of respiratory function.

**Keywords:** Pulmonary rehabilitation; chronic obstructive pulmonary disease

**MH-1128-131**

**ROOM: BRI-8**

**14:00 - 14:10**

### **The Effect of Hair Spray Exposure to the Changes in Electrical Properties of Mice Organ**

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**Abstract** - Human activities at this time tend to use substances that are pollutants and have an impact on health. Pollutants can enter the body through the process of respiration and will disrupt the organ function. Substances that are often used in daily life and potentially as pollutants are hairspray. They contain vinyl acetate and methacrylate complex polymers. Cocamide DEA surfactants in hairspray can cause cancer and produce toxins. The use of hairspray continuously will cause organ damage due to the emergence of secondary metabolites and free radicals. The diagnosis of organ damage in the latest research from various scientists is to utilize the electrical characteristics of the organ. The bioelectric characteristic that can be observed is dielectric constant. Based on the impact of organ damage and suspected changes in organ electrical properties due to exposure to pollutants, a study needs to be conducted to observe changes in the resistivity and dielectric constant in organ tissue in mice exposed to hairspray with cocamide DEA surfactant content. The results showed that the more concentration of exposure given causes increasing the level of damage to the organs. The increasing level of damage is very significant in the changing of the resistivity and dielectric constant value of mice organs. The changing of electrical properties of mice organs is possible due to damage to organ cells caused by increasing reactive oxygen species and free radicals due to oxidation reactions resulting from the interaction of cocamide DEA with cell components.

**Keywords:** Electrical properties; hair spray; mice; organ damage.

**MH-1129-139**

**ROOM: BRI-8**

**14:10 - 14:20**

### **Wistar Rat Weight Loss on Conventional Cigarette Exposure compared to E-Cigarette**

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**Abstract** - Several studies have shown that smoking behavior is closely related to weight and obesity. Smokers tend to prefer fatty foods with high calories which ultimately makes a smoker vulnerable to being overweight. However, there are some studies that show smokers tend to have lower body weight than nonsmokers. Our aim is to evaluate the short-term effects of smoking with conventional cigarettes and e-cigarette on weight changes in Wistar rats because animals try to minimize some confounding factors that are difficult to work on human samples (for example, physical activity, diet and motivation). This research is an experimental study, using 8-week-old male Wistar rats with body weight 150-200 grams divided randomly into 5 groups, namely 1) the group was not treated, 2) the filter cigarette exposure group, 3) the clove cigarette group, 4) e-cigarette group with a dose of 3 mL with nicotine content of 0 mg, and 5) e-cigarette group with a dose of 3 mL with nicotine content of 3 mg. Body weight measurements using a digital scale. The results showed that there was a significant change in body weight between clove cigarettes and filter cigarettes with  $p = 0.024$  ( $p > 0.05$ ). This study showed a decrease in body weight in all groups giving cigarette smoke. Weight loss was significantly lower in the filter cigarette group compared to clove cigarettes and there was no significant weight difference between the conventional cigarette group and e-cigarette. This is likely the cigarette filter actually creates a major problem for smokers because of the design and materials used so it does not provide a safer effect for smokers.

**Keywords:** Filter cigarettes; Cigarette; e-; e-cigarette; Nicotine; Weight

**MH-1130-163**

**ROOM: BRI-8**

**14:20 - 14:30**

### **Effect of Cigarette Smoke Exposure on Chronic Inflammation and p53 Expression in Renal Pelvis Epithelial**

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**Abstract - Background:** Many risk factors can cause Upper tract urinary carcinoma (UTUC). Smoking is the most influential risk factor and is associated with the formation of aromatic acids and could induce apoptotic cycle. This study was aimed to investigate the effect of cigarette smoke exposure on inflammatory state and p53 expression in renal pelvis epithelial of wistar rats. **Methods:** As many as 25 male Wistar rats (*Rattus norvegicus*) aged 6-8 weeks were divided into five groups as follows: Control (without treatment); CS-1, CS-2, CS-4, and CS-8 (treated with CS 1x, 2x, 4x, and 8x/day, respectively). Each exposure was done for 15 minutes for 60 days. histopathological changes were evaluated from HE-stained specimens. Expression of p53 was measured by immunohistochemistry method. **Results:** Results showed that neutrophil and lymphocyte count in CS-8 was significantly higher as compared to CS-1 ( $p < 0.05$ ) and control ( $p < 0.05$ ). p53 expression was found in the CS-8 (3 out of 5 subjects had positive p53 expression, with a total of 4-7 cells from 10 hpf). Correlation study showed significant correlation between frequency of cigarette smoking exposure and neutrophil count ( $p = 0.000$ ;  $r = -0.856$ ); lymphocyte count ( $p = 0.000$ ;  $r = 0.985$ ); and p53 expression ( $p = 0.000$ ;  $0.072$ ). **Conclusion:** We concluded that there were significant differences in acute inflammation state, chronic inflammation state and p53 expression among groups. Correlation study showed that frequency of cigarette smoking exposure was positively correlated with lymphocyte count and p53 expression.

**Keywords:** renal pelvis; chronic inflammation; cigarette smoke; p53

MH-1130-164

ROOM: BRI-8

14:30 - 14:40

### The Relationship Between Phimosis, Smegma, and Preputial Bacteria with Inflammatory Status of Circumcised Patient

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**Abstract - Introduction:** Phimosis is the inability to retract the prepuce either partially or completely and the preputial retractability increases with age. Circumcision is a surgical procedure that has been done since the ancient times. Circumcision is believed by various parties as a form of defense against pathogens that may cause various abnormalities. Smegma is whitish lump that formed from desquamation of preputial epithelial cells. Smegma and bacteria in the prepuce may cause abnormalities such as genital infections, urinary tract infections, and even malignancy. This study aims to determine the relationship between phimosis, smegma, and preputial bacteria with inflammatory status of circumcised patient. **Materials & Methods:** This study was an observational analytic study with a cross sectional method for boys who underwent circumcision at Saiful Anwar General Hospital Malang. The data will be analyzed using chi-square and will be calculated for the relative risk. There were 76 patients who underwent circumcision from March 2018 until August 2018. This study has been approved by Ethical Committee of Medical and Health Research, Faculty of Medicine, Universitas Brawijaya (400/55/K.3/302/2018). **Results:** It was found that the presence of phimosis was significantly associated with the presence of smegma and preputial bacteria ( $p < 0.01$ ) with a risk of 30x and 8x respectively. However, the presence of smegma and preputial bacteria in the prepuce was not significantly associated with the inflammatory status in the prepuce ( $p = 0.541$  &  $p = 0.084$ ). **Conclusions:** The presence of phimosis has a significant risk in the formation of smegma and the growth of preputial bacteria.

**Keywords:** Bacteria; Circumcision; Inflammation; Phimosis; Smegma

MH-1202-194

ROOM: BRI-8

14:40 - 14:50

### Effect of Bleomycin, Etoposide and Cisplatin Treatment on Spermatogonia Cell and Malondialdehyde Level in Male Rats

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**Abstract - Background:** Co-administration of bleomycin, etoposide, and cisplatin (BEP), have brought the cure rate to over 90% which becomes the standard chemotherapy for testicular cancer. Impact of the treatment to the outcome become a concern, particularly the adverse effect on spermatogenic function that pose a long-term reproductive health risk to cancer survivors. There is no evidence, when the damage to the testes began due to the administration of BEP chemotherapy, makes the indication of treatment still controversial. This study was aimed to determine the effects of BEP on Spermatogonial cell and MDA levels outcome in an animal model. **Methods:** Male wistar rats (*Rattus norvegicus*) aged 13-15 weeks were treated daily with BEP for three cycles, 33 hours each. It was divided into four groups as follows: one control group received only 1cc of normal saline, and three groups received (intraperitoneal injection) three cycles of 0.5 x dose-levels of bleomycin (0.75 mg/kg), etoposide (7.5 mg/kg) and cisplatin (1.5 mg/kg). Cell number of Spermatogonia cells were calculated from HE-stained specimens and observed under light microscope (Olympus BX-51) using 400x magnification (high power field).

Malondialdehyde (MDA) level was measured using thiobarbituric acid (TBA) test method by spectrophotometry. **Results:** There was a significant decrease in the average number of Spermatogonia cells ( $p = 0.003$ ) between the control group and the treatment groups. This is caused by excessive exposure to BEP chemotherapy, which cause atrophy of the seminiferous tubules and content of germ cells in the tubules has decreased, accompanied by the appearance of immature germ cells that enter the lumen. A significant increase in MDA levels ( $p = 0.001$ ) occurred after the administration of the third cycle of BEP chemotherapy. **Conclusion:** BEP chemotherapy adversely affect the number of Spermatogonia cells and MDA level. The third cycle BEP chemotherapy significantly more destructive compared to the first and second cycle.

**Keywords:** BEP chemotherapy; male germ cells; malondialdehyde

MH-1202-198

ROOM: BRI-81

14:50 – 15:00

### Coconut Oil Based Soap with Kaolin and Bentonite Filler as *Najis Mughallazah* Media Cleaning

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**Abstract** - Indonesian constitution No.33 of 2014 on consumer protection for halal products. The solid soap is present for Muslim community in eliminating *najis mughallazah*. Qur'an explains *Najis mughallazah* remover activity should use water for 7 times and one of them uses clean sand. The addition of clay (kaolin and bentonite) is intended to help eliminate the entire DNA unclean (*najis mughallazah*) on or attached to the surface of the skin. This study was conducted to determine the effect of an increase of clay on soap formulas and to know whether the solid soap formula has the ability to eliminate the pork derived DNA testing using PCR method. Saponification reaction was designed in 4 different reaction temperatures (50°C - 80°C), early stage is to heat the coconut oil and then mixed with the kaolin / bentonite (10% - 20%), followed by adding NaOH (35%) and 10 minutes reaction time. The results show all soap products meet SNI standards. Best results are obtained on a solid soap kaolin and bentonite at 15% (50°C) and 17.5% (60°C). The soap is meet SNI standards and as well as the performance of its hardness is almost equivalent to the conventional soap market. In the first rinse soap been able to eliminate pig DNA that has been applied to the human hand. For comparison, the washing of DNA was also performed using water and soap X but the electrophoresis results showed the persistence of the residual DNA. Conventional soap and water are not able to eliminate DNA.

**Keywords:** Bentonite; Coconut Oil; Kaolin; *Najis Mughallazah*; Soaps

MH-1207-300

ROOM: BRI-8

15:05 – 15:15

### Refolding and Recovery of Recombinant Human Thyroid Stimulating Hormone Receptor (hTSHR-169) from Inclusion Bodies Expressed by *E. coli* BL21(DE3)

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**Abstract** - Expression of human recombinant proteins in *E. coli* often results in the formation of insoluble aggregates as inclusion bodies (IBs). This inactive product should be treated with solubilization procedure, in vitro refolding and purification to recover into the bioactive product. In our previous study, hTSHR-169 which cloned into the pET-28a vector was expressed in *E. coli* BL21(DE3) strain to detect the thyroid-stimulating autoantibodies (TSAb) in patient with Graves' disease. The refolding of insoluble proteins into bioactive forms was intricate. This study aimed to recover inactive IBs of hTSHR-169 products using urea 8 M and its refolding strategies into bioactive form. Urea as a conventional solubilization agent has been successfully used to solubilize IBs of hTSHR-169 expression and recover into the functionally bioactive. Under optimal conditions, we obtained about 450 mg active refolded hTSHR169 per liter of expression medium. About 77% of IBs of hTSHR-169 were refolded into soluble and were purified by Ni-TED. Immunoreactivity of 16,8 kDa protein with Graves' sera was confirmed by Western blotting. The high yielding recovery process provides a straight-forward strategy for recombinant hTSHR-169 purification.

**Keywords:** Inclusion body; recombinant hTSHR169; solubilization; refolding; urea

MH-1207-301

ROOM: BRI-10

15:15 – 15:25

### Cloning and Expression of Human Thyroid Stimulating Hormone Receptor (hTSHR-169) Gene in *Escherichia coli* BL21(DE3) strain



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**Abstract - Introduction:** Thyroid stimulating hormone receptor (TSHR) is a major autoantigen in Graves' disease (GD), which is attacked directly by thyroid-stimulating autoantibody (TSAb). This study aimed to express hTSHR-169 (36-169 aa) in *E. coli* BL21(DE3) expression system. **Methods:** Construct of hTSHR-169 gene was cloned into pET-28a expression vector, and transformed in competent *E. coli* BL21(DE3) cells using the heat shock method. Soluble of recombinant was purified by his-tag affinity chromatography and its specificity was confirmed by western blot using monoclonal antibodies and TSAb in Graves' sera. **Results:** The optimal expression of recombinant hTSHR-169 protein in *E. coli* BL21(DE3) was reached in 4 hours after 0,1 mM *isopropyl-B-D-thiogalactopyranoside* (IPTG) induction at 37°C up to 350 µg/mL. The purified recombinant hTSHR-169 was presented ~16,8 kDa of single protein band on both of NC membranes as expected. **Conclusion:** Recombinant hTSHR-169 protein was successfully expressed and purified in *E. coli* BL21(DE3). Further, this recombinant could be developed as antigen-based serodiagnostic biomarker to detect the thyroid stimulating autoantibodies in GD.

**Keywords:** Recombinant hTSHR169, Thyroid-stimulating antibody, Bacterial expression, Graves' disease

MH-1205-239

ROOM: BRI-9

13:30 - 13:40

### Effect of Cigarette Smoke Exposure on Chronic Inflammation and P53 Expression in Bladder Epithelial

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**Abstract - Background:** Bladder cancer is widely studied for its association with cigarette smoke (CS) exposure. Nicotine and carcinogenic substances in CS could induce chronic inflammatory state and DNA damage. This study was aimed to investigate the effect of CS exposure on chronic inflammatory state and p53 expression in bladder epithelial of Wistar rats. **Methods:** As many as 25 male Wistar rats (*Rattus norvegicus*) aged 6-8 weeks were divided into five groups as follows: Control (without treatment); CS-1, CS-2, CS-4, and CS-8 (treated with CS 1x, 2x, 4x, and 8x/day, respectively). Each exposure was done for 15 minutes for 60 days. Chronic inflammatory score was calculated from HE-stained specimens. Expression of p53 was measured by immunohistochemistry method. **Results:** Results showed that lymphocyte and histiocyte count in CS-8 was significantly higher as compared to CS-1 (p<0.05) and control (p<0.05). Lymphocyte and histiocyte count in CS-4 was also significantly higher compared to non-treated group (p<0.05). Chronic inflammatory score was significantly higher in CS-8 compared to another group (p<0.05). Moreover, p53 expression was found in CS-8 group (2 of 5 subjects had positive p53 expression, 20 positive cells in from total 10 hpf) and significantly different with other groups (p=0.011). Correlation study showed significant correlation between frequency of cigarette smoking exposure and lymphocyte count (p=0.000; r=0.956); monocyte count (p=0.000; r=0.928); chronic inflammation score (p=0.000; r=0.928); and p53 expression (p=0.007; r=0.522). **Conclusion:** We concluded that there were significant differences in chronic inflammation state and p53 expression among groups. Correlation study showed that frequency of cigarette smoking exposure was positively correlated with chronic inflammation and p53 expression.

**Keywords:** bladder; chronic inflammation; cigarette smoke; p53

MH-1205-247

ROOM: BRI-9

13:40 - 13:50

### Effectiveness mHealth Improves Adolescent Health

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**Abstract -** In several countries in the world, mHealth has become a means to provide information, control disease and used for prevention. Adolescents are specialized because they are the most mobile phone users of all ages and the need for media as an effort to control and prevent the disease they suffer or prevent future diseases. This study is a systematic review through a journal review based on the PRISMA protocol to assess the effectiveness of using mHealth in adolescents. The process of searching articles is accessed from an internet database search namely Ebsco and Proquest with keywords: adolescents, mHealth and effectiveness. Initial screening is based on the year of publication (2014-2019), full text, English, reading the title and abstract, then conducting a feasibility assessment, finding 5 journals that are relevant to the inclusion and exclusion criteria. Inclusion criteria were school-age adolescents who received mHealth

interventions and the study design used the Randomized Control Trial (RCT) method. Exclusion is a journal under the year 2014 and teenagers are not in school. The analysis was conducted based on the characteristics of the respondents, sample size, control type. Mobile applications, text messages, and cell phones as mHealth interventions are considered easily accessible and effective as information providers, control and prevention of diseases in adolescents the advantages and disadvantages of mHealth based on the journal are examined so that later these results can become recommendations in making mHealth target adolescents in Indonesia.

**Keywords:** adolescent; mHealth; effectiveness

**MH-1205-248**

**ROOM: BRI-9**

**13:50 - 14:00**

### **Length and Socio-economic on Prevalence of Stunting at Children Under Five**

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**Abstract - Background:** The prevalence of stunting in children under five years old in Indonesia has been fluctuating, but remain high. The study aimed to analyze the associations of various factors with stunting. **Method:** The study was a cross sectional study conducted in Gowa from January to July 2019. The study involved 90 of children aged 12-59 months. The independent variables included in the analysis were the children characteristics, nutrient intake, social economic status, hygiene and sanitation, access and utilization of health care services, history of infectious diseases, birth weight, birth length as well as genetic factors. The children's nutrition status was determined using the WHO *AntroPlus2010*. Inferential statistics utilized were Chi-Square and Logistic regression. **Results:** The significant variables with the incidence of stunting were body weight <2,500 grams, birth length <48cm, and the age of preschool children 12-36 months. Most importantly, children with birth lengths less than <47 cm have a significantly higher risk (5.9 times) inhibited than children with birth length  $\geq 48$  cm ( $p < 0.05$ ; 95% CI: 2.58-87.9). Family socio economic condition did not show any significant association with the occurrence of stunting but low socioeconomic factor supporting the cause stunting as well as unhealthy living environment which can lead to higher incidence of infectious can also be a trigger for stunting. **Conclusion:** Birth length is the only strong predictor for stunting, thus nutrition during pregnancy is key for stunting prevention.

**Keyword:** Stunting; birth weight; birth length; socioeconomic

**MH-1206-256**

**ROOM: BRI-9**

**14:00 - 14:10**

### **SEM Model in Analysis of the Relationship of Severity Diagnosis with Breast Cancer Recovery**

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**Abstract -** Diagnosis of the severity of breast cancer has a series of relationships with the prognosis of recovery along with factors of patient history, severity, treatment, and nursing. The problem is how the pattern of relationships between all these factors. This study aims to determine the pathway model of the relationship between the severity of breast cancer with recovery along with other related factors. Modeling of SEM (Structural Equation Modeling) drew 204 patients diagnosed with breast cancer in Makassar hospitals during 2018. Data was collected from the Medical Record, Hospital Information System, and hospital pathology diagnosis. Data analyzed consisted of severity as exogenous variable, recovery as endogenous variable, and latent variables along with their indicators: medical history, clinical diagnosis and pathological diagnosis (topography, grade, behavior), treatment, and nursing factors. The result of SEM in measurement model test between severity and pathology diagnosis indicators found the probability values: severity with grade ( $p = 0.001$ ), behavior ( $p = 0.275$ ), and topography ( $p = 0.276$ ). Structural model test between severity and recovery got a probability value of 0.336. The suitability test of the model found Chi-square value of 213,657, df 53, p value 0.001; CMIN/DF 44,031; RMSEA 0.122. Correlation test between patient history and severity 0.037; nursing with severity of -0.070; and history of patients with nursing -0.024. The structural model test does not show a significant effect of severity toward recovery; the suitability test of the model is less able to explain its suitability with the data; and the correlation test is weak.

**Keywords:** SEM; diagnosis; severity; recovery; breast cancer

**MH-1206-257**

**ROOM: BRI-9**

**14:10 - 14:20**

### **The Effect of Black Cumin Extract (*Nigella sativa*) on Apoptosis in Retinoblastoma Cell Culture Through E2F1 Protein Expression**

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**Abstract - Aim:** To determine the effect of black cumin (*Nigella sativa*) extract on apoptosis in retinoblastoma cell culture through E2F1 protein expression. **Methods:** This research was an *in vitro* laboratory experiment post-test control group design by applying Y79 American Type Culture Collection (ATCC) 10801 University Boulevard Manassas, VA 20110 USA divided into 5 groups. Group I is the control group without the administration of *N. sativa* extract. Whereas, group II, III, IV, and V are exposed with 50, 100, 150, and 200 mg/mL of *N. sativa* extract respectively. Apoptosis and E2F1 expression were examined with flowcytometry. Statistical analysis was performed with the Mann Whitney and followed by Spearman test. **Results:** The statistical analysis showed that *N. sativa* extract reduced the expression of E2F1 and improved apoptosis along with the increase in the given dose. Based on the Mann Whitney test, a significant difference was found in the treatment group at 100 ( $p < 0.05$ ), 150 ( $p < 0.01$ ), and 200 ( $p < 0.01$ ) mg/mL in the measurement of E2F1 expression. Apoptosis measurements also indicated a significant difference in the 200 mg/mL treatment group ( $p < 0.01$ ). The effective dose for decreasing the E2F1 expression and improving the apoptosis were 150 and 200 mg/mL respectively. Based on Spearman test, there was a weak correlation between the E2F1 expression and the apoptosis. The lower the E2F1 expression, the higher number of apoptosis. **Conclusion:** Black cumin extract decreased the expression of E2F1 and improved apoptosis in retinoblastoma cells.

**Keywords:** black cumin extract; *Nigella sativa*; E2F1; apoptosis; retinoblastoma cell culture

MH-1207-308

ROOM: BRI-9

14:20 - 14:30

### Predictive Factor to Castrate-Resistant Prostate Cancer (CRPC) After Primary Androgen Deprivation Therapy (ADT): Single Center Experience in Indonesia

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**Abstract - Introduction:** ADT is the main therapy in prostate cancer, especially in advanced stages, although ADT does not limit the progression of this disease to become CRPC, where the mortality rate will be much higher when CRPC has occurred. This study aims to examine correlating factors influenced the short duration to CRPC after primary ADT administration. **Methods:** 205 prostate cancer patients with CRPC or mCRPC in Saiful Anwar Malang Hospital from 2013 to 2018 were included in this study. Data recorded were age, initial PSA level, Gleason score, prostate cancer stage, type of ADT, nadir PSA, time between ADT and nadir PSA, and testosterone levels after ADT. To see the independent factors that influence the occurrence of CRPC, the Cox proportional hazards regression model was used. **Results** The average age of patients was 67,  $53 \pm 6.86$  years with an average level of initial PSA of  $674.87 \pm 1405.80$  80 / dL. The average time for CRPC to occur was  $24.7 \pm 9.74$  months. In multivariate analysis it was found that the stage of cancer with metastasis (HR 1,616,  $p$  0,048), testosterone level after ADT was  $> 20$ ng / dL (HR 4,638,  $p$  0,000), nadir PSA  $> 4$ ng / dL (HR 1,716,  $p$  0,023) and time to reach Nadir PSA  $< 6$  months (HR 1.596,  $p$  0.004) is a significant independent factor for CRPC occurrence. **Conclusion:** cancer stage, testosterone levels after ADT, nadir PSA and time needed to reach nadir PSA were independent factors for CRPC in patients with prostate cancer who had primary ADT.

**Keywords:** -

MH-1207-316

ROOM: BRI-9

14:30 - 14:40

### Retrospective Study of Central Retinal Artery Occlusion: Risk Factors and Onset-to-arrival Time

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**Abstract - Introduction and Objective:** Central Retinal Artery Occlusion (CRAO) is an ophthalmologic emergency. Various systemic conditions can become risk factors. The purpose of this study is to discover the risk factors, and awareness of the emergency of patients with CRAO which is indicated by patient's onset-to-arrival time. **Methods:** The method used in this study is retrospective description from the medical record data of patients diagnosed with CRAO who comes to Saiful Anwar General Hospital for a period of 3 years. Sample collection is done consecutively, obtaining a total of 21 patients. The researched variables are age, visual acuity, risk factor, onset-to-arrival time, and acute-phase CRAO management success. **Result:** Most of the CRAO patients found on this study are aged 60 years old, the highest amount of visual acuity upon arrival is 1/300, risk factor shows that 20 out of 21 samples have systemic hypertension, and almost all of the patients come for treatment 4-6 days after the onset. Most of the samples experience no change in their visual acuity after the therapy. **Conclusion:** The highest risk factor of CRAO found on this study is systemic hypertension. The majority of patients come too late for treatment which causes not improving even worsening of their visual outcome.

**Keywords:** CRAO; Risk Factors; Onset-to-Arrival

MH-1207-352

ROOM: BRI-9

14:40 - 14:50

**Employee's Based Program to Support Breastfeeding at Workplace: Systematic Review**<sup>1</sup>Meita Ilyana, <sup>2</sup>Dian Ayubi<sup>1,2</sup> Public Health Faculty, University of Indonesia

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**Abstract - Background:** Maintaining exclusive breastfeeding up to six months and continuing until two years along with other supplementary food is challenging for working mothers. Working mother faced multiple barrier such as a lack of flexibility in the work schedule to allow for milk expression; lack of accommodations to express and/or store human milk; and concerns about support from supervisors and colleagues and its factors consequently terminated breastfeeding earlier. The aim of this review to examine literature about effectiveness of breastfeeding programs to support mother achieve breastfeeding success. **Method:** Searching relevant articles used three databases; PubMed, Cochrane and Ebscohost. Inclusion criteria are articles must have measured at least one outcome, such as breastfeeding duration and/or breastfeeding exclusivity as an impact of breastfeeding program that implemented at workplace. **Result:** Seven articles were selected from five countries; Indonesia, Malaysia, Thailand, Taiwan and the rest from United States. The institutions where breastfeeding programs are implemented include government offices and clinics, factories, and electronics, entertainment and manufacturing industries. The breastfeeding programs provided include breastfeeding class, counseling, lactation space with equipment for pressing milk, and lactation break. All literature shows positive results in increasing duration and exclusivity breastfeeding coverage at workplace. The average duration of breastfeeding are 6-8 months after postpartum leave. Mothers who received breastfeeding class intervention were six times more likely to be successful at breastfeeding exclusively (OR, 5.93; 95% CI, 1.78-19.79) ( $p < 0.05$ ). **Conclusion:** It is possible to maintain breastfeeding for working mothers until recommended time, Workplace has a significant role to support mother during breastfeeding process. In addition, the breastfeeding program provided can be adjusted to the budget of each company.

**Keywords:** breastfeeding program; working mother; duration; exclusive breastfeeding; workplace**MH-1207-353****ROOM: BRI-9****14:50 - 15:00****Visual Rehabilitation After Cataract Surgery in Children**

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**Abstract - Background:** Congenital cataract is the major cause of visual impairment in Children. The first 6 weeks age of children is the critical period for visual experience. Based on this, it is suggested that cataract surgery in congenital cataract cases should be done as soon as possible. The visual outcome after cataract surgery depends on the surgeon, the age of the children, and other visual conditions. Management of the visual rehabilitation in this case is very challenging. Most of the problem after congenital cataract surgery is amblyopia. **Purpose:** The goal of the visual rehabilitation is to minimize the amblyopia and to optimize the visual function. **Methods:** It is suggested that the rehabilitation must be done as soon as possible after the surgery. Using intraocular implantation in children to optimize the visual outcome is still contraindication. Some ophthalmologist prefers aphakia and do secondary implant. During aphakia, the rehabilitation is performed using aphakic glasses or contact lens. If the case is monocular, it treated with contact lens and patching therapy. if there is other ocular condition, like microcornea or supporting capsular bag is not adequate for intraocular lens implantation, it will be let aphakia, and the risk of amblyopia is greater and the rehabilitation is more challenges. **Conclusion:** the successful of visual rehabilitation depends on ocular condition, the age, the visual rehabilitation technique and the compliance of the patient and the parents.

**Keywords:** amblyopia, congenital cataract, visual rehabilitation**MH-1207-303****ROOM: BRI-9****14:30 - 14:40****Anti-cancer Effects of *Azadirachta indica* in Diethylnitrosamine Induced Hepatocellular Carcinoma in Wistar Rats**<sup>1</sup>Ricadonna Raissa, <sup>2</sup>Wibi Riawan, <sup>3</sup>Anna Safitri, <sup>4</sup>Ma Asuncion Guiang Beltran, <sup>5</sup>Aulanni'am Aulanni'am\*<sup>1,3</sup> Department of Chemistry, Faculty of Mathematics and Natural Science, Universitas Brawijaya, Malang, Indonesia<sup>2</sup>Faculty of Medicine, Universitas Brawijaya, Malang, Indonesia<sup>4</sup> College of Veterinary Medicine, Tarlac Agricultural University, Camiling, Tarlac, Philippines<sup>5</sup>Faculty of Veterinary Medicine, Universitas Brawijaya, Malang, Indonesia

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**ABSTRACT** - Hepatocellular carcinoma (HCC) is a common malignant primary liver cancer and has high rate of mortality. Exploration of local herbal as a chemo-preventive drug has been conducted. The present study aimed to study the chemo-protective effect of hydroethanolic extracts of *Azadirachta indica* from Indonesia (HEAI) and the Philippines (HEAIP) on diethylnitrosamine (DEN)-induced HCC Wistar rat model. Tissue-CD166/VEGF/FGF2/YAP were evaluated using immunohistochemistry. CD166/VEGF/FGF2/YAP were down-regulated in HCC treated with

HEAII and HEAIP compare to that HCC non-treatment. Liver function, aminotransferase (AST) and aminotransferase (ALT) activities were evaluated from serum. Cut-off value AST and ALT were abnormal in about 90% of the HCC non-treatment and decrease to normal in about 70% of the HCC treatment. These results indicated that both extracts were found to possess high chemo-protective in HCC.

**Keywords:** hepatocellular carcinoma; *Azadirachta indica*; cluster differential 166; fibroblast growth factor 2; yes, associated protein; vascular endothelial growth factor

MH-1207-304

ROOM: BRI-10

13:30 - 13:40

### Effectiveness of Peer Readiness Training in Improving Girls Student's Adherence to Weekly Iron Folic Acid Supplementation

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**Abstract** - Student peer communities at schools can be determinants of changes in student's behavior. Peer communities need to be prepared through training to improve their motivation, knowledge, attitudes, and readiness at schools. This study analyzed the effectivity of peer community readiness training to improve the level of school readiness and its impact to female high-school students anaemia status and adherence to consume weekly iron folic acid supplementation (WIFAS) in Depok. This study used a cluster randomized trial study design. The Anti-Anemia Squad as much as 24 students from 6 sample schools was given training on anemia prevention programmes for female adolescent. The average age of Anti-Anemia Squad members was 16.2 years and they were female. After training there were significant differences between before and after Anti-Anemia Squad's knowledge score ( $\bar{x}_{pre} = 11,12 \pm 1,963$ ;  $\bar{x}_{post} = 18,29 \pm 2,956$ ;  $p = 0,000$ ). The number of respondents were 416 students from 6 intervention groups and 5 control groups. After training there were differences in school readiness score to implement WIFAS, Vitamin C intake, Vitamin A intake, tea and coffee consumption and high-school female adherence to consume WIFAS and Hb levels between high-school girl student of sample schools and control schools ( $p=0,000$ ;  $p= 0,005$ ;  $p=0,018$ ;  $p=0,001$ ;  $p=0,000$   $p=0,008$ ;  $p=0,005$ ). There were no differences between knowledge scores and attitudes on anemia, iron intake, milk and heartburn medication consumptions in both sample and control schools ( $p= 0,282$ ;  $p=0,662$ ;  $p=0,274$ ;  $p=0,124$ ;  $p=0,052$ ). Peer communities are effective to improve school readiness to implement WIFAS which impact to female students' adherence to consume WIFAS

**Keywords:** anaemia; adherence; consumption; iron consumption; peer community

MH-1207-327

ROOM: BRI-10

13:40 - 13:50

### The Factors Explaining the Prevalence of ARI in Indonesia (*Indonesia Family Life Survey 2015*)

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**Abstract** - cute Respiratory Infection (ARI) is a type of disease that is still a major cause of illness and death in children, especially in developing countries. This study aims to determine the factors that explain the prevalence of children with ARI in Indonesia. The method used is binary logistic regression analysis which is a method to get the best and simplest model to explain the relationship between response variables with predictor variables. The results showed that risk factors related to household characteristics including the availability of ventilation, piles of garbage around the house, cattle sheds around the house, location of kitchens and rooms in one room and house cleanliness, and smoking habits in family members can explain the prevalence of children with ARI in Indonesia. The model formed with six predictor variables is a fit or feasible model to be used with a percentage of 84.4%.

**Keywords:** ARI, Child, Binary Logistic Regression.

MH-1207-350

ROOM: BRI-10

13:50 - 14:00

### Neural Network Based Arrhythmia Detection Using Photoplethysmogram; Can It Replace ECG signal?

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**Abstract** - Arrhythmia is a heart rhythm disorder that is characterized by changes in the speed and electrical signal pattern of the heart. Besides using Electrocardiogram (ECG), arrhythmia can also be detected using Photoplethysmogram (PPG). European Heart Rhythm Association (EHRA) consensus document mentioned the position of smart watch and handled device as the screening tools of atrial fibrillation (AF). This wearable device has advantage of easy accessibility. However, accuracy of this tools needs to be evaluated. Researches on

arrhythmia based on PPG are very limited in literature. It may cause the benefits of using PPG for arrhythmia detection is not widely known. This study explores the possibility of using PPG to detect several types of arrhythmias, which are frequently occurred in patients with heart disease, namely Premature Ventricular Contraction (PVC) and Premature Atrial Contraction (PAC). Several stages to achieve the objectives of the research is developed using MIMIC. MIMIC is a freely accessible critical care database from physionet that contains both PPG and ECG data. The method is validated by comparing the PP of PPG with the RR interval of the corresponding ECG signal. Classification of the featured data using Artificial Neural Network (ANN)-based multi-class classification for detecting Normal, PAC and PVC. The performance analysis on the detection method is validated by dividing training and testing dataset in 10-Fold Cross Validation. Using the method above, the detection accuracy on both training and testing stages are 75% and 84.09%, respectively. While the specificity of the detection is 84.10%.

**Keywords:** arrhythmia; photoplethysmogram; artificial neural network

MH-1207-359

ROOM: BRI-10

14:00 - 14:10

### Causes of Maternal Mortality in Indonesia

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**Abstract - Background:** Maternal mortality remains a challenge in most developing countries. WHO reported in 2017 that on daily basis; 810 women died of preventable causes related to pregnancy and childbirth? However, between 2000 – 2017 a significant reduction was noticed in maternal mortality figures by 38% of 100,000 maternal deaths of live birth; in which 94% occurred in low- and middle-income countries and Indonesia is no exception to that. According to a UNDP report, the risk of maternal death in Indonesia is 1 in 65 mothers as compared to 1 in 1,100 mothers in Thailand. To reduce maternal death; it is necessary to examine the causes of maternal death.

**Objectives:** The aim of the paper is to determine the causes and current maternal mortality ratio in Indonesia by identifying the challenges in the health service delivery and provide some recommendations or strategies to further reduce the maternal mortality ratio in Indonesia. **Methodology:** This paper took the form of systematic literature review in which reports from the ministry of health in Indonesia, peer review journals, and studies by WHO or other international organizations were reviewed to examine maternal deaths in Indonesia from 2014 to 2019. **Findings:** The maternal mortality ratios according to regions were as follows: Sulawesi at 65 per 100,000 live births, Kalimantan at 52 per 100,000 live births, Eastern Indonesia at 49 per 100,000 live births, Sumatra at 38 per 100,000 live births, Java-Bali at 33 per 100,000 live births. The major causes of maternal death were Post-partum hemorrhage 20.3% eclampsia 16.2%, hypertension and Edema disorder 9.2% and pre-eclampsia 7.1%. **Conclusion:** The findings revealed that the highest cause of maternal death was post-partum haemorrhage which is preventable therefore emphasizing the importance of active management of third stage of labour as well as utilization of antenatal care services during which risk factors can be screened for and properly managed.

**Keywords:** Maternal mortality; causes; Indonesia; live birth; death.

MH-1207-367

ROOM: BRI-10

14:10 – 14:20

### Prediction of Hypertension Risk Based on Sugar, Salt, and Fat Consumption Using Local Linear Estimator

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**Abstract -** Hypertension or high blood pressure, is a blood pressure caused by blood pressure in the blood vessel walls or arteries at the time of being pumped by the heart. Based on data from the National Health Indicator Survey in 2016 the prevalence of hypertension in Indonesia based on the results of measurements in the population aged 18 years and over is 32.4%. Meanwhile, the data of basic health research 2018 showed an increase in the prevalence of hypertension in the population aged 18 years and over is 34.1%. One factor is causing hypertension is food intake. This study models and predicts the risk of hypertension based on consumption factors are sugar, salt, and fat. Data was collected in May 2019 at the Hajj General Hospital in Surabaya. The prediction of hypertension risk is obtained from the nonparametric logistic regression model using local linear estimator. Analysis of hypertension risk models using 30 in sample data with 15 people with hypertension ( $Y = 1$ ) and 15 people not suffering from hypertension ( $Y = 0$ ) resulted in a classification accuracy of 80%. Prediction of the risk of hypertension using 10 data out sample with 5 people with hypertension and 5 people not suffering from hypertension resulted in a classification accuracy of 80%. Based on the result, it can be concluded that the local linear estimator can be used to model and predict the risk of hypertension based on sugar, salt, and fat consumption.

**Keywords:** hypertension; consumption; logistic regression; local linear.

MH-1207-397

ROOM: BRI-10

14:20 – 14:30

**Analysis of Factors Affecting Toddler Mortality in Indonesia (Secondary Data of IDHS 2017)**<sup>1</sup>Licensia Triani Dameria Simbolon, <sup>2</sup>Tris Eryando<sup>1,2</sup> Departemen Biostatistika dan Kependudukan Universitas Indonesia<sup>1</sup>trianidameria13@gmail.com\*

**Abstract - Background:** Infant and under five mortality rates are still one of the factors used to describe the health status of a country's society. In 2018, according to research conducted by UNICEF revealed that 2.6 million babies each year are unable to survive with the highest contribution coming from the Sub-Saharan Africa and Southeast Asia. That is, according to the global infant mortality report mentioned that there were 29 deaths per 1,000 births. Then what about in Indonesia? Based on 2017 IDHS data, there has been a decline in infant mortality in Indonesia, which is 24 deaths per 1,000 live births, compared to the 2012 IDHS data, 35 deaths per 1,000 live births. However, this is still considered a red report card in terms of reducing the incidence of infant mortality throughout Indonesia. With additional records from BPS which state that babies born in 2018 actually have a life expectancy of up to 71.2 years. **Method:** This study uses a correlation test design study. The independent variables discussed are data based on the 2017 IDHS, including the following: maternal and infant factors, demographic factors, and disease control factors. **Results:** From the results of the analysis it was found that the independent variables that have a correlation with the high incidence of infant and toddler mortality in Indonesia are infant weight less than 2,500 grams, ANC frequency less than 4 times during pregnancy, birth attendants by health workers. While those that did not provide a significant correlation were mother's education, sex of the toddler, and residence.

**Keywords:** Infant Death; Toddler; Health

MH-1202-197

ROOM: BRI-10

14:30 – 14:40

**Abstractdiology and Outcome Tuberculosis Meningitis Between HIV and Non-HIV Patient at ATertier Refferal Hospital in Indonesia**<sup>1</sup>B. Munir\*, <sup>2</sup>Rianawati SB, <sup>3</sup>Raisa N<sup>1</sup>Neuroinfection-neuroimmunology Division Medical Faculty, University of Brawijaya-Saiful Anwar Hospital Malang<sup>2,3</sup>Neurology staff at Medical Faculty, Brawijaya University-Saiful Anwar Hospital Malang<sup>1</sup>badroel2007@ub.ac.id

**Abstract - Background:** Tuberculous meningoencephalitis (TM) has various clinical manifestation, radiology, and laboratory finding, but it is not clear deferential TM between HIV positif and HIV negatif especially in Indonesia. **Objective:** To know comparee clinical feature, laboratory, radiology and outcome tuberculosis meningitis between HIV and non-HIV patient in a tertier referral Hospital in Indonesia. **Method:** Longitudinal observasy study, all patients tuberculosis meningitis were hospitalized at Saiful Anwar general hospital Malang Indonesia for 24 months (January 2017-December 2018), consecutive sampling with inclusion criteria : age > 15 yo, perform lumbar puncti and head CT scan or MRI, Exclusion criteria is re-hospitalized patient Diagnosed of TM based on Lancet criteria; definitive, probable and possible. Severe disease based on British Medical Council (BMC). And parameter outcome is modified Rankin Scale (mRS). This study was approved by ethical clearance committee Saiful Anwar Hospital. **Result:** Fifty-one sample, mean 34 yo (15-78), man 61%, serology HIV positive 11%. clinical feature in HIV positif and HIV negatif patient : headache 80% vs 33,3 % vs (p 0,04), febrile 64% vs 33,3% (p;0,03) decrease of consciousness 94% vs 100%, focal deficit 26,6 % vs 16,6%. Radiology finding gonadilium enhancement 55,5% vs 50%. Hydrocephalus: 24,4% vs 16,6%. Tuberculoma: 33,3% vs 4,5%. Liquor cerebro spinal examination : leucocytosis 39% vs 100 %. Limphocyt > 5/uL : 39% vs 100%. Ratio glucose-serum > 0,6 : 8,8% vs 0%. Protein > 40 : 37,7% vs 0%. Modified rankin scale VI (death): 35% Vs 33,3%. Conclude: Febrile, headache and ratio glucose LCS –serum, protein LCS, lecoucyt LCS, tuberculoma cerebri are significant deferent between patient with HIV positif and HIV negatif in Meningoenchepalitis Tubercolous.

**Keywords:** -

DE-1207-335

ROOM: BRI-10

14:40 – 14:50

**CAPE Flavonoid Decrease the Expression of RelA in Traumatic Ulcer Diabetic Mouse Model**<sup>1</sup>Ronden Perwiradinata, <sup>2</sup>Adiastuti Endah Parmadianti, <sup>3</sup>Desiana Radithia, <sup>4</sup>Diah Savitri Ernawati, <sup>5</sup>Bagoes Soebadi, <sup>6</sup>A. Retno Pudji Rahayu, <sup>7</sup>Ade Puspa Sari, <sup>8</sup>Hastin Sofyana<sup>1</sup>Resident of Oral Medicine Specialistic Programme, Faculty of Dental Medicine, University of Airlangga, 60132 Surabaya<sup>2,3,4,5</sup>Lecturer of Oral Medicine Department, Faculty of Dental Medicine, University of Airlangga, 60132 Surabaya<sup>6</sup>Lecturer of Oral and Maxillofacial Pathology Department, Faculty of Dental Medicine, University of Airlangga, 60132 Surabaya<sup>7</sup>Oral Medicine Specialist at RSUP Dr. Mohammad Hoesin, 30126 Palembang<sup>8</sup>Oral Medicine Specialist at RSUD Kab. Barru, 90711 South Sulawesi

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**Abstract** - According to International Diabetes Federation (IDF) report in 2019, Indonesia ranked 7th in top 10 countries for number of adults (20–79 years) with diabetes. People with diabetes have increased risk of inflammation due to hyperglycemia. Hyperglycemia induces high level of Advanced Glycosylation End Products (AGEs), receptors for AGEs (RAGE), Reactive Oxidative Stress (ROS) and RelA which contribute to prolong inflammation. Furthermore, the strategic objective of WHO Traditional Medicine Strategy for 2014–2023 is to promote universal health coverage by integrating Traditional and Complementary Medicine (T&CM) services into health care service delivery and self-health care. This research sought to establish the effect of Caffeic Acid Phenethyl Ester (CAPE) Flavonoid, which found in propolis, as an anti-inflammatory on the expression of RelA in inflammation stage. This was an original experimental research design featuring posttest-only control groups. Twenty-seven male mice were distributed equally into 3 experimental groups: First group, nondiabetic mice; Second group, diabetic mice; and Third group, treated diabetic mice with CAPE flavonoid. The expression of RelA was observed on day 1, 3, and 5 by means of histology and immunohistochemistry with mouse monoclonal IgG (RelA, Santa Cruz Biotechnology, Inc, sc-8008). CAPE Flavonoid decreases the expression of RelA in diabetic mouse model. The ANOVA test results indicated a significant difference ( $P < 0.05$ ) in the expression of RelA in treated group at day 3 ( $p = 0.002$ ) and day 5 ( $p = 0.000$ ). CAPE Flavonoid have a potential role for alternative medication for inflammatory disorder in diabetes.

**Keywords:** CAPE Flavonoid; RelA; Diabetes Mellitus; Inflammation; Rattus Norvegicus.



CI-1111-015

ROOM: BRI-11

13:30 - 13:40

**Performance Accuracy Method of Machine Learning for Diabetes Prediction**<sup>1</sup>Dwi Harini Sulistyawati, <sup>2</sup>Ali Murtadho<sup>1</sup>Department of Computer Science & Engineering, University 17 August 1945 Surabaya<sup>2</sup>University Students in Informatics Engineering 17 August 1945 Surabaya<sup>1</sup>*Dwiharini@untag-sby.ac.id*; <sup>2</sup>*Id.alimurtadho@gmail.com*

**Abstract** - Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning (ML) techniques allow us to obtain predictively, the dataset we are testing is pima-indian-diabetes with a dataset of 765 raw data with 8 data features and 1 data label we developed a method to achieve the best accuracy from the 5 methods we use with the stages of separation training and testing the dataset, scaling features, parameters evaluation, confusion matrix and we get the accuracy of each method, and the results of the accuracy we get with these 5 methods *Gradient-boosting* is best with an accuracy score of 0.8, *Decision Tree* 0.72, *Random Forest* 0.72, next is *Logistic Regression* 0.7, and then followed by *K-NN* method with a score of 0.65.

**Keywords:** Machine Learning Prediction Diabetes, Performa Accuracy Method, Supervised Learning, AI (Artificial Intelligence)

CI-1112-017

ROOM: BRI-11

13:40 - 13:50

**3D Virtual Gallery Modelling Combining Photo Panorama for Information Media Hindu Buddha Temple In West Java**<sup>1</sup>Ayung Candra Padmasari\*, <sup>2</sup>Asyifa Imanda Septiana, <sup>3</sup>Asep Herry Hernawan<sup>1</sup>Pendidikan Multimedia, Indonesia University of Education,<sup>2</sup>Software Engineering, Indonesia University of Education,<sup>3</sup>Teknologi Pendidikan, Indonesia University of Education,<sup>1</sup>*ayungcandra@upi.edu*; <sup>2</sup>*asyifa@upi.edu*; <sup>3</sup>*Asepherry@upi.edu*

**Abstract** - The need for innovative media in the Industrial Revolution 4.0 era become a new necessity and challenge especially looking at cultural and historical potential which must remain preserved along with the times and technology. Designing new media previously designed conventionally related to historical information on West Java about Hindu Buddha Temples become a new innovation to create information media for digital age. Historical information on Hindu Buddhist temples is basically very interesting learning to be known by everyone, both teenage children and the general public, because the history of Hindu Buddhist temples includes sacred buildings from Indonesian classical relics that are used as a place of worship by historical society of Hindu Buddha. This research aims to design a 3D gallery design combining photo panorama as an innovation media in conveying information related to the history of Hindu Buddhist temples. The method used in this research is Design and Development (D&D). The results of this study are 3D modeling and photo assets. The texturing object was produced from 9 photos and 2 panoramic photos with the aim of displaying a realistic visualization of a 3D gallery to display an interesting interior photo of the Hindu Buddha Temple.

**Keywords:** Virtual 3D; Gallery; Temple; Panorama Photos

CI-1120-063

ROOM: BRI-11

13:50 - 14:00

**Sentiment Analysis on Ratu Boko Temple Tourist Perceptions Based on Review Content on TripAdvisor Website**<sup>1</sup>Edy Widodo\*, <sup>2</sup>Mega <sup>2</sup>Luna Suliztia, <sup>3</sup>Putri Choirunisa, <sup>4</sup>Rizka Yolanda Werdiningsih Wiyono<sup>1,2,3,4</sup>Department of Statistics, Islamic University of Indonesia<sup>1</sup>*edywidodo@uii.ac.id*; <sup>2</sup>*16611079@students.uui.ac.id*; <sup>3</sup>*16611084@students.uui.ac.id*; <sup>4</sup>*16611083@students.uui.ac.id*

**Abstract** - The presence of the internet in human life makes it easy for people to access the information needed. Traveling as a second priority for Indonesians is also influenced by social media. One application to help tourists on vacation is TripAdvisor. TripAdvisor is the largest travel site in the world that helps tourists to plan and book their trips. Yogyakarta as a region that rich in natural beauty and historical tourism has made it become the biggest tourist destination in Indonesia after Bali. One of the historical attractions in Yogyakarta is Ratu Boko. Considering the importance of the information contained in the opinion to explore information from it, this study wants to know the tourist's opinion about Ratu Boko Temple that can be used as information related to the lack of interest of tourists visiting. To get results that can be seen clearly, sentiment analysis of the tourist opinions in this study is used the SVM method. The data of tourist opinion of Ratu Boko Temple were obtained using web scrapping technique. The data used in this study is the review data of the Ratu Boko Temple on the TripAdvisor website from January 1<sup>st</sup>, 2018 to November 16<sup>th</sup>, 2019. Based on the results of the analysis it is known that tourists' sentiments are positive. The component that is commented relates to the beauty of the sunset at Ratu Boko temple while negative comments include expensive entrance fees and temple cleanliness.

**Keywords:** Ratu Boko Temple; Review; Sentiment Analysis; SVM; TripAdvisor.

CI-1126-094

ROOM: BRI-11

14:00 - 14:10

**Reptile Recognition based on Convolutional Neural Network**<sup>1</sup>Condro Kartiko, <sup>2</sup>Elisa Usada, <sup>3</sup>Agi Prasetyadi<sup>1,2,3</sup> Department of Software Engineering at Institut Teknologi Telkom Purwokerto<sup>1</sup>*condro.kartiko@ittelkom-pwt.ac.id*; <sup>2</sup>*elisa@ittelkom-pwt.ac.id*; <sup>3</sup>*agi@ittelkom-pwt.ac.id*

**Abstract** - Indonesian people are less interested in reptile animals. These are because most Indonesian people have the mindset that reptiles are difficult to tame and are focused on things about the ferocity of these animals in their natural habitat. Therefore, it is necessary to have the means to identify reptile objects as one of the educational tools for introducing reptiles to the public. This research aims to produce a specialized Convolutional Neural Network model for recognizing reptile species. We also expand the model for recognizing another reptile species such as Snake, Crocodile, Turtle, and Gecko. Thousands of reptile images are being trained inside our model in order to obtain a kernel that can be used to automate reptile species recognition based on ordinary camera images. Our model currently reaches 64,3% accuracy for detecting 14 different species. Finally, as suggestion for the next research, further enrichment especially from background extraction process, is needed to increase the accuracy of reptile detection.

**Keywords:** Reptile; Snake; Species Recognition; Automatic Detection; Convolutional Neural Network;

CI-1127-098

ROOM: BRI-11

14:10 - 14:20

**Data Preparation for Classifying Student Dropout in Duta Bangsa University**<sup>1</sup>Nurmalitasari, <sup>2</sup>Zalizah Awang Long, <sup>3</sup>M Faizuddin MD Noor<sup>1,2,3</sup> Malaysian Institute Information Technology, Universiti Kuala Lumpur, Malaysia<sup>2</sup> Faculty of Computer Science, Duta Bangsa University, Indonesia<sup>1</sup>*nurmalitasari@udb.ac.id*, *nurmalitasari@s.unikl.edu.my*; <sup>2</sup>*zalizah@unikl.edu.my*; <sup>3</sup>*mfaizuddin@unikl.edu.my*

**Abstract** - Predictive learning analysis (PLA) are the current trend to support learning processes. One of the main issues in education particularly in higher education (HE) is high numbers of dropout. There are little evidences being identified the variables contributing toward dropout during study period. The dropout are the major challenges of educational institutions as it concerns in the education cost and policy-making communities. The number of dropout students at Duta Bangsa University are in high alarm for both management and also educator in Duta Bangsa. Preventing educational dropout are the major challenges to Duta Bangsa University. In this study, data preparation is an important step in PLA processes, the main objective is to reduce noise and increase the accuracy and consistency of data before PLA executed. The paper presents a data preparation for classifying student dropout in Duta Bangsa University. The preparation data on this paper consist of four steps: (1) Normalization, (2) Data Cleansing, (3) Future Selection, and (4) Data Transformation. The results of this study are accurate and consistent historical dropout data Duta Bangsa University. Furthermore, the paper highlights open challenges for future research directions.

**Keywords:** Dropout, Data Preparation, Predictive Learning Analysis Duta Bangsa University

CI-1127-107

ROOM: BRI-11

14:20 - 14:30

**Analyze Clustering Province Based on Indicator of Social Welfare Using Self Organizing Maps (SOM) Clustering Algorithm**<sup>1</sup>Septian Wulandari, <sup>2</sup>Nurfidah Dwitiyanti<sup>1,2</sup> Universitas Indraprasta PGRI<sup>1</sup>*septian.pmb09@rocketmail.com*; <sup>2</sup>*nurfidah.pulungan@gmail.com*

**Abstract** - The population of Indonesia from year to year has increased. However, the increase in Indonesia's population must also be accompanied by increased economic growth. The increase in economic growth is characterized by a reduction in the amount of poverty in Indonesia, jobs, and an increase in social welfare indicators. Improving social welfare can't be separated from the accuracy of government targets for determining policies and programs to get an overview of the problems of social welfare in Indonesian. This research to analyze the clustering province was conducted based on social welfare indicators using the Self Organizing Maps (SOM) clustering algorithm. The data used are indicators of social welfare in 2017 obtained from the Badan Pusat Statistik include population density (KP), percentage of poor population (PPM), growth rate (LP), infant mortality rate (IMR), life expectancy (AHP), school participation rate (APS), labor force participation rate (TPAK), the open unemployment rate (TPT), and the average capital expenditure (RPP). There are four stages, which are collecting 34 provinces based on welfare indicators in Indonesia, normalizing data, clustering using Self Organizing Maps (SOM) algorithm, and analyzing clustering results. The results are three clusters: low cluster level (C1), high cluster level (C2), and medium cluster level (C3). The results of the cluster C1 were 9 provinces, Kep. Riau, Kep. Bangka, Kalimantan Tengah, Kalimantan Selatan, Riau, Banten, Sulawesi Barat, Papua Barat, and Maluku Utara, clusters C2 is DKI Jakarta, and clusters C3 are 24 provinces. Based on the results of the clustering can be input for the government to improve the welfare of the people in Indonesia.

**Keywords:** Data Mining; Social Welfare; SOM; Clustering

CI-1206-280

ROOM: BRI-11

14:30 - 14:40

### Comparison of Classification Methods for Handling Data Imbalanced in Dataset of Public Complaints SMS based Using the SMOTE Approach

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**Abstract** - Public complaints using short message service (SMS) is one of the media used by the public in delivering suggestions, criticisms, and complaints about the government to improve the quality of public services. However, the SMS must be classified before being forwarded to the relevant agencies according to their authority so that it can be followed up. This research will classify the SMS content of public complaints into the appropriate agencies. Nevertheless, data imbalance is one of the problems that often founded in the classification, where the amount of data is small and the classifications is many, which is called multi-class. To handling this problem, this research tries to find methods including preprocessing by using case folding, tokenizing, stop word removal, and stemming, feature extraction by varying the n-grams, oversampling by using SMOTE, and classification using SVM, Naive Bayes, and KNN. Testing is done using 60% training data and 40% testing data. The results showed that the best accuracy is obtained at 73.13% when the n-gram feature extraction (1.3) combined with the SVM classification method. In addition, by combining SMOTE techniques and SVM methods for data imbalance conditions, the accuracy increases to 76.12%. Thus, the application of the SMOTE technique with the SVM method can handle data imbalance in the classification of SMS content of public complaints compared to the Naïve Bayes and KNN methods.

**Keywords:** Short Message Service, Classification, Data Imbalance, SMOTE.

CI-1209-404

ROOM: BRI-11

14:40 - 14:50

### Blockchain Based Warehouse Supply Chain Management using Hyperledger Fabric and Hyperledger Composer

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**Abstract** - This research discuss how smart transactions on the blockchain can work, and how a system that currently exists can be implemented into the blockchain system by using Hyperledger Blockchain. The process that goes through is to determine the business model needed, then redesigning the business model to be applied to the blockchain system using Hyperledger Composer. The system is implemented by initiating the first two organizations and continued by joining the last organization into the system to test the scalability of the system that has been designed. The results of this study prove that the blockchain was successfully implemented into the supply chain management system by using Hyperledger fabric and Hyperledger composer. Read access has the fastest duration, which is 33% faster than Create, 69% compared to Delete, and 82% compared to Update. Updates have the longest average duration of data access. Besides that, Query greatly slows down the duration of data access Read function with the average duration of data access Read function in category 10 material rose to 12238.9%, in category 100 material rose by 1950% and in category 1000 material increased by 308% compared to the duration of data access function Read without using a query.

**Keywords:** Hyperledger Fabric; Hyperledger Composer; Blockchain, Smart Contract.

CI-1129-151

ROOM: BRI-11

14:50 - 15:00

### Analyze K-Value Selected Method of K-Means Clustering Algorithm to Clustering Province Based on Disease Case

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**Abstract** - Disease cases throughout Indonesia has increased as seen from the Indeks Pembangunan Masyarakat (IPKM). Globalization has the effect of increasing human mobility across provinces, thus accelerating the process of spreading epidemics that could pose a threat for Indonesia. The speed of action from government is needed to reducing the level if outbreaks of the disease. For this reason, accuracy from the government is needed to solving these problems. The data were taken from data disease cases in 2015 which consisted of 34 provinces in Indonesia based on the Badan Pusat Statistik. In K-Means clustering, determining of K-value is needed because it affects in convergence results. To solve this problem, this research analyzes three methods of K-Value, there are Sillhouette, Elbow, and Gap Statistics Methods. The result of testing three methods of determining K-value obtained execution times on Sillhouette 13.09s, Elbow 14.76s, and Gap Statistics 20.28s. So, choosing Silhouette method produces 2 optimal clusters, there are low cluster level (C1) and high cluster level (C2). The correlation matrix to understand the relationship between each disease is performed and a value of 0.88 is obtained there is the strong linear correlation between Pneumonia and Pulmonary TB. Then, modeling the relationship between these two variables

by fitting linear equations. The results of C1 cluster based on disease cases were obtained 32 provinces and for C2 cluster were 2 provinces there are West Java and East Java. Based on the results of the clustering can be input to the Indonesian government to tackle disease cases in all provinces in Indonesia.

**Keywords:** Data Mining; Disease; K-Value; K-Means; Clustering

**CI-1201-186**

**ROOM: BRI-11**

**15:05 - 15:15**

### **Development of Digital Document Centralization System by Utilizing Cloud Technology**

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**Abstract** - The high availability of physical documents in a company forced to increase the storage media in the form of hardcopy. Along with the development of technology that offers various kinds of convenience to users, it provides the possibility to create a multiuser accessible system with unlimited storage limits that can store various kinds of documents in digital form so as to facilitate user access and improve document security. The development of cloud technology is one solution that can be utilized to accommodate this research. Unlimited access with rules of access rights combined with unlimited unlimited storage makes this research feasible to develop. This research raises a case study in a private tertiary institution that has many units with a variety of physical documents available, on the other hand it requires coordination both internally and with other cross-units. This research aims to produce a system that is able to accommodate these needs without involving many resources.

**Keywords:** -

**CI-1204-229**

**ROOM: BRI-11**

**15:15 - 15:25**

### **Prediction Preventative Measures for Coronary Heart Patients Using K-Nearest Neighbor Algorithm**

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**Abstract** - According to data from the World Health Organization (WHO), heart disease is the number 1 cause of death in the world, which causes 17.9 million deaths each year. In Indonesia, heart disease also tends to increase as a cause of death; in 2008, a cardiovascular disease caused around 17.3 million deaths. Cardiovascular disease is a disease caused by impaired heart and blood vessel function. There are many types of cardiovascular disease, but the most common and most well-known are coronary heart disease and stroke. This disease occurs when blood flow to the heart muscle stops or becomes blocked, resulting in severe damage to the heart. This study was conducted to determine medical procedures suitable for cardiac patients based on age, sex, and diagnosis. This study uses the K-Nearest Neighbor (K-NN) algorithm, using a dataset from the heart catheterization unit of RSUP DR. M. Djamil Padang, West Sumatra. This study used 875 heart disease patient data in 2014. Based on the dataset, there are 16 types of preventative measures for cardiac patients, and the data are categorical, need to be preprocessed with the K-NN algorithm to get the best results, the research results obtained an accuracy value of 64%. Featuring the K-KN algorithm can be used to determine the type of preventative measures for coronary heart patients.

**Keywords:** Cause of death, heart disease; cardiovascular disease; K-Nearest Neighbor (K-NN); categorical data.

**CI-1118-056**

**ROOM: BRI-11**

**15:25 - 15:35**

### **Rainfall Prediction in Banjarbaru and Banjarmasin Through Artificial Neural Network**

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**Abstract** - People within agriculture sector need high information about rainfall which will occur since it influences length of planting period to the obtained production. Meanwhile, BMKG weather forecast published to society still predicts only on the weather instead of rainfall. BMKG has data of rainfall and prediction from several scholars but they have not been optimally utilized as expected - predictive information. Therefore, there is a need of accurate method to provide expected accuracy value. Because rainfall is included into series of time so it could be analyzed and predicted by statistics approach or soft-computing approach, such as neural network. Meanwhile, in Artificial Neural Network, Wavelet Transformation is a transformational method based on signal. Wavelet is sensitive to frequency changes and could determine the time during frequency change occurrence. Therefore, Wavelet transformation would be used to improve values of neural interconnection in different layers. Therefore, there is a need of Wavelet Neural Network (WNN) algorithm as an approach to predict rainfall.

**Keywords:** rainfall; artificial neural network; wavelet; serial time prediction

**CI-1207-379**

**ROOM: BRI-11**

**15:35 - 15:45**

### A Mobile application of Modern Physics Experiments

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**Abstract** - The industrial revolution 4.0 requires lecturers at universities to be more innovative, because their rapid digital and technological development demands an adaptive curriculum that is able to follow these developments. In this research virtual reality technology has been developed based on cellular applications for the purpose of the understanding easier on modern physics concepts and practicum. Modern physics was chosen because it is one of the topics in physics that is difficult to be understood. Besides the concept is abstract and some parts require special attention in conducting experiments, such as requiring expensive equipment or dangerous body (such as radioactive material and ionizing radiation). The application was developed using HTML5 and an Android system based on Java. The Java language is mainly used for image processing. The application is made based on photo images from practicum tools. The image is then processed so that it can be moved, can interact virtually, and can provide responses in accordance with the concepts or models of appropriate physical laws. With this application students can do modern physics practicum and learn the concepts of modern physics especially those of an abstract nature that can be understood more easily. Besides that, practicum and learning can be done anywhere without being bound by time and space. To get psychomotor students can come to the modern physics laboratory and do real practicum more steadily because they have practiced virtually, so that the risk of device damage and the dangerous objects can be minimized.

**Keywords:** Mobile Application; Modern Physics; Experiment; Virtual Reality.

CI-1207-387

ROOM: BRI-11

15:45 - 15:55

### Mosfet Driver Limitation on Mosfet H-Bridge Exciter

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**Abstract** - IR2083 is a MOSFET driver for high and low side MOSFETs. For low frequencies, this driver usually cannot work. For low frequencies, the output is always low. Normal TTL logic level cannot change the output driver. The signal result is not accordingly with data sheet timing diagram for low frequency. Geoelectric exploration requires an interrupted DC for the current exciter for a few seconds, and reverses polarity in a few seconds, and turns off a few seconds between them. The H-Bridge circuit is an economical circuit for an exciter, but IR2083 cannot work at low frequencies. Another case, the H-Bridge circuit cannot work at high frequencies. When the H-Bridge MOSFET is driven with a single transistor, the drain is too late for the gate driver response. The IR2083 application is also very good for high frequencies, but short circuits will occur at high frequencies on the MOSFET H-Bridge. This study aims to find the limits of low frequency and high frequency for the Mosfet H-Bridge circuit with IR2083 or family. In this study, researchers have found that 15 Hz is the lowest frequency caused by the MOSFET driver, and 860 KHz is the highest frequency caused by the Mosfet H-Bridge circuit.

**Keywords:** Mosfet, H-Bridge, exciter

CI-1203-211

ROOM: BRI-12

13:30 - 13:40

### Design Simulation of Multi -Cell Hexagonal Crash Box with Holes under Frontal Load

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**Abstract** - Crash box is a passive safety device located between the bumper and the frame on the car. The crash box was developed to reduce the absorption energy. Crash box models have been developed with variation of rectangular, square, circular, hexagonal and octagonal cross-section. In this study, hexagonal cross-section using two components namely the inner wall and the outer wall called multi-cell hexagonal crash box is investigated. The addition of holes in the crash box is designed to facilitate reduce the buckling load and more folding. The purpose of this study was to determine the effect of hole position distance on deformation patterns and energy absorption under the frontal loading model. The method used is crash box modelling by utilizing computer simulations with ANSYS 17.0 software based on the finite element method. The hole position distance are varied by 37.5 mm, 75 mm and 112.5 mm. The upper rigid wall moved downwards with a constant velocity of 7.67 m/s for distance of 100 mm. The results showed that the hole position distance produced the difference on absorption energy. The hole position distance on 112.5 mm can absorb much more crash energy than other hole position distances. All models produce the similar deformation patterns. Based on the force-displacement curve, it can be denoted that the initial peak load on 112.5 mm hole position distance produce lower value connected with the first folding is occurred on the hole.

**Keywords:** Multi-Cell hexagonal crash box; Hole position distance; Deformation patterns; Energy absorption

CI-1203-214

ROOM: BRI-12

13:40 - 13:50

### User Acceptance of Knowledge Capture System: A Case Study in Agency for the Assessment and Application of Technology

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**Abstract** - As one of the research institutions in Indonesia, role of knowledge management system (KMS) including its process such as knowledge capture is pivotal in Agency for the Assessment and Application of Technology (BPPT). However, earlier observation showed that participation of users in KMS was low. This study aims to identify factors that influence users to use knowledge capture system in BPPT and give recommendation to its top management about the findings. To achieve this goal, the research question in this study is what are the factors that influence intention of use of knowledge capture system. The hypothesis in this study is built using the technology acceptance model as its base. This study collected data using survey and analyzed its result using a PLS-SEM based tool that is called SmartPLS. The results of this study showed that 6 hypotheses were rejected and 6 hypotheses were accepted. Attitude toward using and perceived usefulness influences positively the intention of users to use knowledge capture system. Meanwhile, attitude toward using is influenced positively by perceived usefulness and perceived ease of use, and both factors are influenced positively by information quality and service quality consecutively. This result showed different accepted hypotheses compared to similar acceptance model. Finally, this study summarized some recommendations based on the accepted hypotheses.

**Keywords:** knowledge capture; user acceptance; technology acceptance model

CI-1205-232

ROOM: BRI-12

13:50 - 14:00

### Organizational Culture Analysis for Knowledge Management: A Case Study on Ministry of Trade of the Republic of Indonesia

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**Abstract** - Knowledge has become an important asset that government organization such Ministry of Trade (MoT) should manage in order to achieve organization's goal and objectives. Organizational culture is a deciding factor that will have an impact on how a knowledge management will be implemented. This study intends to analyze organization culture in MoT before implementing knowledge management system. Data collection and analysis was performed using Organization Culture Assessment Instrument (OCAI) to identify the dominant and preferred organizational culture based the Competing Value Framework (CVF). This framework consists of 4 different culture types with different characteristics i.e. clan, adhocracy, market and hierarchy. Based on the result, we found that the dominant culture currently in MoT is hierarchy culture and preferred culture is clan culture. In order to support Knowledge Management that fits the organization culture and increase successful implementation, we proposed changes to be performed by MoT based on 3 aspects of People, Process and Technology that includes improvement of leadership involvement as mentor, promote knowledge sharing and discovery through interaction among employees and prepare technology architecture that supports sharing information, collaborative teamwork and cooperative decision making within the organization.

**Keywords:** Knowledge Management; Organizational Culture; OCAI; CVF

CI-1206-258

ROOM: BRI-12

14:00 - 14:10

### Pattern Recognition of Mathematical Symbols Using Back Propagation Networks

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**Abstract** - Artificial neural networks are artificial intelligence systems that are similar to biological neural networks. Artificial neural networks are widely applied for pattern recognition and forecasting in an event. Pattern recognition is the process of identifying patterns based on their characteristics in order to be able to classify patterns. The application of artificial neural networks regarding pattern recognition mostly uses the backpropagation algorithm. Research that discusses pattern recognition has been carried out by several researchers. However, there are still some data that can be used as further research data. Therefore, this paper uses data in the form of images of mathematical symbols for this study. This data is processed using feature extraction that is intensity of character and mark direction to get the characteristics data from the images taken. The characteristics data used as input to the backpropagation algorithm then performs the training and testing process. Based on the test results, it is known that the backpropagation algorithm can recognize mathematical symbols with the highest accuracy level is 83.9% with the parameters used are 5 neurons in the input layer with 5 neurons containing the value of characteristic data from the feature extraction process, 5 hidden layers with

each hidden layer containing 50 neurons, the number of neurons in the output layer is 23 neurons because the number of mathematical symbols used is 23 symbols, and the activation function used is binary sigmoid.

**Keywords:** back propagation; mathematics symbols; intensity of character; mark direction

CI-1206-270

ROOM: BRI-12

14:10 - 14:20

### Effectiveness of Probabilistic Image Sampling Techniques to Identify Hoax-related Images in Indonesia

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**Abstract** - Hoaxes are very common among Indonesians. The tendency of most Indonesians to believe everything they saw or heard and the rapid spread of information with questionable credibility in social media contribute to the quick growth of hoaxes. These hoaxes vary from the 'light' hoaxes such as April Fools pranks which are taken seriously to some 'heavier' ones such as political hoaxes. Fortunately, there are a lot of websites offering hoax identification services. But most Indonesians would rather be holding on the term 'no picture means hoax' than checking any kinds of information they received on those websites. As image editing software progressed forward, this old term is not really helpful. Forged images are easily made and spread through social media, and only few Indonesians know how to distinguish between real images and forged images. This research will focus on comparing the probabilistic image sampling techniques in order to combat hoaxes spreading through social media. Before being identified, several images (both forged and real) alongside some opinion-based questions regarding hoax-related imagery will be presented in a form of a survey to 167 respondents, in which most of respondents failed to identify the forged images. The success of the probabilistic image sampling technique will be based on the detection test score of each sampling techniques and their suitability with current situation in Indonesia.

**Keywords:** Hoax, Sampling, Probabilistic, Image processing, Forgery

CI-1206-291

ROOM: BRI-12

14:20 - 14:30

### Multiple Food or Non-Food Detection in Single Tray Box Image Using Fraction of Pixel Segmentation for Developing Smart Nutrition Box Prototype

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**Abstract** - Smart Nutrition Box is a prototype to predict food leftover measurement as well as the nutrition of the leftover. In the previous approach, there is a need of trained observer to conduct the analysis. Human observer may produce subjective judgement, so that algorithm which is embedded in a prototype is proposed to get rid of the bias. Black background of tray box is used, and two menus are used in this paper. The problem when taking raw dataset of images is reflection and it affects the result of segmentation, since it is considered to determine the leftover measurement precisely. Therefore, in this paper, we focus on how to classify image of food and non-food image in each compartment of tray box by using pixel segmentation before going to further stage of prediction. Automatic cropping is applied by means of rectangle contour detection for each compartment. Combined L of HSL and V color channel of HSV color spaces are utilized to remove glare in each compartment. The ratio of segmented pixel is a fraction of detected object and the area of compartment. There are 10 out of 12 of tray box images containing multiple food is correctly classified as food and non-food. The accuracy reaches 96.83% in all compartments using luminosity (L) 45% of lower upper white masking and 100% of upper white masking. It is proved that fraction pixel segmentation is sufficient to embedded as one of features in Smart Nutrition Box.

**Keywords:** food detection; food classification; image segmentation; contour detection

CI-1207-384

ROOM: BRI-12

14:30 - 14:40

### Parameter Estimation and Hypothesis Testing of Path Quadratic Using Ordinary Least Square (OLS)

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**Abstract** - Path analysis is the development of correlation and regression analysis, known as a causal model. Path analysis used to see the pattern of causal relationships in a model and interprets the pattern to endogenous and exogenous variables. Path analysis has the disadvantage of unreciprocal and inflexible model because only the linear relationships can be accommodated. The complex problems are nonlinear data forced using linear analysis then the interpretation will be a spurious. One of the simple nonlinear form is quadratic and currently the development of path quadratic is limited. The purpose of this study is to estimate the parameters of path quadratic and test the hypothesis in each of relationship variable. The method of estimating parameters used in this study is Ordinary Least Square by minimizing the number of residuals. Modeling will be completed by a simulation data to adjust the data as the criteria of

quadratic and raised the model with high variability related in sample size. The simulation study is determining  $X$ ,  $\beta$  and generating errors, so  $Y$  will be obtained according to the calculation results. In addition, this study was also conducted to test the hypothesis of path quadratic analysis relationship by considering the direct and indirect effects between variables indicated by the path coefficient. The result of this study is it possible to build a path model with a quadratic relationship between variable and the hypothesis testing show a significant result for a direct and indirect effect of path quadratic.

**Keywords:** path quadratic, OLS, data simulation.

CI-1207-390

ROOM: BRI-12

14:40 - 14:50

### Conceptual Model for Gamification of Sustainable Academic Administration Service System

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**Abstract** - A service system requires the commitment of its users because the system will be used every day in carrying out basic tasks serving customers. A service system with a gamification model can provide motivation and a sense of attachment to its users. However, some research shows that the longer the application of gamification is used, the boredom will occur, and the less the effect on its users so that the sustainability of the application is questioned. Based on these problems, this study tries to propose the conceptualization of an academic, administrative service system model with the gamification method. This model tried combining 2 (two) gamification frameworks namely Marczewski's Simple Gamification Framework and Sustainability of Gamification Impact Framework (SGI). Marczewski's was chosen because it provides clear technical guidance for designers in designing and developing a gamification system, whereas SGI can be used as a guide in evaluating the sustainability of systems that have been released. Game elements in Marczewski's user types players such as points, badges, and leaderboards can support gamification system users in achieving their goals of increasing user motivation and engagement, as well as increasing academic, administrative service satisfaction whereas elements in the SGI framework can be used as evaluation material that can improve the sustainability of the gamification system. The concept of this model is expected to increase motivation and engagement of users while at the same time maintaining the sustainability of the educational administration service system gamification.

**Keywords:** Gamification; Marczewski's Simple Gamification Framework; Sustainability of Gamification Impact Framework (SGI)

CI-1207-391

ROOM: BRI-12

14:50 - 15:00

### IT Investment Feasibility Evaluation Model: Identification of Intangible Benefit Variable in Local Government

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**Abstract** - Information Technology (IT) has been an essential element that inseparable from the business, so it needs to invest in IT. Local Government is one of the institutions that implement IT investment. The purposes of investment in IT devices are to achieve business processes and improve efficiency and effectiveness of performance in Local Government. Company and Local Government have differences in IT investment because Local Government has its uniqueness. One of the uniqueness is Local Government does not familiar with Return on Investment (ROI) in project investment. Therefore, it needs a model that can be a basis for evaluating the feasibility of IT investment, specifically in Local Government. Thus, the management of IT investment is more directed and as needed. This research aims to identify the variables of Intangible benefit that can be used to evaluate the feasibility of IT investment in Indonesian Local Government. The result of this research is that the Intangible benefit variables can be used as a reference to evaluate the feasibility of IT investment from a non-financial approach in Indonesian Local Government.

**Keywords:** Feasibility Evaluation; Information Technology Investment; Intangible Benefit; Local Government

CI-1208-403

ROOM: BRI-12

15:05 - 15:15

### Managing High Availability of Strategic IT Service Case Study: BPS-Statistics Indonesia

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**Abstract** - BPS-Statistics Indonesia delivers an IT Service called BPS Official Website. This website was built to be the single online access to statistical data from BPS. This website should maintain to be always available or have a high availability level of 99.999%. The current SLA of BPS official websites is associated with other IT services based on the web application, server, and database hosting by 97%. The best recommendations are needed to improve the availability of website services in terms of infrastructure, service management, and applications. The research aims to find out the recommendations that can be taken from the service management side. This study



uses a gap analysis method between the current condition of the High Availability (HA) operation of the BPS Official Website with the ISO 20000:2011 standard. Determination of the gap between current HA operation condition and ISO 20000:2011 obtained by assessing the assessment worksheet that was built by mapping the HA operation (Terry Critchley) to ISO 20000:2011 processes. The results of this study are recommendations for BPS that can be considered to be taken based on gap analysis results and literature study to manage high availability on BPS Official Website.

**Keywords:** High Availability, Strategic IT Service, BPS-statistics.

**CI-1209-405**

**ROOM: BRI-12**

**15:15 – 15:25**

### **Records on Multi-Copy Routing Protocols in Delay Tolerant Networks (DTN)**

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**Abstract** – Delay Tolerant Network (DTN) is a solution for intermittent connectivity and high delay. However, due to limited connectivity, DTN is vulnerable to black hole attacks caused by malicious nodes. Malicious nodes can drop all messages obtained from the source node or relay node. The impact of blackhole attacks can reduce the packet delivery ratio and waste resources from relay nodes that have carried and forward messages. The encounter record scheme is one solution that can be applied to detect black hole attacks in DTN networks. The encounter record mechanism is performed by utilizing a relay node that will store some records obtained from encounters between previous nodes, then the node will detect when a packet has dropped and a blacklist is performed on the node detected as a malicious node. Based on testing the performance of the routing protocol obtained that the encounter record scheme is able to detect malicious nodes so that it can again increase the delivery ratio and average latency. The simulation results of the study showed an average detection time of 1,6286 seconds for spray-and-wait and 1.2234 seconds for the epidemic routing for 10 malicious nodes. Detection accuracy is 100% on spray-and-wait routing and 80% on epidemic for 15 malicious nodes.

**Keywords:** Delay Tolerant Network, Blackhole Attack, Encounter Record, Spray and Wait, Epidemic.

**CI-1206-294**

**ROOM: BRI-12**

**15:25 - 15:35**

### **A Systematic Literature Review: Evaluation of Information Technology Investment**

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**Abstract** - IT has been widely used to support business processes in companies or governments. IT has become an enabler in every business process, so IT investment has become a common thing to do. Companies or Governments must evaluate the IT that has been invested. The evaluation must be carried out to find out the impact and benefit of IT investment. The purposes of this literature review are to find out: (1) What problems exist in IT investment evaluation, (2) What methods are used to solve the problem, and (3) What is the focus of the methods. This study has conducted a systematic literature review with several research questions covering 11 studies published from January 2009 to November 2019. The results of this literature are find out the problems that exist in IT investment evaluation, the methods that can be used to solve the problems, and the focus of the methods.

**Keywords:** Information Technology; IT Investment Evaluation; IT Investment method; Systematic Literature Review

**CI-1206-295**

**ROOM: BRI-12**

**15:35 - 15:45**

### **Modeling the Number of Recapitulation of District Share Transactions in the Provinces of Bali, West Java, Central Java, and East Java Judging from Social Population and Economy Using A Two-Level Hierarchical Structure with A Bayesian Approach.**

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**Abstract** - The condition of the Indonesian economy tends to fluctuate. One of the methods that can be used to observe the fluctuating development of the country's economy is looking at the development of the capital market as a leading indicator of the economy. The more advanced the economy, make the greater the role of the capital market. The index value and stock price are very influential on a person's decision to conduct stock transactions both selling and buying shares. Fluctuations in the number of stock transactions depend on the ups and downs of the stock price index. The ups and downs of the stock price index occur because there are factors that cause the price level to surge as well both in terms of economic factors and population social factors. Based on this description, this research intends to model the number of stock transactions using a two-level hierarchical structure using the Bayesian approach. Data analyzed in this study are hierarchical that patterns lognormal distribution. The analysis shows that modeling using the Bayesian Hierarchy method is better than the one-level

Bayesian method, this can be known through the DIC value. In the Bayesian model, the variation of the micro regression coefficients between provinces proved to be significantly influenced by the characteristics of the district and the characteristics of the province. Bayesian hierarchy model is proven to be able to illustrate the influence of socioeconomic and population factors at different levels on the growth of the number of stock transactions.

**Keywords:** bayesian hierarchy; DIC; log-norma; stock transactions

CI-1206-298

ROOM: BRI-12

15:45 - 15:55

### The effect of website characteristics on user trust in e-government: A Systematic Literature Study

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**Abstract** - Rapid technological development is driving the field of government to improve services. Service improvement is done through electronic government or what is called e-government. However, in practice e-government has not yet been fully accepted and used by users. Many factors that make users not use e-government, one of the factors is trust. User trust in e-government can be influenced by various things. on website-based e-government services, website characteristics have a very big effect on the trust and use of e-government. The purpose of this study is to examine the characteristics of websites that can increase the trust in the use of e-government. This study uses 31 references that are taken from various fields, such as e-government and human computer interaction. The results found seven website characteristics that can increase user confidence. The characteristics are accessibility, information architecture, navigation, user-help and feedback, brand strength, privacy & security, and visual design. Of the seven characteristics found, accessibility, information architecture and navigation are the characteristics most widely used on websites.

**Keywords:** e-government; trust; website characteristics; human computer interaction; intention to use.

CI-1025-002

ROOM: BRI-13

13:30 - 13:40

### Optimization of Missing Value in Coronary Artery Disease Dataset

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**Abstract** - Coronary artery disease (CAD) is one of the deadliest diseases throughout the world and in Indonesia. CAD occurs due to narrowing or blockage of the coronary arteries. In a research we are sometimes confronted with a lot of missing data or the dataset we use do not meet expectations. Often the way to overcome this problem is to cut or delete the data, even though reducing a data can cause the strength of the accuracy obtained to be also reduced, but to keep the lost data into research can also make a decrease in the value of accuracy obtained. The purpose of this paper is to optimize the missing data in the dataset so the overall accuracy to predict the disease can also increase. By using the Naive Bayes method combined with the Gauss distribution, testing of the dataset will be calculated for its accuracy. The Bayes theorem is also applied along with the minimum and maximum values of the attributes used to optimize the missing value. With the method used, the accuracy value is increased by 5 to 6 percent. The accuracy of the missing value in the data tested is also very good, which is above 88 percent. It means that we can increase the accuracy of a dataset who has missing value in it by optimizing the missing value.

**Keywords:** Coronary Artery Disease; Naïve Bayes; Bayes Theorem; Missing Value; Gaussian Distribution

CI-1107-008

ROOM: BRI-13

13:40 - 13:50

### Framework Design of Ambulance Dispatcher System in Telemedicine Service

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**Abstract** - Appropriate, fast and integrated emergency call handling will greatly assist in shortening the time for giving an action to patients, especially in time critical cases. In this study proposes an integrated system framework that can provide fast, precise and accurate information to call center officers in assigning ambulances that are available in the closest position to the patient's location. The proposed system aims to shorten the response time for emergency call handling and to increase the success of delivering patients to the right health facility according to their condition.

**Keywords:** Smart Ambulance; Dispatcher system; Telemedicine; Internet of Things; Location based searching.

CI-1118-055

ROOM: BRI-13

13:50 - 14:00

### Ensemble Analysis of the Student's Length of Study at University of Klabat, Manado Indonesia

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**Abstract** - The purpose of this study is to classify the length of student learning based on graduation status on time or not based on several independent variables observed, namely gender, cumulative achievement index (GPA), place of residence, type of work parent, school origin, salary of the person parents and labor students. The data of this study are simulation data that were built on the existing academic information system at Klabat University, Airmadidi, Manado Indonesia. The statistics used in this study are non-parametric statistics with classification analysis methods. Classification analysis is to find a training set model from a training set that distinguishes notes into appropriate categories or classes. The method used is a classification using ensemble techniques. The ensemble technique is a learning algorithm method developed from several classification or predictor models that are used to classify new data based on predictive weights produced previously. The basic principle of the ensemble method is to develop a set of models from training data and combine a set of models to determine the final classification. The final classification is based on the largest collection of votes from a combination of a set of models. To get the best combination of models, the ensemble method allows the use of several different classification models. The ensemble method used in this study is Bagging, Boosting and Random Forest. The results obtained from this study indicate that the Random Forest method has a higher level of accuracy compared to the Bagging and Boosting method, which is as well as the sensitivity and specificity.

**Keywords:** Ensemble Analysis, Classification, Simulation Data, Student's Length of Study, Indonesia.

CI-1122-075

ROOM: BRI-13

14:00 – 14:10

### Utilization of ICTs for Reporting Extraordinary Cases of Rabies

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**Abstract** - Rabies is one of the zoonotic diseases which has spread rapidly in Indonesia and has become an epidemic in 24 provinces. The Province of Nusa Tenggara Barat is the latest province to experience an extraordinary incidence of rabies, with the center of distribution coming from Dompu District. Rabies is a disease whose spread among regions is difficult to control. The central government and regional governments continue to strive to exercise control by distributing various types of logistics and disseminating information to the public. With the limited resources available to control this rapidly expanding disease outbreak, effective and efficient disease outbreak control scenarios are needed by utilizing information and communication technology. This research intends to develop a platform by utilizing information and communication technology (ICT) as a tool to control rabies outbreaks. The use of ICT is believed to have various benefits such as a communication tool between the government and the community and also communication between institutions, as well as an analytical tool for decision makers. Usability theory is used to test platforms that have been developed. Test results show a high level of usability that is 80%, this shows that the platform was built in accordance with the needs of stakeholders.

**Keywords:** Rabies; ICT; Usability.

CI-1126-093

ROOM: BRI-13

14:10 – 14:20

### Technical Aspects of Collaborative Learning via Group-based Game Making

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**Abstract** - In recent years, there has been ample research on game making and learning. Some studies focused on coding and programming, while others emphasized the content of knowledge and the social aspect of game making. Recent literature on collaborative game making in a learning environment showed that game making increases students' interest in learning new topics, allows students to contribute their knowledge, and shares their creation to others. Collaborative game making is usually conducted in a classroom where a group of students works together to create a game in a computer and only one person is in charge of controlling the game development. Despite the many advantages of collaborative game making, not many studies on collaborative game making examined whether it can be conducted virtually. The purpose of this paper is to investigate and find out whether collaborative game making can be accomplished virtually. A prototype of game template developed by Christanti, Sanjaya, & Murniati (2016) was used to test whether collaborative game making can be accomplished using the online storage and Subversion (SVN) repository. The comparative advantages between the two options were discussed.

**Keywords:** collaborative game making; digital game; online storage; SVN repository; technical aspects

CI-1127-102

ROOM: BRI-13

14:20 – 14:30

### **Blob Analysis Implementation in Cow's Milk Somatic Cell Calculation**

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**Abstract** - Currently, the calculation of the maximum somatic cell is carried out generally by manual calculation. Consequently, the standard of milk quality determination in large quantities is still based on nutritional content. Whereas in the international market, milk quality determination should be considering the maximum number of somatic cells. The solution offered by this research is the application of somatic cell calculation based on image processing techniques using the blob analysis. The result of this research is the somatic cells are successfully counted. However, the separation of the somatic cells with the artifacts (noise) is still quite difficult to be done. Therefore, an improvement in the image enhancement step is required in the future research to increase the accuracy.

**Keywords:** Reptile; Snake; Species Recognition; Automatic Detection; Convolutional Neural Network;

CI-1206-289

ROOM: BRI-13

14:30 – 14:40

### **An Automated Scoring Tool of Originality for Torrance Test of Creative Thinking-Figural Form**

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**Abstract** - A popular creativity scoring system, Torrance Test of Creative Thinking (TTCT) – figural form, includes fluency, flexibility, originality, and elaboration scales. Such assessment scales can substantively from one assessor to another and depend on the individual analyses and knowledge of assessors. In other words, the subjectivity is potentially high. On the other hand, efficiency, consistency, and cost are precisely important factors in assessment. This work, therefore, proposes a method to allow consistent and meaningful assessment of creativity thinking, particularly for originality scale, as well as maintaining efficiency. In simple terms, originality indicates the rarity of the ideas. The automated scoring of originality scale process is initiated by mathematically formulated the constraints. Testee's figural form responses are processed in three stages: preprocessing, features extraction, and post processing. In preprocessing stage, images are performed in histogram equalization, image segmentation, and image binarization. The features extraction includes image thinning, minutiae extraction, and singularity detection. Finally, in post processing stage, the formulated constraints are executed to analyze the processed images to determine creativity score. The success of this proposed automated tool was revealed by a scale independently judged by humans and confirmed as a better approximation of human responses than habitually-done measures.

**Keywords:** Automated assessment tool; creative thinking; figural forms; originality; Torrance Test of Creative Thinking

CI-1130-176

ROOM: BRI-13

14:40 – 14:50

### **Embracing Agile Development Principles in an Organization using Legacy System: The Case of Bank XYZ in Indonesia**

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**Abstract** - Bank should provide reliable financial services for its customer. Banking services are evolving along information technology advancement. It is a common practice for every organization to adopt latest technology in order to gain or sustain their competitive advantage against competitors. Nevertheless, not every technology implemented in bank are state of the art technology, they come from different extent and these older generation technologies referred as legacy system. Mainframe is usually a part of legacy system because it ensues since the organization established. Mainframe is meant to handle humongous financial transaction at a time. Its performance is so reliable, thus makes it indispensable. Therefore, bank is facing interoperability challenge between legacy system and new technologies. This study will analyze the challenges faced by a bank in Indonesia in embracing agile development principles in implementing new technologies above their rigid legacy infrastructure.

**Keywords:** legacy system, mainframe, agile, bank

CI-1201-190

ROOM: BRI-13

14:50 - 15:00

### **Implication of InsurTech: Implementation IT Decision Domain Perspective Case Study: PT XYZ**

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**Abstract** - Today, technology is improving rapidly and transforming insurance business into Insurance Technology (InsurTech). InsurTech is an ecosystem of focused, innovation-based organizations that has the vision to deliver value for clients. PT XYZ is a health insurance company that is changing into InsurTech to provide opportunities focusing on flexibility, effectiveness, and accelerating the automation process of routine activities that are cost-effective and focus on user's experience. With InsurTech, XYZ will be easier to reach end users directly and buying process for customer to be easier and quicker. However, there are still so many challenges for InsurTech based on IT decision domains. This paper will explain the previous InsurTech research as the state-of-the-art. Theory that is used about IT governance including IT decision domains, IT archetypes, and InsurTech theory. Research methodology that will be used is data collection from IT internal meetings, documentations, interviews, and comparing the current and our recommendation based on governance arrangement matrix and architecture business need mapping. The results and conclusion is XYZ needs to change and improve its four of IT decision domains, prioritization on all types including prioritization level, and activities related with its employees and senior executives' knowledge, skill, behaviour, and leadership.

**Keywords:** IT Governance; IT Decision Domains; InsurTech; Government Arrangement Matrix.

CI-1205-235

ROOM: BRI-13

15:05 - 15:15

### Development of Student Attendance Information System in Universitas Terbuka Tutorial

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**Abstract** - The Face to Face Tutorial is one of the learning assistances provided by Universitas Terbuka to students. Also, there is another learning assistance provided by the Universitas Terbuka namely Online Tutorials (TUTON) and Webinar Tutorials. Basically, the problem faced by the Universitas Terbuka monitoring there is no system to monitor the student attendance in extent of this Face to Face Tutorial activity. Currently, the monitoring process is using direct monitoring methods, the system to assist the Universitas Terbuka in providing services or long-distance facilities for students in both urban and rural areas. Another goal is to build remote services using Web-based information systems. The method used in this research is to build the attendance information system in the Face to Face Tutorial activity using the Waterfall method. There are five stages in this method, namely: Analysis, Design, Implementation, Testing, and Maintenance. The research results are the conversion stage of the application design into an application that is ready for use by users. Conversion is done using PHP web-based programming language which is supported by other components such as JavaScript, bootstrap. Based on the results of research conducted in 2019, several conclusions can be drawn. First student attendance information system is very helpful because at the present the process of recording student attendance still using manual forms. Second Further research needs to be done and resulted in several Universitas Terbuka to get better results. Third in this application there are still some shortcomings because it has not adjusted for Universitas Terbuka needs

**Keywords:** Face to face Tutorial, Universitas Terbuka, SDLC Method, Web-based application, Distance Education

CI-1208-407

ROOM: BRI-13

15:15 - 15:25

### Performance Evaluation of Chaotic Encryption System (CES) on Data Transmission in NS3 Simulation

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**Abstract** - In a data transmission operation, especially one that occurs in real-time, one of the factors needed is the security of the message, or information, that is sent. Both senders and recipients of data need to ensure that the information is difficult to read by parties outside those of which have legitimate interest in. This security factors, one of them, is done by encrypting the messages sent. However, along with the increasing computing capabilities of computer hardware available on the market, this encryption security method, which is usually done using methods that are also commonly found in markets such as AES and 3DES, are increasingly difficult to do. This development is making the encrypted message sent becomes easier to decrypt using the brute force method. Therefore, encryption based on chaotic mathematical theory, such as the Chaotic Encryption System (CES), is increasingly interesting to explore as an option for encrypting messages. This study aims to compare the performance of CES, as a way of encryption, to other more commonly used ways, namely AES and 3DES. Performance that is compared is randomness, which uses Shannon's entropy calculation as a parameter, and QoS, using the goodput and throughput parameters of sent messages, considering that the sent message must not only be safe but must also be intact. Tests are carried out repeatedly in an NS3 simulation environment, at different network error levels, and also compared with network without errors. From this series of tests, this study found that encryption using CES is indeed more resistant to attacks from outsiders when compared with AES and 3DES, although, it was also found, that CES is more difficult to reconstruct the information, if the data sent is damaged.

**Keywords:** encryption, CES, NS3, Shannon Entropy, QoS.

CI-1207-358

ROOM: BRI-13

15:25 - 15:35

**Changes in IT Governance for Business Transformation in Banking Industry: Case Study PT XYZ in Indonesia**

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**Abstract** - Changes in IT governance is urgently needed to support the business transformation. PT XYZ is a bank that transformed its business model to compete optimally in today's digital era. The reasons are to modernize legacy systems and existing work units, develop more customer-centric products, and expand banking service coverage. This research's objectives were to look at elements of IT governance by De Haes & Grembergen which are structures, processes, and relational mechanisms. The analysis was carried out by looking at the condition of the bank before and after the transformation that happened because of changes in the governance of IT decision making that will be seen using theory from Weill & Ross. Data were collected from annual and internal reports, also interviews with parties related to IT governance at PT XYZ. The results of this research showed that transformation happened in all elements of IT governance. Changes in organizational structure and alignment processes between business and IT, as well as product development methods such as the application of bi-modal governance, which uses both waterfall and agile, occurred after the transformation. Recommendations are given to PT XYZ to restructure the organization and schedule regular meetings to affiliate IT project development.

**Keywords:** IT Governance; Banking Business Model; Business Model Transformation

CI-1207-334

ROOM: BRI-13

15:35 - 15:45

**IT Governance Archetype: IT Decision Making of Public Sector in Indonesia**

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**Abstract** - Proper IT governance has a significant role in an organization, to have the right IT decisions which align with business process and strategy, institutions need to develop effective IT governance. This study tries attempting to map the functions of decision-makers and input providers for IT governance at the Ministry of Foreign Affairs of the Republic of Indonesia (MOFA). The composed population of this academic study typically consisted of active MOFA employees and CIOs; necessary data collected based on the desired results of the completed questionnaire. From the results of the study, data typically show that the current situation is not yet in line with expectations and existing governance rules, therefore there is a need to improve in terms of regulation and enforcement of IT governance at MOFA.

**Keywords:** IT Governance; IT Governance Archetype; CISR.

CI-1206-252

ROOM: BRI-13

15:45 - 15:55

**K-Means Collaborative Filtering Serendipity Recommender System**

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**Abstract** - The recommendation system has played an essential role in helping consumers to find products that fit their character. Along with the growth of the products, recommendations based on the similarity of consumer characters are no longer satisfying due to the overspecialization effect, where the recommendations become more specific and monotonous in certain types of products. Consumers expect product recommendations to be novel, unexpected, and relevant. The character of this product is called serendipity. Then the recommendation system is called the serendipity recommendation system. Some of serendipity recommendation systems based on Collaborative Filtering techniques. This algorithm uses the principle of behavior similarity between users in giving ratings on items and the similarity of ratings received by items. The advantage of this method lies in its simplicity and ease in interpreting the results of recommendations. One of machine learning similarity algorithms used to get recommendations is KNN. But the KNN algorithm is not suitable to obtain serendipity recommendations, because it produces very similar recommendations. Therefore, this study using a K-Means Clustering algorithm. The K-Means Clustering algorithm is used to generate clusters that contain items with a similar similarity value. Then to obtain an area with potential serendipity value using the calculation of the distance between clusters. Items in this area are the candidates of recommendation with serendipity character. The measurement of the resulting recommendations is using MAE, unexpectedness, and serendipity metrics. The recommendation generated using this model is expected to have a low MAE value, high unexpectedness, and serendipity value.

**Keywords:** Collaborative Filtering; serendipity; K-Means Clustering.



DTS-1127-108

ROOM: BRI-14

13:30 - 13:40

### Role of Youth in Disaster Risk Reduction in Sinabung Eruption Areas

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**Abstract** - Since 2010, Mount Sinabung area has become a disaster-prone area, even the Eruption that occurred at Mount Sinabung has been occurring continuously to this day. For this reason, youth participation and role in disaster risk reduction of the Mount Sinabung Eruption are urgently needed. The purpose of this study is to analyze the Effectiveness of Youth's Role in disaster risk reduction of Mount Sinabung Eruption in Tiganderket District, Karo Regency, North Sumatra. This study uses qualitative method with descriptive data exposure. Data collection in this research uses observation, in-depth interviews, documentation studies, and literature studies. The results of this study indicate that the Effectiveness of Youth's Role in disaster risk reduction of Mount Sinabung Eruption in Tiganderket District have not been effective as demonstrated by the level of youth involvement to play a role in disaster management. Youth in Tiganderket Subdistrict was only involved in the phase when the disaster happened. While in the other two phases, namely pre-disaster and post-disaster, the role of youth involvement has not been effective, so that the achievement of disaster management goals is very low. Youth in Tiganderket District (Perbaji, Mardinding and Sukatendel Village) have less involvement in pre and post disaster phase but have quite a lot of involvement when a disaster occurs. After disaster occurs, the youth tend to lack involvement because they choose to work in the field or migrate outside the village to earn money.

**Keywords:** Youth's Role; Mount Sinabung Eruption; Disaster Risk Reduction

DTS-1127-111

ROOM: BRI-14

13:40 - 13:50

### Physical and Chemical Characterization of Volcanic Dust from Mt. Semeru and Mt. Bromo, and the Study of Their Influences on The Productivity of Nearby Agricultural Land

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**Abstract** - A study to characterize physically and chemically the volcanic dust from two neighboring active volcanoes, that is Mt. Semeru and Mt. Bromo, has been done. Five samples were collected from various site at the slope of the Mt. Semeru, while seven samples were collected from Mt. Bromo. All samples were, then, treated similarly, that's, each was cleaned up, and heated up to 500°C for 30 minutes, and then prepared for examination using three different equipment. The equipment was XRD, SEM, and XRF. The results of the examination, using these three-equipment indicated, apart from their mostly the same chemical atomic/molecular contents, there is a main difference between the two sample clusters, that is, that samples from Mt. Semeru contain a lot higher content of Fe, which only exists insignificantly in the samples of Mt. Bromo. The traces of the atoms in one of the samples from Mt Semeru (Semeru 1) were dominated by Fe (39.2%), followed by Si (27.9%), and other elements such as Ca (12,7%), Al (12), and K (2,69%). Zink (Zn) was an element with lowest concentration, which was 0.03%. Study using XRD on the samples from Mt. Bromo indicated close similarity of spectral pattern with that of Semeru, except for the trace of Fe, which was absent in the sample from Mt. Bromo. Other elements, such as Ca, Al and K, commonly exist in the both sample clusters. Comparing the current study, with study of Omar (2015), indicated that Si found in the sample Semeru1, for instance, has a crystalline structure, with Miller index of [1 1 1], and 2-theta angles of about 28°, while the diffraction from XRD indicated that its element of Fe has crystalline structure, with Mille index of [2 0 0], with 2-theta angle of about 65°.

**Keywords:** Volcanic dust; Semeru; Bromo; chemical element traces of Fe, Si, Al

DTS-1128-126

ROOM: BRI-14

13:50 - 14:00

### The Needs of Geospatial-Based Information Systems Model in Disaster Management of Reproductive Health Sub-Cluster in Nusa Tenggara Barat

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**Abstract** - Indonesia is a disaster-prone area, but in the field, it is often found that the response process is slow at the very beginning of a disaster. Furthermore, disasters are often unpredictable and therefore simulation to train of preparedness, mitigation, and disaster management should be conducted continuously and systematically, both manually and electronically by utilizing advance technology in geospatial. When preparedness, mitigation and disaster management can be done well then, the risk of casualties and post-disaster impact could be minimized. The purpose of this study is to develop a model of geospatial based information systems in disaster management



of reproductive health sub-cluster in Nusa Tenggara Barat (NTB). Data collection to obtain system requirements is done through in-depth interviews with several stakeholders and people involved during disaster management and based on the experience of the earthquake disaster in Lombok NTB, then proceed with the development of information system models. The results of in-depth interviews indicate the availability of infrastructure and the importance of the system offered. The information system model needs to be composed of three main functions, namely preparedness and mitigation systems, logistics distribution, and reproductive health services. Literature shows that a system like this will be able to effectively improve the performance of disaster management.

**Keywords:** disaster alert; health reproductive; geospatial information system; Lombok earthquake.

**DTS-1207-369**

**ROOM: BRI-14**

**14:00 – 14:10**

### **Disaster Nursing Competencies in Disaster Management**

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**Abstract - Background** Almost every country is faced with the condition of the lack of the role of nurses in response to disaster management. Therefore, a nurse's competency is needed to compensate for the complexity of the disaster and the impact that may be greater in the future. The global nature of a disaster allows nurses to be prepared with the same competence so that nurses are able to work together in meeting the health needs of the affected population. **Objective:** to explore research on disaster nursing competencies based on the International Council Nurse (ICN) competency framework that has implications for disaster management, both before, during and after a disaster. **Method:** a systematic review using several literature databases on disaster nursing competencies in the past 10 years. The keywords are nurse competence, disaster, disaster nursing, disaster management. These keywords are sometimes used in combination to identify relevant literature. **Results:** the number of available studies increased with increasing disasters. Articles commonly found using the search category "nurse competence and nursing disaster." A total of 15 articles from a total of 205 identified are considered relevant. Themes gained (1) Disaster Nursing Competency Domain; (2) Disaster Nursing in the Curriculum. **Conclusion:** ICN disaster competence is recommended to be developed by each country according to its characteristics. Nurses must be prepared with knowledge, skills and professional attitudes in nursing care to populations affected or at risk of disaster, so disaster education is a priority in the nursing curriculum.

**Keywords:** competency; nursing; disaster

**EAPS-1115-033**

**ROOM: BRI-14**

**14:10 - 14:20**

### **Land Surface Temperature (LST) for detecting lava flow in Gunung Anak Krakatau, Study Case Eruption in 2018**

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**Abstract -** Gunung Anak Krakatau, located in Sunda Strait categorized in A-type volcano that having eruption in 2018. The character of the eruption is a magmatic eruption in strombolian, deadly and beautiful at once and also having effusive eruption when lava comes out from the summit of the crater. Lava flow activity can be seen from the Pasauran volcano monitoring post, which means that rely on visual monitoring. In this research we try to analyzed remote sensing data obtained from Landsat 8, which is equipped with the thermal infrared band makes it possible to detect changes in surface temperature locally as well as globally. Band 4,5 was used in order to perform NDVI data, then used for calculating the emissivity of the land area. Whereas metadata from band 10 was used to calculate at sensor brightness temperature. Combine the value from that calculation, LST was provided to give the maximum temperature in Gunung Anak Krakatau complex area. The highest temperature from LST has come from the main island, Anak Krakatau Island where the active crater is located. In 2018, GAK starting its eruptive activity in June and the biggest eruption on 23 December 2018 after the tsunami. In September 2018, the highest temperature distribution, 70°C, can be seen from the LST image extending from the crater area to the Southeast. Visual monitoring shows lava is heading towards the sea in that month.

**Keywords:** Gunung Anak Krakatau; temperature; Landsat 8; remote sensing

**EAPS-1205-238**

**ROOM: BRI-14**

**14:20 - 14:30**

### **Temporal Change of Spectra and Lyapunov Exponent Volcanic Tremor at Raung Volcano, Indonesia**

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**Abstract** - Spectral Analyses and estimation maximal lyapunov exponent (MLE) of volcanic tremor recorded at Raung Volcano were carried out to investigate dynamical systems regarding to their generating system. Their results of both analyses can explain the temporal change in frequency and deterministic processes of the dynamical system. Spectral analysis of volcanic tremor was estimated by the average periodogram method which includes division, Fast Fourier Ttransformation and averaging. MLE was estimated by graphing the relationship between Stretching Factor (S) and the number of points in the tractor (N) diagram. Content frequency of volcanic tremor Raung Volcano is range from 2.68 to 3.7 Hz. Temporally, there is no significant change, which means that there is no change in the geometry of the Raung volcanic tremor source. This is also shown by the maximal lyapunov exponent which is temporarily constant and positive. That shows that the source process of Raung volcano is chaotic.

**Keywords:** Raung volcano, volcanic tremor, Maximal Lyapunov Exponent, spectral analysis

**EAPS-1206-278**

**ROOM: BRI-14**

**14:30 - 14:40**

### Mapping the Subsurface Structure of Mount Lawu using Gravity Method

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**Abstract** - Mount Lawu is a stratovolcano which has a height of 3265 meters which still shows volcanic activity as indicated by a fumarole area, located on the south flank. It has a potential of geothermal energy estimated 195 MW which has not been much developed and located close to subduction between Indo-Australia and Eurasia plates which supports the geothermal system. Gravity method is used to determine the rock density to image the subsurface structure based on differences of rock density and analyze the potential of natural source, include geothermal energy. Using a Gravity meter La Coste and Romberg type G525 with 30 research sites in Mount Lawu. The result from field measurements is performed with corrections then obtained a Complete Bouguer Anomaly value. The Complete Bouguer Anomaly is projected onto a flat surface using Dampney method with equivalent field depth of 9000 m and equivalent field height of 2206 m. Separations process of regional gravity anomalies and residual using Gaussian filtering technique. Subsurface modelling using forward modelling method show that geological subsurface structure is consisted of 2.24 gr/cc (tuff and breccia), 2.5 gr/cc (lava andesite), 2.48 gr/cc (andesite), and 2.54 (breccia). A fault structure causes graben structure in the south direction of research area is assumed as potential of geothermal area with a depth around 3200 meters.

**Keywords:** Mount Lawu; Gravity Method; Gaussian Filter; Forward Modelling.

**EAPS-1207-396**

**ROOM: BRI-14**

**14:40 - 14:50**

### Evaluation of Land Cover Change and Number of Vehicles Increasing on Land Surface Temperature: A Case Study of Surabaya City, Province of Jawa Timur, Indonesia

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**Abstract** - Urban Heat island phenomenon that occurs in some major cities in Indonesia can be influenced by several factors such as land cover change and the increasing number of vehicles. The phenomenon of small climate change in urban areas such as the city of Surabaya, the province of Jawa Timur can cause rising surface temperatures that can impact the decline in health and environmental degradation. The purpose of this research is to know the dynamics of land cover change, and the dynamics of the vehicle to surface temperature in Surabaya city. Methods that are in use are spatial analysis of multi-temporal imagery and analysis by using statistical data. The data used in surface temperature analysis and land cover analysis in the form of vegetation is Landsat-8 OLI during the recording period from 2014 to 2019 and vehicle dynamics data. The results showed a change of land cover with an estimated area of 3031.629 ha, a rise in surface temperature with an estimate of 3.833 °C, and with the increase in a number of vehicles by 541,715 units from 2010 until 2015. Large surface temperature shows the areas with crowded activities such as Malls or market, terminals, industrial zone, and government zone.

**Keywords:** Urban Heat Island; Land Cover Change; Land Surface Temperature; Number of Vehicles

**EN-1115-046**

**ROOM: BRI-14**

**14:50 - 15:00**

### Optimization of Solar Cell as Alternative Energy in Water Treatment Plant Using as Alternative Energy

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**Abstract** - This study explains the development of biodigester reactor wastewater purification technology in water treatment using solar cells. This technology uses a 1-phase pump as an aerator input to make a microbubble from a microbubble generator. The pump used is a 1 phase pump with a 220 Volt input voltage. In this system, solar energy will be applied as an alternative energy to replace the fossil energy. The solar energy is new renewable energy (EBT) which can be used as an alternative energy power plant replacing fossil energy or supply from Perusahaan Listrik Negara (PLN). It can save the environment from pollution of fossil energy like CO<sub>x</sub>, SO<sub>x</sub>, NO<sub>x</sub> and particulate matter (PM) from the fossil. By using Pulse Width Modulation (PWM) as a speed regulator reference on a coconut grated machine, optimal results are obtained in the lattice process. From the research it was found that the installed solar cell can produce an average power at 08.00 WIB is 4.86 Watt, and at 12.00 hours it gets a maximum power reaching 5 Watt. Speed regulation using Pulse Width Modulation (PWM) is obtained when the maximum current reaches 0.38 A, on a machine without a load the speed is 3724 Rpm and when loading the speed reaches 2926 Rpm.

**Keywords:** Solar Cell; Speed; Pump 1 fasa; Pulse Width Modulation; Power.

EAPS-1205-242

ROOM: BRI-14

15:05 - 15:15

### Detecting the Microtremor Events at Arjuno-Welirang Complex, East Java Based on Fractal Dimension Analysis

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**Abstract** - We installed single seismic station in 3 locations to record seismic signals in the Arjuno-Welirang Volcano Hosted Geothermal area. The existence of high noise at the research study makes seismic signals difficult to observe. In this study, we detected seismic signals in Arjuno-Welirang based on temporal analysis of fractal dimensions on continuous recording signals. The temporal of fractal dimension was applied to continuous seismic recording with sampling time interval of 0.01 seconds using delay embedding theorem. Delay time is done by autocorrelation and the attractor diagram is reconstructed by determining the embedding dimension based on FNN = 0. From the attractor and delay time diagrams, the correlation dimension or fractal dimension will be obtained. Based on the temporal analysis, the signal recording at Welirang volcano hosted geothermal area is shown by a significant decrease in the fractal dimension values.

**Keywords:** microtremor; fractal dimension; delay embedding; delay time; attractor diagrams

EAPS-1205-243

ROOM: BRI-14

15:15 - 15:25

### Gravity Anomaly in Kelud, Kasinan-Songgoriti, and Arjuno-Welirang Volcano Hosted Geothermal Area, East Java, Indonesia

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**Abstract** - This study aims to determine the relationship of heat reservoirs in the Kelud, Kasinan-Songgoriti, and Arjuno-Welirang geothermal systems based on gravity data analysis. Gravity data are obtained from Geodetic Satellite (GEOSAT) and European Remote Sensing-1 (ERS-1) Satellite which have been corrected to free air correction. The result of gravity data analysis is in the form of a complete Bouguer anomaly which represents the gravity anomaly below the surface. The results of the complete Bouguer anomaly value obtained were -15,238 mGal to 86,087 mGal. Based on these results, regional anomalies and residual anomalies will be separated to determine the depth of the two anomalies. 3D modeling was carried out based on the complete Bouguer anomaly data to determine the reservoir relationships in the Kelud, Kasinan-Songgoriti, and Arjuno-Welirang geothermal systems.

**Keywords:** gravity data; complete Bouguer anomaly; reservoir; geothermal; GEOSAT and ERS-1 Satellite.

EN-1114-024

ROOM: BRI-14

15:25 - 15:35

### Effect of Doping Na and Cl Atom on Magnetic Structure of ZnO: Density Functional Theory Calculation

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ZnO is considered as a wide bandgap material because it has a 3.4 eV direct bandgap. This wide bandgap characteristic causes good transparency, high electron mobility and luminescence at room temperature. The unique and tunable properties of nanostructured ZnO shows excellent stability in chemically as well as thermally stable n-type semiconducting material with wide applications such as in luminescent material, supercapacitors,

battery and solar cells. To be applied to a variety of needs, price control bandgap is needed. Likewise, control over the magnetic nature. Therefore, we need a study related to bandgap modification, one of them is by giving impurity atoms. Atom Na and Cl were chosen as representatives of donors and acceptors. Atomistic calculations use the Functional Density Theory method which is implemented in ABINIT software. Relaxation and convergence research results are used to find the most stable energy value of ZnO. The results showed Magnetic Properties in ZnO doping Na obtained magnetization values of 1.4802  $\mu_B$  greater than pure ZnO that is 0.9394  $\mu_B$  while ZnO doping Cl obtained magnetization values of 0.8593  $\mu_B$  smaller than pure ZnO. In conclusion the ZnO doping magnetic properties of Na increase magnetization and Cl doping also change the magnetic properties by decreasing ZnO magnetization.

**Keywords:** Zinc Oxide; Magnetic Properties; FT Calculation

**EAPS-1207-400**

**ROOM: BRI-14**

**15:35 - 15:45**

### Algorithm for Determining Crescent Visibility in the Hijri Calendar

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**Abstract** - The determination of the Islamic Calendar is a crucial issue, since it is directly related to when a worship begins and ends. Although there are already two commonly used methods, namely Hisab (reckoning) and Rukyat (observation) methods, both methods often do not find agreement. The Hisab method is based on Kepler's law to calculate the position of the moon, on the other hand The Rukyat method use direct observation of a crescent (moonlight). In this study an algorithm was developed that can be used to determine hijriyah calendars. The algorithm was developed based on modeling of astrophysical laws related to planet position and the propagation of light as well as analysis of reckoning data, rukyat data, and direct observation. Reckoning data sourced from USNO software and Accurate Time 5.3.4; The rukyat data came from observations collected by the Indonesian Religious and Moonsighting Committee Worldwide (moonsighting.com). With this input data, after computation, visualization of the hilal visibility prediction is produced in every location in the world in the form of a crescent visibility map. The algorithm is also able to calculate the dates of the conjunctions of the month, complete with a visibility map on the dates before, during conjunction, and after the conjunction along with its visibility maps, so users can create calendars in one year. The verification that has been carried out on the developed algorithm shows that the results are quite accurate and can accommodate various criteria of the Hijri Calendar used in Indonesia and internationally.

**Keywords:** Hijri; Calendar; Hisab; Rukyat; Moon.

**DTS-1202-196**

**ROOM: BRI-14**

**15:45 - 15:55**

### Flash Flood Potential Assessment In Humid Tropic Region: A Case Of Tamiang Basin

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**Abstract** - Flash flood is a natural disaster that is difficult to predict and dangerous for humans. Flash Flood Potential Index (FFPI) assessment is a mitigation effort using hydrological process simulation that represents the tendency of flash flood occurrence by combining the physiographic factors. FFPI approach has been developed using various factors. This research develops FFPI base on physiographic factors such as slope, geology, ground movement, Antecedent Precipitation Index (API) and curve number (CN). These factors considered as efficient, not redundant and can be used for areas with minimal data input. The Tamiang Basin in Aceh Province was chosen as the representative location for the FFPI assessment of the humid tropic's region. The mapping of FFPI for Tamiang Basin showed the potential spatial distribution of flash flood corresponding with the historical location of flash flood events. Flash flood hazard in the Tamiang Basin is affected by 70% of villages which are relatively close to water bodies and high-density population areas. The combination of FFPI with threshold intense rainfall is needed for Flash Flood Guidance System (FFGS). FFPI assessment can be used for a basis for hazard and risk assessment at the basin level and support the disaster risk reduction management plan.

**Keywords:** disaster; FFPI (Flash Flood Potential Index); hydrometeorology; hazard; mitigation

**DTS-1207-395**

**ROOM: BRI-14**

**15:55 - 16:05**

### J-Alert System in Disaster Mitigation in Smart City in Indonesia

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**Abstract** - Both natural disasters and artificial disasters are a phenomenon that cause both material and non-material losses. The loss caused by disasters is one of the threats for the stability of the state, therefore we need a system that is suitable in this era, which globalization is happening, and involves all components of society. The purpose of this study is to analyze Japan's J-Alert system which is a national warning system that created to provide information to the public about various threats from both natural and artificial disasters that possibly occur in a short time, so the evacuation time and the coordinating time for emergency response on smart cities in Indonesia will be able to be done faster. To analyze the data, this study uses the concept of J-Alert, the concept of disaster mitigation, and the concept of smart city. The research method in this study is a qualitative method with descriptive analysis. The results of this study are by applying the J-Alert system to smart cities in Indonesia, the system can provide information quickly about the probability of a disasters that will occur, so it will increase the public awareness, other than that, the preparation for mitigation will also be done faster because agencies or institutions involved in disaster management that occur have been well coordinated.

**Keywords:** J-Alert; Smart City; Disaster Mitigation

EN-1130-154

ROOM: BRI-14

16:05 - 16:15

### Equivalence Ratio Effect on the Rice Husk Gasification Performance Using Updraft Gasifier with Air Suction Mode

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**Abstract** - Rice husk is biomass waste from agriculture industry. The amount of rice husk in Indonesia is very abundant and has the potential to be a renewable energy source for electricity through the gasification process. This paper study about effect of equivalence ratio on updraft gasifier performance using rice husk with air suction mode. The equivalence ratio was varied at 16.60% and 19.97% to study temperature profile on gasifier, volumetric flowrate of producer gas, composition of producer gas, lower heating value of producer gas, and cold gas efficiency. The time needed to consume rice husk and reach an oxidation temperature of more than 700°C for equivalence ratio of 19.97% is shorter than 16.67%. Producer gas rate production per unit weight of rice husk increase from 1.80 Nm<sup>3</sup>/kg to 2.66 Nm<sup>3</sup>/kg for equivalence ratio 16.30% and 19.97%, respectively. Composition producer gas for equivalence ratio of 16.67% is 18.58% CO, 8.30% CO<sub>2</sub>, 0.87% CH<sub>4</sub>, 21.71% H<sub>2</sub> and 50.54% N<sub>2</sub> and 19.97% is 19.46% CO, 5.94% CO<sub>2</sub>, 0.90% CH<sub>4</sub>, 14.93% H<sub>2</sub> and 57.32% N<sub>2</sub>. The lower heating value of the producer gas for equivalence ratio 16.30% and 19.97% is 5.46 MJ/Nm<sup>3</sup> and 4.72 MJ/Nm<sup>3</sup>, respectively. Cold gas efficiency of the gasifier at equivalence ratio 16.30% is 89% and at 19.30% is 70.50%.

**Keywords:** rice husk; gasification; updraft gasifier; producer gas; cold gas efficiency

EN-1129-150

ROOM: BRI-15

13:30 - 13:40

### Biodiesel synthesis from coconut oil using plug flow reactor (PFR)

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**Abstract** - The energy demand for vehicle fuel in our country is increasing day by day. Majority of Indonesian vehicle fuels are met from fossil fuels. Currently, mandatory use of biodiesel blending in Indonesia is 20% from diesel oil (B20). Commonly, Indonesian biodiesel is made from palm oil. Besides palm oil, there are many biomass sources produce vegetable oil as biodiesel raw material that has the potential to be developed. Coconut is one of the renewable source produce vegetable oils whose existence is easily available and abundant in Indonesia. It is widely growing tree, especially in coast area of the country. Coconut oil is converted into biodiesel (metil ester) through the transesterification process. Mostly, biodiesel synthesis using simple apparatus equipped with heating mantel, or using Continous Stired Tank Reactor (CSTR). In this research, the biodiesel production conducted in plug flow reactor (PFR) with KOH as catalyst. KOH catalyst was used in this research because it was more reactive than NaOH. The reactor was operated at 60°C, with different flowrate (10 ml/s, 15 ml/s, 20 ml/s, 25 ml/s) with methanol ratio 25% w/w oil and catalyst ratio 0,5% w/w oil. The results showed the density of biodiesel was 880,04 kg/m<sup>3</sup> – 889,24 kg/m<sup>3</sup>. The viscosity of biodiesel was 2,8 – 3,3 cS. The Acid number of biodiesel was 0,228 – 0,789 mgKOH/g. Water content of biodiesel was 7,189 – 7,981 %. Flash point of the biodiesel was 34 - 48 °C. From the analysis of biodiesel parameter, the biodiesel was meet the needs of SNI 04-7182-2006 Biodiesel Standard. And compared to the diesel fuel, all the parameter closed to diesel characteristic.

**Keywords:** biodiesel, KOH, coconut oil, PFR

EN-1130-168

ROOM: BRI-15

13:40 - 13:50

### Enhancement in welding performance of 2% maximum weld repair policy

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**Abstract** - In the implementation of welding work on a modular oil & gas fabrication project at PT. X Batam, to get welding results that are 100% very difficult to achieve and always obtain welding results through visual inspection tests and Non-Destructive Test is rejected or defect that the repair welding must be done to fix it. The causes of welding repair are classified into two, namely repair due to lack of skill welder or due to engineering aspects. With that the management of PT. X Batam issued a policy of 2% maximum welding repair for each structural welding job as a KPI's and part of the company's quality manual to monitor and control of welders performance in every project implemented. From the results of the 2% maximum KPI welding repair policy obtained significant enhancement on the performance of welders in every project undertaken and shown from the results of KPI values in 2014 the TEN FPSO Ehouse project was 1.2%, in 2015 the FPSO Kraken PGM project was 1.5 %, in 2016 the Ghana PGM FPSO project is 0.8%, in 2017 the Adolo Compressor FPSO project is 0.75%, in 2018 the ECO Area Ehouse project is 0.65% and in 2019 is ongoing the BGC TEG Regeneration unit project is 1.25%.

**Keywords:** -

**EN-1204-217**

**ROOM: BRI-15**

**13:50 - 14:00**

### **Prototype of Data Logger as A Wind Energy Monitoring**

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**Abstract** - The need for fossil energy is increasing every year. Not only in the sector of community needs, but there are still many power plants in Indonesia that are still dependent on non-renewable energy. Therefore, there is a need for innovation to utilize a large number of renewable energy sources. Wind energy is one of renewable energy source that considered a hope as a clean and sustainable energy. To be able to optimize the potential of wind energy, a system must be designed that is continuously able to carry out the process of monitoring wind energy data. . The use of a data logger can help provide a solution to the technological needs that are suitable to be applied in mapping energy potential. The types of sensors used in this study include anemometer and wind direction as a measure of wind energy potential, and also solar power sensors and BME280 as a measure and monitoring of solar energy potential. The sensor data stored is around 4,320 data per day presented in CSV file format. The experiment was carried out for 5 days, producing the highest average wind speed data on day 4 with a speed of around 10 m / s at 8 AM.

**Keywords:** Wind energy monitoring; data logger; renewable energy; Arduino

**EN-1204-226**

**ROOM: BRI-15**

**14:00 - 14:10**

### **Start Priority Determination Methode of Gas Turbine in Block System of Combine Cycle Power Plant (Case Study: PT PJB Unit Pembangkitan Gresik)**

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**Abstract** - Jawa Bali System is an integrated electricity system among hundreds of power plant with millions electricity consumers around Jawa, Madura and Bali islands. In order to achieve minimum operational cost, Start/Stop scheduling and load distribution are implement based on the economical factor of power plant. Power plant scheduling in Jawa Bali System is based on the order from the lowest production cost power plant until the highest production cost power plant. This list is call with merit order. PT PJB Unit Pembangkitan Gresik is a part of Jawa Bali System. PT PJB Unit Pembangkitan Gresik consist of 3 Blocks of Combine Cycle Power Plant. Each Block consist of 3 units of Gas Turbine. Merit Order from PT PLN for Combine Cycle Power Plant is determining in block entity. Because in one block of Combine Cycle Power Plant consist of 3 units of Gas Turbine, therefore emerge a problem of how to determine the start priority of Gas Turbine. In general, Gas Turbine with the best operational performance have to prioritise to start first PT PJB UP Gresik also have Key Performance Indicator (KPI) on the annual performance contract that affected by the operational performance of the Gas Turbine. Two influential criteria that affect operational performance of Gas Turbine are reliability and efficiency. In daily Jawa Bali System operation that based on merit order, there will be a chance the Gas Turbine is in operate, stop or start/stop condition. Therefore, a methode that consider the unification value of reliability and efficiency is needed to determine the start priority of Gas Turbine in order to meet the demand of Jawa Bali System and to optimize the achievement of annual performance contract of PT PJB UP Gresik. In this research, author propose a methode to determine the start priority of Gas Turbine by phase as follows: Analytical Hierarchy Process (AHP) methode to determine the comparison value of reliability and efficiency. Reliability Block Diagram (RBD) methode to determine the reliability and failure probability of Gas Turbine and heat rate calculation methode to determine the amount of fuel energy to produce electricity per kwh unit of Gas Turbine outcome. The weighted value of reliability multiply with failure probability are convert to the potensial losses production of Gas Turbine.

Meanwhile, the weighted value of efficiency multiply with heat rate value are convert to fuel cost. Start priority of Gas Turbine is determine by the unification value of potensial losses and fuel cost of Gas Turbine, start from the Gas Turbine with the lowest unification cost until the Gas Turbine with highest unification cost.

**Keywords:** Gas Turbine, efficiency, heat rate, reliability, start priority, Analytical Hierarchy Process (AHP), Reliability Block Diagram (RBD)

**EN-1206-279** **ROOM: BRI-15** **14:10 - 14:20**

### **An Experimental Study on the Effect of Connection Types on Frame Using Cold-Formed Steel**

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**Abstract** - The growth of construction technology, innovations using cold formed steel materials have begun to be developed in ordinary earthquake resistant buildings. In addition, those materials lighter and cheaper instead use conventional steel material. In building construction, the weakest part of the structure is the connections. Many cases of building failures occur due to collapse in the connection of structures. In this research an experimental study will be carried out on the frame structure of buildings using cold formed steel with variations in the connection of beam-column given lateral loads as a representation of earthquake loads to determine the type of effective connection on the structural performance. Specimens in this study are one bay two stories frame with a height of 500 mm each floor and 500 mm length. For the column structure and beam structure using rectangular profiles cold formed steel with a size of 40x40x0,4 mm and 20x40x0,4 mm respectively. Variations used are the type of connection of bolt-nut and self-drilling screw. Loading test is performed on the loading frame by giving a lateral load at the upper end of one of the portal sides with a four-cycle cyclic load with displacement control. From the results of the hysteresis curve found that the performed of frame model with a bolt-nut joint has a greater both maximum lateral load and dissipation energy 19.8% and 25.9% respectively than the performed of frame model using self-drilling screw connection.

**Keywords:** Cold formed steel, earthquake resistant building, structural connection, experimental study.

**EN-1206-283** **ROOM: BRI-15** **14:20 - 14:30**

### **Experimental Studies of Connection Arrangements to Stiffness and Energy Dissipation in Cold-Formed Steel Frames**

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**Abstract** - Indonesia is located in earthquake prone areas that can cause damage to infrastructures as well cause huge losses both in terms of economic and loss of life. Hence to minimize the impact of damage caused by the earthquake, efforts are needed in designing earthquake resistant buildings. One of the newest materials used in building construction is cold-formed steel. The purpose of this study is to investigate the effect of connection variations on the cold-formed frames under seismic loads. The model used in this study is two-story one-span frames with variations in the shape of the connection plates and variations in the connection distance of the self-drilling screw which are loaded by four step cyclic loads using displacement control. The steel profile used is the hollow square 40,40,0.4 for the column structure, and the hollow square profile 20,40,0.4 for the beam structure. Variation in the shape of connection plates used are the shape of triangle and the shape of angle, while the distance variation of connection is distance of 12 mm and distance of 22 mm. The test results from hysteresis curves show that the model with plate shape of angle connection has structural stiffness and energy dissipation better than the model with plate shape of triangle connection although it is not too significant. Whereas the model with 12 mm connection distance has structural stiffness and energy dissipation which is almost the same as the connection distance of 22 mm.

**Keywords:** Cold-formed steel; Connection; Frame model; stiffness; energy dissipation.

**EN-1207-302** **ROOM: BRI-15** **14:30 - 14:40**

### **Simulation of Syngas Production through Plasma Gasification from Indonesian Low-Grade Coal as a New Energy**

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**Abstract** - The plasma gasification is a novel technology of gasification process for conversion of coal or biomass to syngas. The end use of syngas is varied from raw chemical material, fuel either gas or liquid or electricity. Fluidized-bed gasification reactor is used in this simulation with the advantages of high heat transferred and easy handling of feedstock. The majority available coal in Indonesia is low-grade coal, the conversion is considered as a New Energy. The process of syngas production by means of plasma gasification in fluidized bed reactor is modeled under thermochemical equilibrium with the Gibbs free energy approach. The aim of simulating the coal gasification with the use of various gasifying agent such as of mixture of steam and oxygen; mixture of steam; and air and pure steam is to give overview of the process. The effect of various gasifying agent were studied with the focus of syngas composition and cold gas efficiency in consideration of reaction temperature and steam flow. It was found that the type of gasifying agent has significantly affect the energy indicators instead of steam / coal flow.

**Keywords:** Plasma Gasification; Low-Grade Coal; Syngas Production; Gasifying Agent

EN-1207-336

ROOM: BRI-15

14:40 - 14:50

### The energy spectrum of imperfect Kronig-Penney model

Abdurrouf

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**Abstract** - In this work the influence of imperfections of the potential of Kronig-Penny on its energy spectrum is investigated. This model is solved by our newly developed filter method. Imperfections are achieved by removing some potential barriers or changing the width or height of the potential. For the imperfect Kronig-Penny model we observe some energy states in the band gap area. This result is very important for the investigation the properties of heterostructure material.

**Keywords:** -

EN-1207-368

ROOM: BRI-15

14:50 - 15:00

### Characteristics of cassava starch for triboelectric nanogenerator dielectric films

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**Abstract** - The application of the use of bio-based nanogenerator triboelectric dielectric films continues to experience development. Until now only a few bio-based materials have been carried out further research. This study conducted the characteristics of cassava starch using low cost techniques. The results of the new TENG based on cassava bio-starch showed the thickness of the film had an influence on the electricity output produced. experimental tests, estimated values of open circuit voltage (VOC), short circuit current (ISC), and output power density vary from 60 mV to 300 mV per area of 4 cm<sup>2</sup>. 6  $\mu$ A, and 37.64  $\mu$ W / cm<sup>2</sup>. The thicker the film produces the lower the electrical output. In addition, FTIR-ATR analysis showed no chemical modification was made on the starch surface after casting. This shows that pure starch can be applied to triboelectric nanogenerator dielectric films. In addition, bio-based dielectric film material results in the development of environmentally friendly TENGs with excellent performance.

**Keywords;** Triboelectric nanogenerator (TENG), Energy harvesting, cassava starch

EN-1122-076

ROOM: BRI-15

15:05 - 15:15

### The Effect of Guide Vane Angle on Vortex Flow Reaction Turbine on Power and Efficiency

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**Abstract** - The potential for hydropower in Indonesia reaches 75,861 MW including the potential of mini / micro hydro resources. Renewable Energy has not been used entirely as a power plant, only about 6.8% of the total energy used by Indonesia. The vortex turbine is a turbine that utilizes vortex flow to rotate turbines and generators. The purpose of this research is to know the effect of angle variation of guide vane on power and efficiency in vortex turbine. This research uses experimental method using angle variation of guide vane with angle improvement of  $\frac{1}{2}$  radius of diameter turbine, that is 17.8°, 13.3°, 7.3°, and 0° (without guide vane). The guide vane is installed, then tested on the vortex turbine trainer for power and efficiency. This research results that with an increase in the valve opening angle the capacity of the flowing is higher so that it occurs causing an increase in turbine power. Using the Guide Vane produces higher power than without a guide vane at the inlet. The highest power is found in the Guide Vane with an angle of 17.8° at a capacity of 8.1327 L / s that is 23.06 Watt with a loading of 25.000 g, followed by a Guide Vane with an angle of 13.3° and the lowest is in the angle of the Guide Vane 7.3°. While the highest efficiency is found in the Guide Vane with an angle of 17.8° at a capacity of 5.6472 L / s that is 57.26% with a loading of 15.000 g,



followed by a Guide Vane with an angle of 13.3° and the lowest is in the Guide Vane angle 7.3°. This is because, without using the guide vane many streams directly touch the turbine blades without forming the vortex flow first. Improved guide vane angle causes the passage of the incoming stream of water into the basin becomes narrower, so that the flow of water can form a vortex first before touching the turbine blade.

**Keywords:** angle of guide vane, guide vane, vortex turbine.

**EAPS-1207-389** **ROOM: BRI-15** **15:15 - 15:25**

### Apperent Earth Resistivity Measurement with DC and AC 25-600kHz Exiter

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**Abstract** - One-point position apparent resistivity of the earth measured with Wenner electrode configuration. The exiter changed from DC interrupted, to AC 25-600kHz. The AC 25-600kHz signals that are used as exiter are pulse signals generated from H-bridge. When DC axiter applicated, the apparent resistivity of earth can be found. DC exiter polarity are changed for avoid error measurement caused material polarization. This method is widely used to measure resistivity. The geoelectrical measurement is carried out by recording the electric potential arising from two electrode which caused by current flow into the ground. When AC 25Hz applicated, apparent resistivity is found. For AC frequency exiter are variated from 25Hz – 600kHz, the resistivity value is not constant. Resistivity changes with frequency. It indicates that the earth is not only the resistance, but earth structure has complex resistivity, which have capacitive reactance and inductive reactance too, and others. This study aims to find the correlation between frequency exiter with complex reactance on one-point apparent resistivity, and compared with DC resistivity. In this study, researcher have found that the higher frequency caused the voltage fall down.

**Keywords:** Apperent resistivity, complex resistivity, exiter

**EAPS-1206-286** **ROOM: BRI-15** **15:25 - 15:35**

### Sutami Dam Rocks Contact Identification Using Magnetic Method

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**Abstract** - Rock Contact Research has been conducted in Sutami Dam using magnetic method. The purpose of this research is to see the contact of the rocks at Sutami Dam based on the results of magnetic data processing. Sutami Dam is part of Karangates Dam. The Karangates Dam is used as a hydroelectric power station, tourist spot, flood controller and irrigation. Geographically, these magnetic data acquisitions start from the Kromengan region (112.494°E; -8.129°S) to the Sukorame region (112.358°E; -8.213°S) by using the Proton Precession Magnetometer G-856. The acquisition Radius of magnetic data is 15 km with spaces between points of 300 meters. The contact of the rock is a touch boundary between the two distinct rock units of the lithological feature as the basis for the differentiator of these rocks. By using the magnetic method, it is obtained contact rock between the sediment of Kawi Butak mountain and sea sediment based on the value of anomalous residue.

**Keywords:** contact rocks; magnetic; Sutami.

**EAPS-1206-288** **ROOM: BRI-15** **15:35 - 15:45**

### The Identification of Iron Sand's Distribution Pattern Using Magnetic Method in Jolosutro Beach area Blitar Regency, East Java

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**Abstract** - This research aims to determine the spread of iron sand around Jolosutro beach which is located at Ringinsari Village, Wates subdistrict, Blitar Regency, East Java. Iron Sand is one of the minerals in East Java which has a lot of benefits. The presence of iron sand in the research area is thought to derive from the concentrated placer deposits along the Ringinrejo River and the weathering which then settlers around the Ringinrejo River and Jolosutro Beach. The method used in this research is the geomagnetic method with the acquisition of data using geometrics type G-856 ppm instrument. There is a total of 806 measuring points with an area of 2500x3000 meters and a space of 100 meters. Interpretation is carried out based on the rocks' distribution parameters and regional geological information of the research area so that the pattern of the spread of iron sand around Jolosutro beach can be drawn.

**Keywords:** Geomagnetik; Jolosutro Beach; Iron Sand.

**EN-1207-355** **ROOM: BRI-15** **15:45 - 15:55**

**"Smart Charger Machine" (MACHA) Alternatif Charging Untuk Pengguna Smartphone**<sup>1</sup>Tito Yoga Ramadhona, <sup>2</sup>Intan Octavia<sup>1</sup>Civil Engineering, Faculty of Engineering Muhammadiyah University of Yogyakarta<sup>2</sup>Islamic Economic, Faculty of Islamic Studies Muhammadiyah University of Yogyakarta<sup>1</sup> [tityogar25@gmail.com](mailto:tityogar25@gmail.com); <sup>2</sup> [achfaorkha@gmail.com](mailto:achfaorkha@gmail.com)

**Abstract** - More than 85 percent of the human population performs its activities both in the fields of business, education, entertainment and news as well as the latest information with a device called a gadget which is a tool to help people in doing almost as much as their activities related to technology communication. But this device itself is not a tool that has the power that can be used continuously. The power used is a type of Li-Po battery (lithium ion poly) which has a power limit ranging from 3500 Mah to 5000 Mah to be used, so the device that is widely used today only lasts not until 8 hours if used continuously. Therefore, researchers make a tool that is able to help all activities related to the device become easier by providing tools called "smart charger machines (MACHA)" in places where the majority of visitors are device users. By adopting the same method as the vending machine system, it is hoped that the tools we make can be useful for user devices to be able to do all their activities without having to worry about the power of the device.

**Keywords:** smart system charging; solutions; benefits

**EN-1207-360****ROOM: BRI-15****15:55 - 16:05****Utilization of New Renewable Energy Technology (EBT) in Supporting Economic Resilience (Study on Nipah Island)**<sup>1</sup>Panji Suwarno, <sup>2</sup>Purwanto, <sup>3</sup>Sri Cempaka Prima<sup>1</sup>Lecturer of Defense Management, Indonesia Defense University<sup>2</sup>Head of Maritime Security Study Program, Indonesia Defense University<sup>3</sup>Student of Maritime Security, Indonesia Defense University<sup>1</sup> [suwarnop@yahoo.com](mailto:suwarnop@yahoo.com); <sup>2</sup> [purwanto@gmail.com](mailto:purwanto@gmail.com); <sup>3</sup> [cempakaprimasri@gmail.com](mailto:cempakaprimasri@gmail.com)

**Abstract** - Indonesia has unlimited potential energy sources, such as seawater, wind and solar. However, its utilization as a new renewable energy source is still minimal. On the other hand, Indonesia still needs a lot of electricity which continues to increase every year in line with increasing economic growth. So far, electricity is still using fossil fuels, namely oil and coal, but over time they will be reduced and will even run out. The government is currently also targeting to increase electricity capacity by 35,000 MW. The addition will be done by paying attention to environmental aspects and not just relying on fossil-based energy sources. This study aims to utilize energy derived from seawater to produce electricity and freshwater that is ready for consumption and meets daily needs. The research location is Nipah Island, which is the outermost island directly bordering Singapore. The results showed that the application of technology by utilizing seawater as a new renewable energy source that can produce electricity and fresh water is very efficient and will be able to increase the economic resilience of the communities around Nipah Island. Langenburg Technologies (LT) exists as an alternative EBT in Indonesia that uses advanced technology (advance quantum mechanics-based technology). This technology generates large-capacity electricity and can also produce clean water ready to drink from seawater (saltwater desalination), wastewater, swamp water, brackish water, and various toxic wastes. It is expected that with the use of this technology, the economy around the Nipah Island region will improve and the provision of ships that have been in the Port of Singapore will switch to the Indonesian region.

**Keywords:** New Renewable Energy; Langenburg Technologies, Seawater, Nipah Island, Economic Resilience.

**EN-1207-344****ROOM: BRI-15****16:05 - 16:15****Study on Potential Development of Sea Wave Power Plant as A Defense Energy Support (Case Study: Pelabuhan Ratu Waters of Indian Ocean, West Java)**<sup>1</sup>Herning Pramudya, <sup>2</sup>Donny Yoesgiantoro, <sup>3</sup>M Ikhwan Syahtaria, <sup>4</sup>Maharanni C Wohon<sup>1, 4</sup> Postgraduate Indonesia Deffense University<sup>2, 3</sup> Lecturer Indonesia Deffense University<sup>1</sup> [herningpramudya@gmail.com](mailto:herningpramudya@gmail.com); <sup>2</sup> [energyprogram@gmail.com](mailto:energyprogram@gmail.com); <sup>3</sup> [Syahtaria90@gmail.com](mailto:Syahtaria90@gmail.com); <sup>4</sup> [friskawohon@gmail.com](mailto:friskawohon@gmail.com)

**Abstract** - Indonesia is a country that has a vast ocean area of 3.25 million km<sup>2</sup> which is wider than its land area. Natural resources contained in the ocean of the archipelago have enormous potential to be developed into renewable energy (RE) sources, one of which is sea waves. Utilization of sea wave energy that is converted into electricity is very likely to be developed in Indonesia, especially on the outside of the archipelago given the geographical position of Indonesia which is located between two oceans namely the Indian Ocean and the Pacific Ocean. In terms of defense, the availability of electrical energy is needed to overcome the real and potential threats that may occur. The event of power outages in most of the island of Java has become a very valuable lesson to work for electrical energy security, so that it does not happen again. One area that has a strategic position in the defense sector is Pelabuhan Ratu, so it needs to be given attention to the availability of electricity. This study aims to

examine the potential of ocean wave energy that can be developed into power plants in the waters of Pelabuhan Ratu. Researchers used descriptive qualitative research methods with the analysis of literature studies and supported by secondary data from the processed data from the Meteorology Climatology and Geophysics Agency (BMKG) in June, July and August 2019. The results showed that the potential for sea wave prediction generated had maximum electrical energy 1,208,742 Watts and a minimum of 6,642,796 Watts. So it can be concluded that in Pelabuhan Ratu waters has the potential for the construction of sea wave power plants (PLTG) which are very useful as supporting defense energy as well as supporting the needs of maritime development in the area.

**Keywords:** potential; sea wave energy; PLTG; defense energy

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**CE-1119-060** **ROOM: FIB-1** **13:30 - 13:40**


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**Change Management to Support Institutional Change of Higher Education Status Based on Kotter's Model**

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**Abstract** - Change Management needs to be implemented at Akademi Telkom Jakarta, due to institutional changing to be Institute level. This paper aims to support successful change management for academic communities of Akademi Telkom Jakarta and Telkom Foundation to implement successful change to be Telkom Institute of Technology. Method conducted in this paper is to implementing change management based on Kotter's model and accessing featuring Sodano's perspective. Some workshops conducted to evaluate the process of implementation and data analysis. Result include best practice recommendation and the readiness level towards new institution.

**Keywords:** Change management; readiness; Kotter's model; Akademi Telkom.

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**CE-1127-099** **ROOM: FIB-1** **13:40 - 13:50**


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**An Empirical Study on Cross-cultural Adaptation of Chinese Overseas Students in Malaysia: Survey of Chinese Students at Segi University, Malaysia**

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**Abstract** - China has become the world's largest exporter of study abroad students, under the One Belt, One Road (OBOR) initiative. Chinese overseas students have more chances to study in the OBOR countries members compare than ever before. However, before planning to study abroad, Chinese students expect that their study and life run would well. When they arrived in the destination of study and spent several months living there, they confronted the real situation or gap between their expectations and the actual situation in the new environment. This current study used cross-culture adaptation theory and model to describe their situation and adaptation. In this study, the results of the qualitative and quantitative research method showed that the differences between expectation and actual situations faced by the Chinese students were caused by some obstacles, such as the English barrier, psychological preparation, and participation in local social life. Furthermore, based on their cross-cultural difficulties, it is technically crucial to provide some countermeasures and suggestions for improving the cross-cultural adaptability of Chinese overseas students.

**Keywords:** One belt one road initiative; expectation and actual situation; cross-cultural adaptation.

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**CE-1129-140** **ROOM: FIB-1** **13:50 - 14:00**


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**Mother's Involvement in Nurturing Toddlers in School**

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**Abstract** - Children are valuable assets owned by mothers, so mothers want children to grow and develop well to get an education and develop their potentials and skills optimally. Therefore, mothers in educating and raising children have to be able to prepare children to become independent adults with good characters and manners. So, in the process of parenting, the family becomes the main environment known to the child. The implementation of the involvement of mothers in this nurturing is to increase insights and knowledge. An effort made by the school is to provide parenting material delivered by the teacher so that mothers can be actively involved in children's activities at school and at home. There are several aspects of maternal involvement, namely the role of the mother, self-efficacy and the opportunity or demand to be involved. The supporting factor of this involvement is that some mothers can communicate well directly to share information. The obstacle experienced by mothers is to divide the time when the mother is busy working by giving care to her children. Besides, the pattern of care provided between mothers and caregivers is different each day. Another limiting factor is that mothers cannot always be involved in children's activities carried out by the school.

**Keywords:** Involvement; Implementation; Childcare

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**CE-1127-103** **ROOM: FIB-1** **14:00 - 14:10**


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**Indonesian Drama Film Poster in the 70's Era**

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**Abstract** - In the 70s era one of the people's entertainment watched movie theaters. Film posters is the main media for promotion of the movies that time. Movie posters were painted manually and done by the team. Movie posters were made to promote the film that would be shown in the movie theater. The film posters researched were limited in drama movie that was cast by children. This study used a qualitative method to describe the design of 70s era Drama movie posters involving children as the cast. The results of this study are 1) in terms of visual drama movie posters in the '70s, the illustrations were in realist style, the main character was drawn bigger than the supporting cast. The realist style expressed the mood of the cast which were sad, crying, surprised, happy etc. There were no scenes in the film shown in the illustration. 2) Typography used in posters varies. The title uses serif letters and scripts depicting that the drama film depicts conditions according to reality of the film lead the feelings of the audience softly. The cast in the film was written in san serif letters that had high legibility. The background was depicted in colors with a brush stroking technique.

**Keywords:** Drama; Poster Film; 70's.

CE-1127-106

ROOM: FIB-1

14:10 - 14:20

### A Study of Gender Differences On Food Reviewing

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**Abstract** - There are numerous previous studies that have investigated gender differences on both spoken and written discourses. However, little attention has been given on gender differences within social medias, particularly YouTube. As vlogging has risen to popularity, there is a particular group of YouTubers worldwide that focus on a specific area, which is food review, hence the well-known title Food Reviewers. In Indonesia, the popularity of food reviewing through YouTube has influenced both male and female content creators to dedicate their YouTube channels solely for reviewing food. This study then aims to observe the differences of language use between male and female food vlogger through their videos on YouTube. To obtain meticulous analysis, the researchers use systemic functional grammar to observe language differences and variations between the two genders and relate the results with genderlect theory proposed by Deborah Tannen (1993). The data will be taken from two popular food reviewers in Indonesia, Ria SW and Nex Carlos, whose subscribers have reached more than 2 million subscribers each. From these two subjects, the researchers will take two of the most popular videos of them, so there are four videos in total to analyse.

**Keywords:** Gender Differences; Food Reviewing; Language Variation; Systemic Functional Grammar; Assertiveness

CE-1127-101

ROOM: FIB-1

14:20 - 14:30

### Cross-cultural Management and Recommendations for Chinese Students Studying in Malaysia

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**Abstract** - China has been publicly seeking to take the lead in globalization, developing its higher education and research systems at speed and actively pursuing to cooperate with academic partners along the New Silk Roads. When Chinese students come to countries along the Belt and Road of different cultural habits and religious beliefs, how to help them to solve cultural barriers has become an urgent problem. The paper used cross-cultural management theory to explore the connotation of cross-cultural management of Chinese students, to understand the cross-cultural barriers, and to analyze the cultural differences of Chinese students in Malaysia. The research results revealed that there were some shortcomings in the cross-cultural management of Chinese students, including insufficient English language training for Chinese students, the difficulty in understanding cultural differences, and low classroom participation. By performing direct interviews, there was a high demand for academic guidance, psychological counseling, and employment assistance for Chinese students. Finally, analyzing the cultural differences of international students and evaluating cross-cultural management in a targeted manner was significantly important to reduce cultural conflicts, improve the quality and efficiency of the inter-cultural relation, and enhance the competitiveness of Chinese students in the global market.

**Keywords:** One belt one road; higher education; cross-cultural management; Chinese students.

CE-1129-142

ROOM: FIB-1

14:30 - 14:40

### The Effect of 3M Plus Program Training to Knowledge, Attitude, and Practice of Elementary Students

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**Abstract** - Dengue hemorrhagic fever (DHF) is one of major public health problem in Indonesia. There is increasing incidences of DHF in 2015 than previous year. Community participation to control DHF very needed, especially students to instill practice for eradication mosquitos' sources in earliest age. This study aimed to know about effect of 3M Plus program training to knowledge, attitude, and practice of elementary students in Elementary School X Kediri City. This research used quasi experimental with one group pretest posttest design and involved 123 elementary students as respondent. McNemar test and Wilcoxon test were applied to analyse these researches. There was a significant result between 3M plus program training to knowledge level (p 0,000), attitudes (p 0,000), and practices (p 0,000) of elementary students in Elementary School X Kediri City. There was influence of 3M plus program training on larvae density by Container Index (p 0,000). There was significant effect between 3M Plus program training towards knowledge, attitude, and practice of elementary students in Elementary School X. There is a need to increase health education activities to raise knowledge regarding dengue fever. Strengthening student knowledge and attitude would elevate community participation and cultivate better preventive practices among the public to eliminate dengue fever in the country. Furthermore, wide range of information, skills, and support must be provided by the government to increase dengue awareness among student.

**Keywords:** dengue; knowledge; attitude; 3Mplus; elementary students

CE-1129-144

ROOM: FIB-1

14:40 - 14:50

### The Significance of Japanized-English Variety in an EFL Learners' Written Outputs

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**Abstract** - The EFL speaker from Asian continent uses English as means of communication in their daily basis of communication. From all of these rich cultured Asian countries, there are no doubt consist of many fascinating English varieties, one of the distinctively well-known is the Japanese-English register which can be found only in Japan. This study aims to define a focal issue on whether the Japanized-English variety be acceptably validated within the discourse of English language acquisition. The scope of this study is within the concepts of creative writing learning, constructing process and World Englishers. The respondents are EFL native Japanese speakers with an overall TOEFL iBT scored at least 79 points or IELTS scored at least 6.5. The creative writing outputs are analyzed based on the way the given characters and settings being portrayed through each of the respondents' writings. By looking at the presupposed Japanized-English terms or '*wasei-eigo*' variety from the participants' written outputs. From the acquired data resources, it is be concluded that the Asian Englishers of Japanized-English or *wasei-eigo* should be an accepted variability in L2 learners' production, especially in its own natural habitat. In the future, there should be an extensive consideration of English proficiency in the Asian context highlighted by the need for a new, or at least reconfigured, interface between second-language acquisition research and World Englishers.

**Keywords:** World Englishers; Asian Englishers; wasei-eigo; creative writing; culture

CE-1129-148

ROOM: FIB-1

14:50 - 15:00

### Student's Perception in Learning Bahasa Indonesia from Conventional to Blended Learning Model

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**Abstract** - This paper aimed to find out the way to overcome the problems of students' motivation and lack of time in learning Bahasa Indonesia, and also how to make effective Bahasa Indonesia language learning model at Bina Nusantara University. The research applied a qualitative method by distributing online questionnaires to 68 freshmen and sophomore students of Bina Nusantara students who took Bahasa Indonesia subject on the 2<sup>nd</sup> semester of 2018-2019 term. Data were analyzed by tabulation and it can be concluded that there are three factors which motivate students in learning Bahasa Indonesia. Students consider that there are no obstacles in lack of time during their six class sessions. Students also consider that the new learning model for Bahasa Indonesia course is not essentially required.

**Keywords:** perception; blended learning; university students; Bahasa Indonesia.

CE-1130-155

ROOM: FIB-1

15:05 - 15:15

### Automatic Speech Recognition in Computer-Assisted Language Learning for Individual Learning in Speaking

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**Abstract** - Speaking is one of language skills that students have to master in learning a language. At times students feel anxious and pressurized when practicing speaking in front of instructor or other people. Therefore, an atmosphere that encourage students to practice their speaking is needed. This atmosphere can be obtained by using automatic speech recognition where student can practice their speaking individually without feeling anxious or pressurized, because students practice in front of a computer. This study used research and development design as it tried to develop a product which can create an atmosphere that encourage student to practice their speaking. This study used questionnaire as data collection technique. While, the participants of this study were five undergraduate students of English Education Program of Universitas Brawijaya. This study developed a product which utilised automatic speech recognition technology. The product was developed using C# programming language. This study revealed that the product developed using automatic speech recognition can make students to practice speaking individually without feeling anxious and pressurized. Based on the result, few suggestions are given to student, instructor, and further researcher. For students, it is suggested to use the product to practice speaking individually. For instructor, it is suggested to use the product to practice student speaking if they cannot give face-to-face practice. For futher researcher, it is suggested to conduct a research using automatic speech recognition focuses in another speaking skills, such as pronunciation and intonation.

**Keywords:** automatic speech recognition; computer-assisted language learning; speaking

CE-1130-174

ROOM: FIB-1

15:15 - 15:25

### Literacy Breakthrough toward Indonesian Disaster Mitigation

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**Abstract** - Indonesia is in one of the world's most natural disaster-prone areas and is at risk to multiple hazard. The National Disaster Management Agency or *Badan Nasional Penanggulangan Bencana* (BNPB) records that the number of natural disasters during 2019 is 3,271 events excluding human-caused and other incidents of mass trauma. Foreigners from various countries have been offering partnership in volunteering for disaster recovery, risk reduction, preparedness, and financial activities. In 2004, deathly Tsunami struck Indonesia and more than 4000 foreign volunteers participated for the disaster recovery. Despite growing interest in international volunteerism, Indonesian volunteers face a challenge in language and culture differences. A study conducted by Talarski (2014) investigated cross cultural immersion in Tanzania and Zambia found that foreign volunteers have greater understanding of the local culture because the local volunteers welcomed them as the part of their community. It shows that well preparedness of the local brought impacts to culture immersion. Indonesian volunteers should be ready in terms of partnership to foreign nations especially in communication and culture immersion. To overcome the problems, English and cross culture literacy are essential to put into practical to fill the gap due to language and culture differences. Thus, this paper is intended to offer literacy as a breakthrough toward disaster mitigation during the actions. Therefore, English and cross culture literacy are needed to understand and to practice before the voluntary mission.

**Keywords:** *English literacy; disaster mitigation; cross culture communication*

CE-1201-185

ROOM: FIB-1

15:25 - 15:35

### Blue (Carbon) Accounting in Activity *Patorani*: Is That Important for Sustainability?

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**Abstract - Purpose:** The purpose of this study is to provide an understanding the practice of carbon accounting at sea originating from the activity of fly fish fishermen (*patorani*). **Design/methodology/approach:** Sustainability theory provides a theoretical framework for the analysis of this interdisciplinary research. Literature review and data collection (dialogue, observation, and documentation) support the development of environmental accounting that contributes to the practice of sustainability, especially marine ecosystems in Indonesia. Researchers used qualitative methods with interpretive paradigms and ethnomethodology approaches. **Findings:** *Patorani* use ships with have 3 (three) machines. Calculation of time, distance, and fuel oil can minimize carbon pollution generated by ship engines. The use of ship engines produces carbon emissions of 1.567,128 TonCO<sub>2</sub>e / season. Blue accounting (carbon) as an accountability process plays an important role in maintaining the sustainability of the sea and air in Indonesia, as well as contributing to the reduction/increase in global warming. **Research limitations/implications:** Researchers have limited time and money due to the breadth of Indonesian waters. Finally, this article recommends to the relevant parties, especially the Ministry of Maritime Affairs and Fisheries of the Republic of Indonesia to exercise strict control over carbon. **Originality/value:** This

article is carried out on a fishing community that makes long-distance fishing, months and requires tons of fuel to travel from one island to another or from sea to sea. The article offers an item in reporting the use of carbon in the ocean which can be initiated through ministerial or regional regulations

**Keywords:** Blue, Carbon, Sustainability Accounting

**CE-1203-205** **ROOM: FIB-1** **15:35 - 15:45**

### Development Telegram BOT: Short Story Lesson

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**Abstract** - The purpose of this study was to determine the validity of telegram BOT as a learning media for Indonesian language lesson package C equality program in Sanggar Kegiatan Belajar (SKB) Kabupaten Sleman and SKB Kabupaten Bantul. The population of the study was 67 students and the sample were 35 Students package C equality program in SKB Kabupaten Sleman and SKB Kabupaten Bantul. This research is research and development (R&D) which using ADDIE models. Data collected by using questionnaire. The result showed of this study showed that telegram BOT on short story lesson package C equality program in Sanggar Kegiatan Belajar Kabupaten Sleman (SKB) and Sanggar Kegiatan Belajar (SKB) Kabupaten Bantul has valid with percentage 83%.

**Keywords:** learning media, telegram Bot, package equality C program.

**CE-1207-366** **ROOM: FIB-1** **15:45 - 15:55**

### EFL Teachers' Self-Esteem on the Implementation of Pedagogical Competence in Teaching Practicum

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**Abstract** - This study highlighted self-esteem needs in order to show its effects on pedagogical competence of the Pre-Service English Teachers during teaching practicum where pedagogical competence refers to how to deal with students on relational and personal. The objective of this study was to analyze the pre-service English teachers' self-esteem toward the improvement of the pedagogical competence before they embark on the initial teacher preparation to explore the real teaching and learning process. The population of this study was the seventh semester of the English Education department of UIN Alauddin Makassar who were conducting Teaching practicum. Sixteen Pre-Service English Teachers were involved as a sample of the study. This study employed quantitative and qualitative method were the data collected by using self-esteem Rosenberg scale, pedagogical competence scale, observation and interview. The data showed that there were 40 percent of Pre-Service English Teachers who have high self-esteem have low teaching competence. On the other side, 30 percent of Pre-Service English Teachers who have low self-esteem were really good on relational and personal to their students. 30 percent of them are not only having high self-esteem but also good pedagogical competence. The data indicated that self-esteem does not have specific influence on the development of pedagogical competencies of Pre-Service English Teachers.

**Keywords:** Self-Esteem; Pedagogical Competence; Teaching Practicum.

**CE-1208-401** **ROOM: FIB-1** **15:55 - 16:05**

### The Application of Bourdieu's Thoughts to Understand Technological Practices in the Culture of Pesantren Education

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**Abstract** - *Pesantren* is a unique and very old Indonesian Islamic educational institution that still survives until now in the digital age. However, the adoption of technology by *pesantren* is often seen as lagging, especially in *pesantren* which still use kitab kuning (Arabic classical texts) with traditional translation methods. By proposing Pierre Bourdieu's theory of practice, this paper evaluates the use of technology by considering the socio-cultural context of *pesantren*. This literature study discusses Bourdieu's thinking, its application in various researches on technology and education, as well as various studies related to the use of technology in *pesantren*. The results prove that Bourdieu's thoughts are very relevant to be applied in analyzing the use of technologies in *pesantren*, not only in formal or informal learning settings in the classroom, but also their use in informal learning outside the classroom and in everyday life. Bourdieu's perspective provides tools to elaborate on the problem of digital divide in *pesantren* education as the implication of social class differences. In addition, his thinking can analyze the ways in which technology is used as cultural capital and social distinction. In conclusion, technological practice according to Bourdieu's thinking is the result of relations between habitus, capital and the arena in socio-cultural *pesantren* context.

**Keywords:** Pesantren culture, technological practice; Pierre Bourdieu.

**CE-1210-408** **ROOM: FIB-1** **16:05 - 16:15**



### Communication Technology and Empowering Muslims to Improve Islamic Brotherhood

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**Abstract** - Communication technology will always change human behavior in communication. The ability of internet technology has proven to be able to provide equal, interactive, and relatively inexpensive communication media for the community. On the other hand, the mass media industry continues to play its role in constructing new social realities following their interests. This paper aims to reveal how new media technology has become the leading media in developing a sense of solidarity among Muslims in order to help one another. For the clerics who do not have access to the mass media industry for various reasons, they are even able to form a real virtual society that has succeeded in carrying out empirical movements. This explorative research succeeded in revealing how a virtual-based shared economy can move the community in helping orphans and poor people, building mosques in deprived areas or converts or Islamic Boarding School for Memorizing Qur'an, supporting the movement of waqf well development, clean water sources in drought areas, to be associated with Muslim issues abroad such as Palestine and Syria. As for religious leaders who do not have access to the mainstream media industry, they form a more interactive and more networked study community through social media. Like Ustadz Adi Hidayat (UAH), who has a study community on FB accounts and Youtube. Bactiar Nashir (UBN), with the account of the AQL Islamic Center institution, is on FB, Youtube, Twitter, and other accounts that display the activities of the mission of UBN. Ustadz Abdul Somad (UAS) and Abdullah Soleh Hadrami with community radio broadcasts and hatibening websites. Internet communication technology is proven to show the empowerment of Muslims to enhance a sense of brotherhood through material and scientific sharing.

**Keywords:** Communication technology; new media; Islamic brotherhood; shared economy; social solidarity.

**CE-1204-227**

**ROOM: FIB-1**

**13:30 - 13:40**

#### The Effectiveness of Mobile Library Services Socialization in Improving Reading Interest in Kabupaten Garut

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**Abstract** - Mobile library service is created in order to improve people literacy and reading interests that is still relatively low in Indonesia. The purpose of this study is to analyze the effectiveness of the mobile library services socialization in improving reading interest. This research adopted qualitative method in the level of descriptive explanation. The survey is observation and interview with several informant related with mobile library services' managerial and user or reader. Mobile library service in Kabupaten Garut was selected as research object. The result of this research showed that the socialization of mobile library services has not effectively increasing people's reading motivation. The transformation of technology was indicated people's behavior in reading. In addition, inadequate facilities and infrastructure became a consideration and should be improved by the managerial of mobile library services. The implication of this research is that this research can be used as a base of public service of mobile library service especially in increasing reading interest.

**Keywords:** People literacy; Library Services; Reading Motivation

**CE-1205-233**

**ROOM: FIB-1**

**13:40 - 13:50**

#### Developing Physics Learning Module Based on Guided Inquiry (PLM-BGI) for Work and Energy

<sup>1</sup>E. Susilawati, <sup>2</sup>A. Agustinasari, <sup>3</sup>A. Samsudin, <sup>4</sup>P. Siahaan, <sup>5</sup>S. Yulianci

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**Abstract** - The aim of this research was to find out the appropriateness of guided inquiry-based physics learning module on work and energy materials. The research method used was research and development (R & D). The development procedure of the module consisted of: identifying the problem, analyzing the module, designing the module, validating the module, and revising the module. The module was validated by the expert, the colleagues, and the education practitioner. There were some aspects used as the assessment indicators among others: content, presentation, language, and inquiry model. The result of the research showed that guided inquiry-based physics learning module which was developed based on the whole result of validation was of very good quality.

**Keywords:** -

**CE-1205-246**

**ROOM: FIB-2**

**13:50 - 14:00**

#### Reinforcing the Culture of Work on Performance Perspective in Lampung Regional Police

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**Abstract** - Indonesian National Police (Polri) meets the challenges in realizing police service quality. It is the fact that police are a protector, public servant, preserver of Security and Public Order (Kamtibmas) and law enforcement. The professionalism of Indonesia National Police is not only the hope of the people, but also it is the responsibility of the National Police. The focuses of problem in this research are: How is the public perception of the Police performance? How to reinforce work culture to improve the performance of Indonesian National Police? The research aims to identify public perceptions of Indonesian National Police's performance and propose strategies to reinforce work culture. The research was conducted in Lampung Regional Police. Data collection technique uses questionnaires to society and interviewing police personnel. The finding of the research indicates that public perception of police performance trends positively: Clarity of service procedures 67.20%; Certainty of service costs 76.22%; Certainty service time 51.10%; Fair service treatment 65.86%; and Service convenience 74.76%. Reinforcing the work culture is carried out by increasing personnel involvement in making decision to encourage commitment of tasks. The involvement of personnel is expected to minimize the resistance in process of change. Awarding can also be carried out as a reinforcement of work culture. The culture of work can also be reinforced by encouraging organization become learning organization, in which organization sustainably develops the capacity to accept and change, share ideas with others, build organization's vision and work together based on plans for achieving the vision.

**Keywords:** Performance; Work Culture; Learning Organization

**CE-1206-254** **ROOM: FIB-2** **14:00 - 14:10**

### Investigating Socio-Cultural Adaptation of International Students in Indonesain Higher Education

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**Abstract** - Positioning higher education in some degree of international standard has been done by many governments by setting internationalization agenda through various programs. In realizing the agenda, challenges emerge since students joining the internationalization program – the international students – need to adapt not only to academic but also social life in foreign country. As setting international standard in academic context can be done based on each study program's underlying theories, setting international standard in social context is more intriguing for there are just too many factors playing roles in human social interaction. The challenge escalates when multicultural issues take part in the interaction. Many studies have been conducted to analyze multicultural interaction in human social life. Some perimeters have also been developed to facilitate the analysis. However, very limited studies are conducted in Indonesian context. Thus, this study is aimed at investigating international students' socio-cultural adaptation process in Indonesian higher education focusing on its correlation with intercultural sensitivity of the students. Using explanatory as well as predictors correlational designs, the study reveals that there is high degree of dependency of the international students on their home country social group due to some reasons.

**Keywords:** -

**CE-1207-299** **ROOM: FIB-2** **14:10 - 14:20**

### Understanding the Visual Impairment Student's Epistemic Beliefs with Low English Lexicons Spelling Competence

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**Abstract** - Learners with visual impairment have different way of acquiring and understanding written material. The learners with visual impairment learn through listening then memorizing the sounds as it is sounded. While writing, both of nondisabled learners and learners with visual impairment urge to recall the words that have been memorized. Learners with no vision will have more difficulties to write the letter because blind encode syllables by the sound as unity of word. The reading problem will affect their writing especially spelling. Since blind encode syllables by the sound as unity of words, they tend to write the words as it is sounded. This affects their English spelling since English words do not spelled as it is sounded. Factors contribute to the spelling errors committed by blind student are lack exposure to the words' formation, inherent of language (silent letter, homophone and borrowing words), different characteristics of L1 and L2, and student's preferences on reading (use-screen readers more than braille text). Research shows that the beliefs individuals hold about knowledge and knowing (epistemic beliefs) influence learning approaches and outcomes. However, little is known about the nature of visual impairment student's epistemic beliefs and how best to measure these. In this case study, one postgraduate student who are visually impaired was asked to spell 50 English words which are closed to their characteristics as the student with different abilities. Interviews also enabled the participant to describe wider range of his epistemic

beliefs. These results indicate that although the visual impaired student has low English lexicons spelling competence, surprisingly he has sophisticated epistemic beliefs which holds implications for further research.

**Keywords:** Visual impairment; Epistemic Beliefs; English Lexicons

CE-1207-306

ROOM: FIB-2

14:20 - 14:30

### The Development of Students' Worksheet Based on Guided Inquiry (SW-BGI) for Work and Energy

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**Abstract** - The aim of this study was to develop an inquiry-based students' worksheet which was applied to work and energy materials. Each stage facilities students to improve their critical thinking skills. The development is carried out in stages, namely preliminary study, planning and goal setting, initial product development, feasibility assessment, limited trials, revision of initial product, field trials, and revision of final product. The students' worksheet was validated by the expert, the colleagues, and the education practitioner. The data validation used questionnaire. Students' worksheet is validated from construction, material and the suitability Inquiry requirements. The students' worksheet revised according to the advice of the experts. It can be concluded that the students' worksheet by using guided inquiry in the category of very feasible so that it could be applied in physics learning.

**Keywords:** -

CE-1207-313

ROOM: FIB-2

14:30 - 14:40

### Differentiated Instruction (DI) Teaching Practice in Heterogeneous Class as the Impact of School Zoning System Policy

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**Abstract** - Most schools in Indonesia who have "excellent" or "favorite" labels generally only accept students with certain academic and financial abilities. This condition causes disparity, especially in public schools which supposed to provide equal education for students from various backgrounds. To overcome this problem, Indonesian government issued the School Zoning System Policy with the aim to increase equality and quality of education. This policy makes prospective students with low academic ability from various backgrounds can enter the excellent/favorite public schools if they live close to the school. However, the policy targets are not only students, but also teachers. Teachers who teach in excellent/favorite schools are considered less motivated because they tend to teach homogeneous classes. The SZS Policy changes the students' ability input in excellent/favorite schools so their classrooms become more heterogeneous and teachers are required to adjust. A teaching method that can be conducted in heterogeneous classrooms is differentiated instruction, the concept of giving different instructions to each student based on their abilities. This paper shows how a teacher in excellent/favorite school handles the changes of students' abilities in her classrooms by using the differentiated instruction approach. This research is a qualitative descriptive study. Data was collected by doing in-depth interview with a teacher in an excellent/favorite public school. The results show that the teacher completely understands and is fully aware of the heterogeneous condition in her class and has conducted the differentiated instruction to deal with students' different abilities. This practice proved successful by the increase of students' grades.

**Keywords:** Differentiated instruction; heterogeneous classroom; excellence school; favorite school; School Zoning System Policy

CE-1207-315

ROOM: FIB-2

14:40 - 14:50

### Developing Visual-Novel Based Learning Application "简单故事" to Enhance Mandarin Vocabulary Skill

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**Abstract** - The growth of China influences the development of Mandarin strictly. It increases the demand of learning Mandarin. However, there are a lot of differences between Mandarin and Bahasa Indonesia such as pronunciation, tones and the characters (汉字 *hànzì*). Bahasa Indonesia uses alphabetic characters, while Mandarin uses the orthographic ones. Therefore, it makes students face difficulties in learning Mandarin. Many learning applications have been developed to enhance students' Mandarin skill, but none of them are exactly suitable with the syllabus in senior high school. This paper aims to propose an application that can fulfill students' needs by developing an application that suitable with the school curriculum. By playing this game, students are expected to learn vocabularies in more attractive way. The developed game uses visual novel (视觉小说 *shìjué*

*xiāoshuō*) game genre. The research design used in this paper is Research and Development (R&D) by Lee and Owens. There are 10 participants selected by random sampling to try this application. The participants involved in this research are students from 10th grade of SMKF Maharani Malang. The result showed that the application can attract students to learn Mandarin vocabularies more. This application is still under the process of development. The application will be revised by considering the evaluation from students.

**Keywords:** Learning Mandarin; Vocabularies; Game; Visual Novel

CE-1207-346

ROOM: FIB-2

14:50 - 15:00

### Undergraduate Students' Perceptions on the Challenges in Writing Research Proposal

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**Abstract** - In order to prepare students' skill of research writing, English Department requires the students to attend the Thesis Proposal Writing (TPW) class in order to make the students familiar with preparing research activity before facing the undergraduate research. The students faced some challenges such as writing the research proposal in English, selecting the right topic, and selecting the right method. This study aimed to examine students' perceptions of challenges in writing research proposal. Survey research design using questionnaire as the instrument was employed to conduct this study. The result showed that the students perceived some challenges in writing research proposal help them to improve the understanding of writing research in several factors.

**Keywords:** students' perception; challenges; research proposal writing.

CE-1207-362

ROOM: FIB-2

15:05 - 15:15

### Do I have Intercultural Competence as Language Learning Outcomes? Cultural-self Awareness in Indonesian-Japanese Workplace

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**Abstract** - The international workplace requires intercultural competence as one of the competencies that should be acquired by foreign language learning graduates from higher education institutions, as well as the linguistic ability itself. However, the foreign language learning curriculum tends to neglect this importance, not to mention in the stages of the learner and user needs analysis, learning objectives setting, and in learning outcomes assessment. Therefore, this pilot study aims to evaluate the intercultural competence of Japanese language learners graduates in universities who work in Japanese companies in Jakarta, Indonesia, in order to provide feedback on the Japanese language and culture curriculum in local universities. Qualitative research methods were conducted through personal-written reflections, interviews, and performative tasks to assess five components of intercultural competence (knowledge, skills, openness, awareness, and self-identity). The participants were two sojourn-experienced and inexperienced Japanese language learning graduates who recently work at Japanese companies in Jakarta. Results show the benefit of using the self-reflection method for developing and assessing the intercultural competence of graduates in their workplace. The participants reflect that their deeper self-knowledge as a critical component of the intercultural competence gained throughout their working experience instead of the learning outcomes in university. Besides, they stated that religious difference is the most challenging aspect of culture that they have to overcome in Indonesian-Japanese intercultural encounters in their work despite in their own country. Results indicate that there should be more efforts to integrate intercultural competence into the Japanese language and culture learning curriculum in local universities.

**Keywords:** intercultural competence; foreign language learning; graduate; workplace

CE-1207-386

ROOM: FIB-2

15:15 - 15:25

### Application of Participatory Leadership of PKBM Heads, Against Tutor Performance at the Kurma Community Learning Activity Center (PKBM) in Alor Regency

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**Abstract** - This study aims to determine the Application of Participatory Leadership of PKBM Heads to Tutors' Performance in PKBM Kurma. This research uses a Qualitative Phenomenology approach with descriptive research type. The subject of the research was the Head of the Kurma PKBM in Alor Regency, East Nusa Tenggara Province in 2018. Data collection was carried out using interview, observation or observation techniques and document studies relevant to the research study. Analysis of research data using a qualitative model interactive analysis procedure with the following steps: (1) Data collection, (2) Data reduction, (3) Presentation of data and (4) Conclusion Withdrawal.

The results of the study showed that: The application of participatory leadership by the Head of PKBM Kurma could influence Tutor's behavior and the progress of PKBM Kurma towards a better direction. Leading Participatory Leadership is focused on: (1) Delegation of authority can increase Tutor's confidence (2) Decision Making is carried out through meetings conducted 8 times a month successfully increasing Tutor involvement in decision making and participating in realizing joint decisions (3) Communication and Communication Channels, Head of PKBM has built multi-directional communication and communication channels that are used through formal and unofficial communication channels. (4) Tutor Development and Empowerment conducted by, giving freedom to Tutors to develop themselves by participating in relevant training (5) Awarding and sanctions in the form of gratitude, giving public praise and reprimand directly and indirectly through meetings from the awarding and sanctions felt by Tutors, they are motivated, feel they are needed at PKBM to continue to work together.

**Keywords:** Application of Participatory Leadership, Head of PKBM and Tutor Performance.

**CE-1210-406**

**ROOM: FIB-2**

**15:25 – 15:35**

### **Students' and Teacher's Readiness on The Flipped Classroom Model in Writing Class**

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**Abstract** - This study aims to investigate the readiness of students and teacher in the implementation of online-based learning with the Flipped Learning method applied in writing class, where students get material online from the teacher and study independently at home. Flipped classroom is basically a combination of e-learning and face-to-face instructional principles. This study involved 30 Indonesian university students and 1 teacher who applied this learning method in writing class. The result shows that students tend to like this method because it saves more time and the material can be repeated according to their needs. On the other hand, the teacher also likes the implementation of this method because students become more active in discussions with the knowledge they have gained at home. However, students also admit that they are still unfamiliar with online learning platform used. The teacher also has difficulty in finding suitable teaching materials that can attract students' interests. But in general, students and teacher both agree on the implementation of flipped learning in writing class.

**Keywords:** Flipped Classroom; Writing Class; Readiness; Perception

**CE-1127-110**

**ROOM: FIB-3**

**14:00 – 14:10**

### **Politeness-Oriented Teaching Materials of L2 Indonesian for Foreign Learners**

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**Abstract** - This paper is aimed at contributing to the new teaching method for L2 Indonesian for foreign learners with an emphasis on politeness. The said materials consist of eight unit: (a) expression of salutations; (b) self-introduction; (c) greetings people; (d) asking for help; (e) saying thank you; (f) congratulating; (g) request for permissions; and (h) table manners. The expected outcome is not only that the learners will be able to use Indonesian, but also behave like Indonesians. It is shown by the test results of the effectiveness of the materials. The learners always greet when entering and leaving a class room. Instead of using second person pronouns, the learners use a more polite form of greeting, such as *Bapak* 'sir' or *Ibu* 'maam'. The learners also call themselves with a more formal first singular pronoun 'saya', rather than 'aku', which is considered a non-formal and less polite form. Moreover, the learners always ask for permission for anything during a learning session. They always use the word *tolong* 'please' if asking for help and say *terima kasih* 'thank you' afterwards. They also use their right hand to eat, to give, and to receive anything from other people.

**Keywords:** politeness; teaching materials; L2 Indonesian for foreign learners

**CE-1204-230**

**ROOM: FIB-2**

**15:35 - 15:45**

### **Effect of Social Science Stories on Children's Language Development**

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**Abstract** - Children's language development is greatly influenced by the child's environment. Many children experience language development processes with less intellectual. Many children get language development in a negative environment. Both the real environment and the virtual environment. We need special attention to create children with intellectual language styles and build creative communication for the child's environment. This study aims to obtain comprehensive data about the influence of social science stories on children's language development. The study was conducted using a quasi-experimental. The results showed that social science stories

used for children in the learning process help children to think intellectually and think creatively in dealing with the child's environment. The results showed that the need to apply the use of social science stories in the learning process.

**Keywords:** Social Science; Story; Language Development; Elementary School; Children.

**CE-1207-357**

**ROOM: FIB-2**

**15:45 - 15:55**

### **Accounting Education: From Multiparadigm Toward Pancasila**

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**Abstract** - This study was carried out with the aim to reveal the process of the Multiparadigm Accounting Education (MAE) at the Accounting Doctoral Program, Faculty of Economics and Business, Brawijaya University in initiating Pancasila Accounting. MAE is different from accounting education in general in Indonesia. MAE not only used Positivism, Interpretivism, Criticism, Postmodernism, and Spiritualism approaches; but also learning methods and material based on self and God; and supported by learning endeavors such as the Epistemological Debate and the Indonesian Multiparadigm Accounting Society. The result of the study exhibits that accounting education is ideally concerned with not only communication between students and themselves and lecturers, but also with the environment and God. A learning process, in essence, stimulates the students to initiate Pancasila accounting.

**Keywords:** Accounting Education; Multiparadigm; Pancasila.

**CE-1230-411**

**ROOM: FIB-2**

**15:55 - 16:05**

### **THE IMPLEMENTATION OF ENGLISH AS A MEDIUM OF INSTRUCTION IN AN INDONESIAN EFL SETTING**

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**Abstract** - Studies about the effectiveness of teaching English for content subjects in an EFL and ESL context using monolingual or bilingual approach has been inconclusive. This descriptive research was designed to examine the implementation of English as a Medium of Instruction (EMI) in non-English Department. Fifty-eight undergraduate university students enrolled in International class program in non-English department in one of the state universities in Indonesia participated in this study. Participants were required to fill in Likert-scale questionnaire on how they perceive the use and function of English instruction within English-only (monolingual) and English-Indonesia (bilingual) L2 classroom. The finding revealed that bilingual approach was favored more than monolingual approach in English taught courses. The effect of L2 proficiency may explain this phenomenon of bilingual preference. Discussion and implication of this study are presented.

**Keywords:** English as a medium of instruction, monolingual, bilingual, first language (L1), second language (L2)

**CE-1105-005**

**ROOM: FIB-3**

**13:30 - 13:40**

### **Learning Development Model of Pandhalungan Community Empowerment Program Through Training in Summersari District, Jember City**

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**Abstract** - Researcher obtained a description on the community in Summersari Jember Village had various kinds of empowerment or strengthening. This can be the basis for researchers to develop a learning model which is a series of business training development activities in an urban area based on improving the quality of life of the Pandhalungan family. The objectives of this study are to know (1) the development model of community empowerment learning through training that is currently being implemented, and (2) the supporting and inhibiting factors for the development model of community empowerment learning through effective, valid, and practical training so that it has an impact on empowerment or strengthening the community. Research designed and analysis is use qualitative descriptive. Data collection uses interview, observation, and documentation techniques. While the stage of analyzing research, data used in this study includes the stage before in the field, the phase while in the field, and the conclusion /verification stage of the data. The initial findings of the study show (1) learning development activities through training are carried out using ADDIE design starting from the analysis, design, development, implementation, and evaluation, and (2) supporting factors there is support from the role of government, community participation in implementation of training activities, the existence of good relations between communities, the need, trust, and open in the implementation of learning development models through training. While the inhibiting factor in the implementation of learning development through training in Summersari is the inadequate quantity of human resources.

**Keywords:** learning; community empowerment; training

**CE-1111-016**

**ROOM: FIB-3**

**13:40 - 13:50**

**A survey on lecturer readiness and perception about blended learning**

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**Abstract** - This article describes the lecturer readiness and teaching experience on the use of blended learning. The mode of instruction is a combination of conventional or face to face instruction with online or internet based one. This is a descriptive research using survey as a data collection technique which used questionnaires for its instrument. The purpose of the survey is to gain the details of the background and specific characteristics of a case or events concerning with the implementation of blended learning in Faculty of Cultural Studies, Universitas Brawijaya. The researchers reviewed relevant document to collect the data about the school management policy. Interviewing faculty members about their perception and teaching experiences was conducted to collect supporting data on the use of blended learning. This research found that school policy supports to the use of blended learning in which the 2019 curriculum states that the online session is allowed to be applied not more than 40% meetings of the 16 total meetings in a semester. This research found that the lecturers have showed their readiness especially dealing with blended learning factors such as technology, innovation, human resource, and development. In general, the lecturers feel comfortable with the online session in their blended learning teaching activities. They perceived that blended learning quite helpful in term of time flexibility, practicability, and technological advancement. They find that the pedagogical interaction during the online session is quite interactive where the students always response their postings by providing comments, assignments, opinions, even questions.

**Keywords:** blended learning; readiness; perception; online session

**CE-1115-038**

**ROOM: FIB-3**

**13:50 - 14:00**

**English Literature Teaching at Indonesian Undergraduate Level: A Major or A Course?**

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**Abstract** - English Literature as a major is offered by 179 universities in Indonesia as recorded in the Indonesia's Ministry Research Technology and Higher Education of the Republic of Indonesia. The dilemmatic combination of the phrase "English Literature" is fundamental to this research. The English language seems to outweigh the study of literature itself. This is due to the Indonesian context - English as Foreign Language (EFL) setting where mastering the language is seen as beneficial in many ways. The questions of why pursuing this major also still linger within our society. In the light of this matter, there are two research questions asked: (1) the expectations from the students and (2) the reality in practice experienced by both the students and lecturers; which will be read with qualitative approach. The data are gathered from English Literature students and lecturers from one sample university by using questionnaires and interviews. The emphasis in reading the data is on both the students and lecturers' outlooks and experiences in the teaching and learning environment. This study aims to offer real case study in seeing the Indonesian students' actual reasons for choosing English Literature major, to give insights in defining what to anticipate when attending one, and to redefine the importance of pursuing it especially in this digital era.

**Keywords:** English Literature; Teaching; Undergraduate; Indonesian Context; EFL Setting

**Kajian Struktur dan Fungsi dalam Legenda Asal Mula *Gunong Lhe* (Gunung Tiga) di Kabupaten Aceh Besar**

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**Abstrak** - Penelitian ini dilatarbelakangi oleh asumsi peneliti tentang cerita rakyat (legenda) sudah terlupakan dalam kehidupan masyarakat. Padahal dalam cerita rakyat tersebut memiliki nilai-nilai penting yang bisa dimanfaatkan dalam kehidupan sehari-hari. Misalnya cerita rakyat yang berbentuk legenda Asal Mula *Gunong Lhe* (Gunung Tiga) yang terdapat di Kabupaten Aceh Besar. Penelitian ini bertujuan untuk mendeskripsikan struktur dan fungsi dalam legenda asal mula *Gunong Lhe* (Gunung Tiga) di Kabupaten Aceh Besar. Penelitian ini menggunakan metode deskriptif kualitatif. Pengumpulan data melalui teknik observasi, studi pustaka, wawancara dan merekam tuturan yang disampaikan oleh informan. Peneliti terlibat langsung dalam pengambilan data. Berdasarkan hasil penelitian dapat disimpulkan bahwa struktur cerita rakyat Asal Mula *Gunong Lhe* (Gunung Tiga) di Kabupaten Aceh Besar meliputi; (a) penokohan, tokoh utama adalah si Bruék yang berwatak pekerja keras dan sangat menyayangi anaknya. Tokoh pembantu adalah ulama di Weueng yang berwatak tegas. Sedang ular

Cintramani berwatak jahat yaitu tega memakan anaknya si Bruek. (b) Alur cerita Asal Mula *Gunong Lhe* (Gunung Tiga) yaitu menggunakan alur maju. (c) latar cerita menggunakan latar tempat yaitu di sawah, di gunung dan di jalan. Latar waktu yaitu dahulu kala dan pada suatu hari. Sedangkan latar suasana yaitu bahagia dan sedih. (d) sudut pandang yang digunakan yaitu sudut pandang orang ketiga (dia-an). (f) Tema cerita adalah tidak mensyukuri rahmat Allah. (g) Amanat yang terdapat dalam cerita adalah harus bersyukur atas pemberian Allah. Fungsi cerita rakyat Asal Mula *Gunong Lhe* (Gunung Tiga) di kabupaten Aceh Besar adalah (1) sebagai sarana hiburan, (2) sebagai sarana pendidikan, dan (3) sebagai alat pemaksa sekaligus pengawas agar masyarakat mematuhi norma-norma yang berlaku di masyarakat kolektifnya.

**Kata Kunci:** struktur, fungsi, cerita rakyat (legenda)

CE-1116-049

ROOM: FIB-3

14:10 – 14:20

**Penggunaan Bahasa Asing Pada Iklan Televisi “Floridina” (Kajian: Etnografi Komunikasi)**

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**Abstract** - Indonesian as a national language is a national identity that functions as a means of unifying the nation. Through language it is hoped that the Indonesian people can unite according to the hopes of the pioneers of independence. The era of globalization now offers a free trade culture and gives less impact to the Indonesian language. This situation has pushed Indonesian into a competitive position with foreign languages (English). English has now become a trend in society in all aspects of life, and what is inevitable is the use of foreign languages in advertisements. One of Indonesia's dominant television advertisements using English is advertising packaging drinks with the FLORIDINA trademark from PT Wings Food. This raises concerns for the author, namely the disappearance of Indonesian in the midst of the increasingly widespread trend of English. In this case the author tries to examine ethnographically communication. This study uses a qualitative approach with ethnographic communication methods, and uses agenda setting theory. The results of this study, namely the foreign language used in Floridina ad content is a marketing strategy by advertising communicators in order to reach the target market, namely young people ranging in age from 18-24 years. Evidently this product is in the top position in the group of fruit juice drinks compared to its competitors. Ethnography Communication in foreign languages is evident in this advertising of Floridina beverage products. However, Indonesian is still displayed in order to maintain its existence and self-actualization, that this product is authentic Indonesia (not adapted products), made in Indonesia and for the people of Indonesia.

**Keywords:** Iklan Televisi Floridina, Bahasa Asing, Etnografi Komunikasi

CE-1121-070

ROOM: FIB-3

14:20 – 14:30

**The Existence of Senjang Poetry as One of The Cultures in The Sekayu Community of Musi Banyuasin Regency in Terms of Youth Interest in Preserving It**

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**Abstract** - Senjang is one of the arts originating from Sekayu Musi Banyuasi, South Sumatra. Senjang is the form of rhymes or old poems which are performed in a manner that alternates between players and is accompanied by a musical instrument. The development of increasingly modern times has influenced the artistry of Senjang, this is marked by the decline in interest from adolescents to participate in preserving Senjang art, so that now people who have expertise in strangulation are very rare in Musi Banyuasin Regency. Teenagers' Gaps are very difficult to find in Musi Banyuasin Regency, whereas teenagers are the successors to this artistry of Gaps. The purpose of the study was to determine the interest of the teenagers in the Sekayu Community, Musi Banyuasin in preserving Senjang poetry. The population of the study was 606 teenagers and the sample were 233 teenagers who lived in Sekayu, Musi Banyuasin. The technique used to determine the sample was proportionate stratified random sampling technique with the error raye 5%. The data collection technique used was questionnaire and documentation. The result showed that more than a half teenager 56 % were not familiar with Senjang poetry because of the lack of socialization (cognition aspect). There were 59% teenagers did not get bounded into the emotion due to their interest (emotion aspect). There were 61% teenagers did not have a willing to preserving Senjang poetry because of their interest. According to the explanation above.

**Keywords:** Existence; Interest; Senjang Poetry; Teenagers

CE-1128-119

ROOM: FIB-3

14:30 – 14:40

**The Influence of Peer Helper on Personality Competence Formation of Pre-service Christian Educator/Teacher in STIPAK Malang**

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**Abstract** - In harmony with government standard in National Education System, one of them indicated that a teacher should have personality competence. That competence will be shown in adult personality, stable, mature, discipline, wise, with authority, being role model for student, and has a good character. All of those could not be performed immediately without any preparation stages before. The unfinished conflict in past, being continued with any problems during study in college, sometimes made a teacher failed to perform his/her best personality competence. This study aimed to prepare personality competence formation of pre-service Christian educator/teacher through optimizing the role of peer helper. A total of 50 students was selected as samples, separated in 2 classes, treatment and control class. Quantitative method with quasi experimental design was adopted to collect data, and through paired sample t-test it is found that personality competence of pre-service Christian educators/teachers (Christian education teacher candidates) in the treatment class increased strongly, comparing with class control. Normalized Gain Score showed that the influence of peer helper on personality competence formation was 74%. In order to improve personality competence of pre-service Christian educators/teachers, it is necessary to optimize the role of peer helper.

**Keywords:** peer helper, personality competence, pre-service Christian educator

CE-1130-171

ROOM: FIB-3

14:40 – 14:50

### Development of SPSS Assisted Research Based Instruction Learning Instrument to Increase Students' Mathematical Literation and Computational Thinking Skill

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**Abstract** - The research-based learning for linking teaching and research, where the lecturer enhances the course with many current researches. To successful implementation of research-based learning, lecturer should have an integrated instrument. The aim of this research is to develop SPSS Assisted Research Based Instruction Learning Instrument to Increase Students' Mathematics Literation and Computational Thinking Skill. Development of the instrument used ADDIE Model (Analysis, Design, Development, Implementation and Evaluation). Analysis phase, clarified the instructional problems, goals, and students need in Statistic Course. Design phase, designed and made the instrument, that is lesson plan, worksheet and SPSS manual. Development phase, completed the instrument in the analysis phase and validated it to the expert. Then revised the instrument based on expert suggestion. Implementation phase, implemented the instrument to the students in Inference Statistic Course. Evaluation phase, collected the students' feedbacks and tested student's mathematical literation and computational thinking skill. Result of validation show that the instrument was valid and effective to increase student's mathematical literation and computational thinking skill. It supported by student's feedback and test of student's mathematical literation and computational thinking skill.

**Keywords:** SPSS; Research Based Instruction Learning; Learning Instrument; Mathematical Literation and Computational Thinking

CE-1130-177

ROOM: FIB-3

14:50 – 15:00

### Empowering Student's Higher Order Thinking Skills Through Problem Based Learning

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**Abstract** - Higher Order Thinking Skills (HOTS) is a skill that must be possessed by students today. From the results of observations, it shows that students of SMAN 8 Bandung do not fully have HOTS in Economics lessons, especially for class X MIPA who choose Economics subjects as subjects of interest. One of the learning models that can train HOTS abilities is the Problem Based Learning (PBL) model. The purpose of this study is to analyze whether PBL models can improve HOTS abilities of students compared to using conventional models, in this case is the discussion model. The method used in this study is Quasi Experimental with Non-Equivalent Control Group Design. Purposive sampling technique was used in the selection of samples namely Class X MIPA 6 as an experimental class which amounted to 34 people and class X MIPA 7 as a control class amounting to 36 people. The results of the posttest analysis showed that HOTS value data of students were normally distributed and homogeneous so that Parametric inferential statistical tests were conducted one-way ANNOVA. Hypothesis test results show that the learning method variable is obtained F value = 11.101 and p = 0.002 < 0.05 means that for the first hypothesis test is accepted, that there are differences in critical thinking skills of students who use the problem-based learning method with discussion methods. Based on N-Gain high-level thinking skills, it can be concluded that there are differences in high-level thinking skills of students before and after using the Problem Based Learning method in the experimental class with a high categorized increase. It can be concluded that the PBL learning model has an effect in increasing HOTS of students.

**Keywords:** -**CE-1202-195****ROOM: FIB-3****15:05 - 15:15****Socio-Cultural Activities in Time-Space Dimensions Towards Urbanization in Wonosobo**<sup>1</sup>R Clarrino Adesetya Jaya, <sup>2</sup>Winda Hanifah, <sup>3</sup>Intan Findanavy Ridzqo\*<sup>1</sup>Young Planner at Indonesian Association of Planners, Indonesia<sup>2</sup>Assistant of Development Management and Policy Research Group, Institut Teknologi Bandung, Indonesia<sup>3</sup>Lecturer at Architecture Department, Indonesia Institute of Technology, Indonesia<sup>1</sup>*el.nieno1710@gmail.com*; <sup>2</sup>*hanifah.winda@gmail.com*; <sup>3</sup>*intan.findanavy@iti.ac.id, intan.findanavy@gmail.com\**

**Abstract** - Kampung Sruni is part of Jaraksari district which is designated as a socio-cultural tourism area based on the Wonosobo Regency's spatial plan. However, this opportunity for now is threatened because this urban kampung is classified by the local government as a slum and densely populated settlement. Tackling challenge for future tourism, especially in the manner of providing supporting infrastructure, this paper is aimed to examine the lively socio-cultural activities occupying space typology and time occurred in Kampung Sruni, as well as its correlation to economical purpose in responding to the challenges of urbanization. The investigations were conducted through observation and interviews with inhabitants and local key persons, assisted with related literature. The study shows that now these socio-cultural activities is raising economical circle among inhabitants. This study also provides particular sustainable provision for people, economy as well as environment to be developed within infrastructure planning.

**Keywords:** Socio-cultural; time-space; urbanization; economic base**CE-1203-203****ROOM: FIB-3****15:15 - 15:25****The Okokan Tradition: Understanding Noble Value in the Frame of Symbolic Interactionism**

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**Abstract** - Understanding the noble value of an art is a form of existence of maintaining local wisdom of a region. Nowadays, many people who do not understand a tradition which reflect the noble values contained therein. This study aims to explore the meaning of the noble value of the Okokan Art tradition in the Village of Kediri, Tabanan, Bali Province by using the symbolic interactionism point of view. Case studies are used as a method in discussing symbolic interactions that occur in the Okokan tradition performers. Based on the results of scientific studies in the field, it was found that the Okokan tradition is a form of representation of noble values in each symbolic such as the representation of seeking safety to Sang Hyang Widhi through the offerings of the performer, the noble value of the work ethic in the manifestation of dance movements, the attributes imposed reflecting the noble values of human nature to always harmonious, and the representation of folklore displayed is the harmony of humans and nature.

**Keywords:** Symbolic Meaning; Okokan Tradition; Bali Regional Art**CE-1203-210****ROOM: FIB-3****15:25 - 15:35****Melasti and Peace Tourism Potential in Bali**<sup>1</sup>Agus Adriyanto, <sup>2</sup>Kukuh Setyo Pambudi, <sup>3</sup>Juang Pawana<sup>1</sup>Kementrian Pertahanan<sup>2,3</sup>Universitas Pertahanan<sup>1</sup>*a\_adriyanto@yahoo.com*; <sup>2</sup>*kukuhpambudi@gmail.com*; <sup>3</sup>*pawanajuang45@gmail.com*

**Abstract** - This research aims to describe the Melasti tradition potential as peace tourism in Bali. Melasti is a set of tradition in Balinese culture to welcome the Nyepi or Day of Silence. The tradition allows the people to interact and appreciate the peaceful values of relationships between human and God, fellow human, and nature. As a tourism concept, Melasti has a high appeal to be a tourist spot due to the culture uniqueness that it offers. In tune with that, the peaceful values in Melasti needs to be especially promoted and considered as a new tourist spot. This research uses meta-analysis as the research method. The data source is dominated by literature studies and comparison to previous researches. The result shows that there is a massive tourism potential in developing Melasti as peace tourism project in Bali.

**Keywords:** peace tourism, cultural identity, resolution, social integration**CE-1204-225****ROOM: FIB-3****15:35 - 15:45****Relationship between English Language and Proficiency: A Case Study of Papuan Students at UKI Jakarta**<sup>1</sup>Angelina Arini Larasati, <sup>2</sup>Masda Surti Simatupang\*<sup>1</sup>Alumni of Christian University of Indonesia Jakarta<sup>2</sup>Christian University of Indonesia, Jakarta<sup>1</sup>*angelina.arini@gmail.com*; <sup>2</sup>*masdasimatupang@uki.ac.id*

**Abstract** - A number of researches has been carried out to investigate the relationship between affection and English proficiency level of Papuan students at Christian University of Indonesia (UKI). These researches have been done to examine the attitude of the participants towards English language, some factors contributed to the development of the attitude, and the relationship between their English attitude and proficiency level. Participants in this research comprised of five men and five women who were pursuing a bachelor degree at UKI, Jakarta. Participants must be residing in Papua for a long time to prevent data ambiguity. Data was collected through in-depth interview which prompted them to answer fifteen questions. A descriptive-qualitative method is used in this research. This research concluded that even though the overall attitude towards English language of all participants were positive, it is found that some of them have negative impression towards English due to difficulties they encountered when learning English. There are six factors influencing the attitude, but social status and education access were among the most contributing factors due to its wide effect. This research found that positive attitude has significant influence in the development of motivation towards learning English, but it requires to be supported by other factors. This case study concludes that although the participants have positive attitude towards English, they do not have high level of proficiency. This was caused by the lack of other proficiency factors in their education period.

**Keywords:** Attitude; proficiency level; motivation; Papuan students

CE-1204-228

ROOM: FIB-3

15:45 - 15:55

### Children's Honesty Views of Educational Games

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**Abstract** - The existence of traditional games has begun to be displaced by the emergence of online games. Traditional games began to erode slowly over time through the development of technology. So, the need for the emergence of traditional games into educational-based games that facilitate children in learning. The purpose of this study was to analyze children's views on game-based learning. To find out the answers to problems, qualitative research is carried out by applying the Case Studies method. The object of research is aimed at elementary school-age children. The results showed that children who were asked by someone less familiar with them tended to answer that they were happy with the existence of educational games. Children who are asked by people who are very familiar with them tend to state that he thinks educational games are not as interesting as the games that were popular in his time. The findings of this study produce a new theory that children will answer very honestly when he tells stories with people who are very close to him. While he will answer a question from people who are not familiar with it only aims to protect himself and think of the fastest way to be free from the environment that he is not happy with. This condition forces them to think less according to their conscience. The findings of this study need to be a consideration for educators in choosing and designing game-based learning.

**Keywords:** Traditional Games; Online Games; Game-Based Learning; Honesty; Children.

CE-1207-363

ROOM: FIB-3

15:55 - 16:05

### English Language Needs Analysis of Hospitality Students in Indonesia

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**Abstract** - The worldwide growth in hospitality industry has created the need of hospitality students to master English in order to communicate effectively with foreign guests and customers in the workplace later. Therefore, before designing a course, curriculum, syllabus and learning materials, the instructor should pay attention to the students' needs. In this regard, the present study aims to identify the highest English skills necessary of hospitality students and their difficulties in learning those skills. The population of this study was all students in batch 33 of Duta Samudera Indonesia. Administering questionnaires were done to 35 students while interview was used to support their answers in the questionnaires. Results of the study revealed that speaking (91%) and listening (85%) became the most important skills needed out of four language skills (speaking, listening, writing, reading). In speaking skills, the major problems faced by students were unfamiliar topic and afraid of making mistakes while the minor problems were lack of vocabulary, grammar and pronunciation. Furthermore, hard to concentrate when listening long spoken text, understand slow utterance only, listen repeatedly, unfamiliar word and difficult to understand every single word were the prevalent problems faced by students in listening skill. This paper concludes that speaking and listening are the most needed skills for hospitality students despite some problems are still encountered by students related those skills. Understanding students' need and their difficulties enables the instructor to develop the effective syllabus and learning material as well as the learning style.

**Keywords:** ESP; need analysis, speaking and listening difficulties; hospitality students

EV-1111-014

ROOM: FIB-4

13:30 - 13:40

### Effectiveness of Organic Waste Bioconversion Design in Household Scale Using Black Soldier Fly Larva (*Hermetia illucens*)

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**Abstract** - Waste in Indonesia is dominated by organic waste. One of the main sources of organic waste producers is households. Household organic waste processing can be done by composting. However, the benefits gained from processing waste by composting are few. Efforts to increase the economic value of organic waste are by utilizing Black Soldier Flies (BSF) or *Hermetia illucens* as decomposers of organic waste. This research studied the effectiveness of two household scale organic waste bioconversion tool designs using Black Soldier Flies (BSF) larvae in a mixture of rice and cassava leaves (1: 1). Each design has two parts, namely the egg incubator and larval rearing. The larval rearing place in design A has a base area of 1,160 cm<sup>2</sup> with a height of 11.5 cm while the larval rearing place in design B has a 552 cm<sup>2</sup> base area with a height of 6.5 cm. Larvae enlargement site design A has an area of 3,368 cm<sup>2</sup> and larvae enlargement design B has a base area of 2,557 cm<sup>2</sup>. Each larval enlargement design has the same height of 39.5 cm. The eggs used in each design are 0.35 grams. The study was conducted for 20 days, by analyzing larvae weight, substrate consumption, and waste reduction index. The results of this study indicate that the average weight of larvae in design A was 0.132 grams and the average weight of larvae in design B was 0.121 grams. The percentage of substrate consumption in design A was 61.54% while in design B it was 58.97%. Waste reduction index in design A was 4.73% while in design B it was 4.54%.

**Keywords:** BSF; *Hermetia illucens*, Bioconversion; Organic waste.

EV-1115-031

ROOM: FIB-4

13:40 - 13:50

### Indigenous Bacteria as Bioremediation Agent of Sugar Organic Industrial Waste Water

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**Abstract** - Wastewater is the remainder of a business or activity that is disposed of in liquid form. The wastewater produced is feared to have a negative influence on the environmental balance, therefore it is necessary to know the quality standards of wastewater as a reference in the disposal and treatment of wastewater. Bioremediation is an environmentally friendly technology that utilizes microorganisms as agents in the process of cleaning or restoring wastewater conditions. The use of microorganism services can reduce the concentration of organic waste into simple organic compounds, by converting organic compounds into CO<sub>2</sub>, CH<sub>4</sub>, H<sub>2</sub>, and H<sub>2</sub>S, as well as water and energy intended for the process of growth and production of microorganisms in the remediation process. This study aims to identify the type of microorganism as the dominant bacteria grown in the wastewater of the sugar industry, it can be tested as a bioremediation agent for the waste. This research was conducted at the Laboratory of Aquatic Environment and Biotechnology, Faculty of Fisheries and Marine Sciences. Identification of bacteria was carried out in the Laboratory of Microbiology, Faculty of Medicine, Brawijaya University. The method used in this study is the experimental method, by observing several environmental parameters as indicators of the success of the remediation process, among others, BOD, COD, TSS, and pH. The results show two types of dominant bacteria namely *Staphylococcus aureus*, and *Bacillus subtilis*, then used as bioremediation agents. The bioremediation activity was able to reduce BOD and COD levels, where BOD value before remediation was 4.73 mg/L and decreased to 2.89 mg/L. The value of COD has decreased from 56 mg/L to 50 mg/L. The TSS value is 20.5 mg/L to 20.4 mg/L, the pH value shows a significant result where the bioremediation process is able to increase the pH value from 4.8 to 7.

**Keywords:** Wastewater, Bioremediation, *Staphylococcus aureus*, *Bacillus subtilis*.

EV-1119-059

ROOM: FIB-4

13:50 - 14:00

### Dynamic Vista of Sustainable Green Public Spaces Network in Wonosobo

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**Abstract** - Regional development always stimulates urbanization which attracts people to come to the city. Demographic grows and generates needs of space for dwelling. Unfortunately, new houses are built on the sites which are the green pockets amidst in settlement. The new house plan is worsened by the absence of green space

area within to maintain ecosystem balance. This phenomenon begins to be seen in Wonosobo Regency, Indonesia, especially in Kampung Sruni. The challenge of creating green space in the middle of built settlement is the availability of land which is many in quantity, relatively small in size, but scattered. On the other hand, this kampung has been planned as one of the urban tourism destinations in Wonosobo, promoting people and cultural performance staged on the panoramic background setting of the green valley landscape. Strategy to replenish the degrading green spaces in this kampung and to make it sustainable was done by designing it for both inhabitants, environment and tourism. Nine green public space designs are proposed to this kampung. Interestingly, beside its function as green space and making network, the spatial component arrangement of the designs created different types of vista offering view the landscape of man-made, man-made and nature, and fully nature. Moreover, by the movements through these green public spaces, observers would get spatial experience visually for their eyes and motorically for the body. Thus, these designs of public space are created as representations of the community engaged with their culture and urban landscape fabric of Wonosobo.

**Keywords:** Green public space; network; vista; Wonosobo; tourism.

**EV-1126-092**

**ROOM: FIB-4**

**14:00 - 14:10**

### **The Effect of Environmental Factors on The Event of Acute Diarrhea**

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**Abstract - Background:** Diarrhea is an environment-based disease that is endemic in Indonesia with a high prevalence rate. One of the main causes of diarrhea is microbiological contamination that can be transmitted through underground water to dug wells. *E. Coli* is a common bacterium that is a plague of diarrheal diseases caused by dug well water. **Objective:** Knowing the influence of environmental factors, namely microbiology of water, clean water facilities (CWF), toilet facilities and sewerage facilities (SF) and the availability of trash bins against the incidence of acute diarrhea. **Method:** A cross sectional observational analytic study with a total of 228 users of dug wells and 38 dug wells that met the inclusion criteria in the City Health Center Working Area in the Northern Region of Kota Kediri with dug wells used for drinking and bathing which were permitted to be examined. Data was taken using questionnaires and checklists for variables SAB, latrine, SPAL and availability of trash bins also laboratory results from the Kediri labkesda for water microbiology. The data obtained were analyzed by Chi square test and Linear Regression. **Result:** The bivariate test results showed water microbiological factors  $p = 0,000$ , SAB  $p = 0,000$ , toilet facilities  $p = 0,001$  and SPAL  $p = 0,005$  which significantly affected the incidence of diarrhea. The multivariate test results showed that water microbiological factors had the most significant effect on the incidence of diarrhea ( $p = 0,000$ ; OR: 4,67; 95% CI: 2,51 - 8,7). **Conclusion:** The need for counseling interventions as well as improving the quality of well water and CWF by improving well construction, checking well water regularly and cooking well water before consumption. The need to form a closed, permanent and non-stagnant SF and the construction of clean toilets, non-soil floors and a distance of septic tanks > 10m from CWF. **Take Home Message:** There exist a need to be educated about the importance of clean water, latrines and wastewater disposal that meets the requirements in preventing acute diarrhea

**Keyword:** Water microbiology, dug wells, diarrhea, clean water facilities, latrines, wastewater disposal facilities, trash can

**EV-1207-381**

**ROOM: FIB-4**

**14:10 - 14:20**

### **Photocatalytic Performance of CdS/(Pt-TiO<sub>2</sub>)-Pumice for *E. coli* Disinfection in Drinking Water**

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**Abstract -** Photocatalytic removal of *E. coli* pathogen bacteria existing in drinking water was studied in this paper. CdS/Pt-TiO<sub>2</sub> nanocomposite was synthesized by depositing Pt/CdS on TiO<sub>2</sub> nanoparticles with chemical reduction and hydrothermal method. On the other hand, CdS/(Pt-TiO<sub>2</sub>)-Pumice was fabricated by immobilizing of titania composite onto pumice with dip coating method in order to gain the photocatalytic process without problem in the separation of titania from solution. The Field Emission Electron Microscopy (FESEM), Transmission Electron Microscopy (TEM), UV-Vis Diffuse Reflectance Spectroscopy (UV-Vis DRS) were utilized to characterize the photocatalyst samples. Based on the morphology characterization, it was observed that successful deposition of Pt and CdS on TiO<sub>2</sub> occurred. Furthermore, decorating Pt/CdS on TiO<sub>2</sub> can reduce bandgap energy compare to the bare TiO<sub>2</sub> according to the UV-Vis DRS analysis. The treatment of *E. coli* inactivation with CdS/(Pt-TiO<sub>2</sub>), CdS/(Pt-TiO<sub>2</sub>)-pumice and without photocatalyst had performed in the photoreactor that irradiated with mostly visible light in 90 minutes. The amount and the contact mechanism between the photocatalyst and bacteria in the water would affects the efficiency of *E-coli* photocatalytic disinfection in drinking water.

**Keywords:** Photocatalysis, CdS/(Pt-TiO<sub>2</sub>), Pumice, E. coli

**EV-1126-097**

**ROOM: FIB-4**

**14:20 - 14:30**

**Electric Field Effect on Ultrafine Particle Filtration Performance Using Aluminum Electrodes Applied in Emission Exhaust System of Motor Vehicle Engine**

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**Abstract** - In this study, a high electric field - direct current - was applied to the emission exhaust system of the motor vehicle to investigate the effect of electric field on the performance of aluminum electrodes filters. A standard motor vehicle engine (idle condition, 1000 rotations per minute) was used as the source of the ultrafine particles (particles with the diameter less than 1 micrometer). Aluminum plates with a thickness of 0.15 mm were used as the positive and negative electrodes. They were placed onto an acrylic filter frame and installed on the motorcycle muffler. A signal generator that produced a stable voltage (direct current) was applied on the electrodes to produce a high electric field. Meanwhile, ultrafine particle concentrations before and after using filters were measured using a P-Trak Ultrafine Particle Counter (TSI, Model 8525). Experiment results show that the filters can reduce ultrafine particle concentration with an efficiency of 5% to 47%, depending on the electric fields.

**Keywords:** Efficiency; electric field; emission; filtration system; ultrafine particle.

**EV-1128-122**

**ROOM: FIB-4**

**14:30 - 14:40**

**Local Capacity Building in the Ecotourism Development**

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**Abstract** - Ecotourism service activities have developed in rural areas. The problem is whether the local people carry the vision of conservation or are forced to work into meeting economic needs only. This question is fundamental to the formulation of the concept of development policy, building participation and management of ecotourism at the local level. This research aims to study local capacity through regulating the relationships between social, economic and environmental aspects, as well as measuring the sustainability of tourism management. The study was carried out in Ngadas village, Poncokusumo sub-district, Malang regency. This research approach uses surveys to explore qualitative and quantitative data. The method of analysis used path modeling (partly least square, PLS), and sustainability index using a multidimensional scale (MDS). Local capacity has successfully demonstrated the influence of institutions on environmental and economic variables. At the same time, social variables also affect economic variables, and economic variables affect the development of ecotourism. The relationship shows that economic variables become a bridge, which connects the indirect effect of social influence on the development of ecotourism. Measurement of the sustainability index on institutional variables is 41.30, social 36.57, environmental 43.01, and economic 41.76. All variables are categorized as less sustainable. Indicators to support sustainability include infrastructure, improving the village economy, availability of trash bins, protection from landslides, and communication.

**Keywords:** social capital; local capacity; sustainability index; Tengger

**EV-1130-160**

**ROOM: FIB-4**

**14:40 - 14:50**

**Waste management: The Relevance of Economic Incentives, Environment Concern and Convenience in Processing Household waste**

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**Abstract** - This study aims to evaluate how economic incentives, convenience and environment concerns affect the decision to self-process household waste using composter kits. We evaluated 62 respondents living on Depok, West Java of which 30 of them were households who were participants in the community development program carried by Universitas Indonesia in 2019 while the rest were not the program participants. The program participants were given training on household waste management using composters and receiving composter kits. We hypothesises that economic incentives, convenience to process the waste, economic concern, and participating

in waste management program positively related to household intention to process daily household waste using composter. We used quantitative and qualitative mixed data. We analyze quantitative data using linear regression and make conclusion equipped with qualitative data generated from interview.

**Keywords:** -

**EV-1130-178**

**ROOM: FIB-4**

**14:50 - 15:00**

**Study of COD and BOD Removal Efficiency in Tempeh Industrial Wastewater Treatment Using Aerated Activated Sludge**

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**Abstract** - Tempeh is the most popular food in Indonesia. The process of making tempeh requires a lot of water. The preliminary analysis of tempeh wastewater showed that the value of COD, BOD and pH are 26693 mg/l, 11204 mg/l and 3,99. This results actually do not meet the Minister of Environment regulation No.5 (2014) about quality standard of wastewater treatment for industry. The quality standard for COD, BOD and PH for tempeh wastewater are 100-300 mg/l, 50-150 mg/l, and 6-9. So, the tempeh industrial wastewater must be processed before being discharged into the environment. The aim of this study is to determine the activated sludge ability to reduce COD, BOD, and also pH value in tempeh industrial wastewater. Tempeh industrial wastewater treatment carried out in aerated batch reactor using wastewater composition 10%, 15%, and 25% (v/v) of tempeh wastewater in 500 ml as a research variables. The wastewater while the hydraulic retention time is 48 hours. The highest COD, BOD removal efficiency occurred at 25% (v/v) wastewater composition each for 74,58%, 79,27%. The COD and BOD concentration after treatment are 7625,79 mg/l and 4555,7 mg/l. And pH at 25% (v/v) wastewater composition is 6,92. pH value after treatment meet quality standard of industrial wastewater from Minister of Environment regulation No.5 (2014), but COD and BOD not meet the standard.

**Keywords:** COD; BOD; activated sludge

**GT-1207-322**

**ROOM: FIB-6**

**15:05 - 15:15**

**Evaluating User Comfort in Green Building with Platinum Rating (Case Study: Spazio, Surabaya)**

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**Abstract** - The efforts of Surabaya city government to improve the quality of the environment better, are able to make Surabaya get an award in the 2014 Indonesia Green Awards for the category of Green City and Global Green City from the Global Forum on Human Settlement (GHFS). As one of the office buildings in the city, Spazio also help the government by using the concept of green design for their building. Spazio is located on Mayjend Yono Soewoyo Street, lot III, Graha Famili, Surabaya. The issue is about how the green building concept of Spazio could affect the user comfort of the building. This study uses a qualitative analysis method using analysis and interviews. The analytical method used to analyze the comfort conditions of the Spazio which using the green building concept. Where Spazio itself gets a platinum ranking with a total of 82 points. From the research results obtained that users feels comfortable in the building. However, there is a lack of thermal comfort in the corridor of Spazio. Where the room temperature in the corridor area is classified as hot and the openings in the building made the room feels hot. The strategies are adding more openings for air circulation in the corridor area and using vertical blinds or roller blinds to prevent heat and glare. So, the building users will be able to feel more comfortable being inside the building.

**Keywords:** user comfort, green building, green ship and office building

**GT-1205-234**

**ROOM: FIB-6**

**15:15 - 15:25**

**The Effect of Heating Time and Heating Temperatures to Layer Thickness and The Glossiness Level of A Surface Steel ST 41 in Blackening Coating Process**

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**Abstract** - Metal coating without electrical energy using usually could be the conversion coating technique. One method of the conversion coatings that are widely used in the industrial field is blackening or black oxide coating. Blackening or black oxide coating technique is a chemical conversion process that is formed from the chemical reaction between the iron in ferrous metals by an oxidizing salt to form a layer of magnetite (Fe<sub>3</sub>O<sub>4</sub>) thin metal substrates. The metal coating process has a lot of choices to improve the quality of materials from metallic and nonmetallic. This study aims to investigate the effect of the time and the temperature of the heating process of the steel ST 41 to the thickness and the value of glossiness level by the blackening processing technique. The research variables are used various heating process time: 30; 60; and 90 minutes, temperature: 100 °C; 150 °C and 200 °C, and other variables are controlled constantly. The workpieces made from a steel metal plate ST 41 has a dimension size = 200 x 30 x 5 mm 3 in 54 pieces. The experimental method was designed by formation 3 x 3 x 3. It could be

revealed the longer the heating process time could increase the thickness of the layer of the workpiece surface. A higher heating temperature could decrease the value of the glossiness level of a metal surface. The surface layer thickness level is found the best in the plating process time about 90 minutes and a temperature of 200°C with a coating thickness values of 20,27µm. The highest value of the glossiness level is obtained at the highest coating time of 30 minutes at a temperature of 100°C with the value of the shiny level of about 65.12 GU.

**Keywords:** blackening technique, steel ST 41, layer thickness, glossiness level.

**EV-1206-251**

**ROOM: FIB-4**

**15:25 - 15:35**

**TOPIC: Sustainable Waste Management Surabaya Experience**

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**Abstract** - Solid waste management is a serious environmental problem in many urban areas in developing countries including Indonesia. Surabaya is the second largest city in Indonesia and one of the most densely populated urban areas with a population of over 2.9 million people. On daily basis, Surabaya produce over 2000 tons of solid waste as recorded in 2001 which have huge negative impact on the lives of the people as it results in health and environment hazards. To manage and subsequently address this menace, in 2004 Surabaya municipal council or government started to address the endemic through an initiative which is in two broad categories namely, (1) incentivizing sustainable waste management through waste sorting and composting facilities and (2) increasing awareness, education, and community involvement. In 2009, Government provided 19,000 composting baskets in various communities and 14 composting facilities. In a separate development, the city government established waste Banks in 2008 and currently, there are 180 Waste Banks in the city courtesy of a partnership with a Japanese Waste Company called Nishihara. Surabaya green and clean program mobilized over 9000 community-based organizations to help involve the local communities through education, raise awareness, and community engagement on waste management strategies and methods. Surabaya succeeded in reducing its solid waste by almost 20% over the last four years but solid waste is still a problem in the city. This paper used integrated sustainable waste management approach based on 3Rs (reduce, reuse, and recycle) in conducting a comprehensive study on sustainable waste management in which Surabaya is exemplary. The purpose of the study is to identify the challenges of solid waste management in Surabaya as her population is growing exponentially and what are the policy implications to this effect. However, organic waste materials are still a problem as it comprises 57% of the waste generated in the city. In conclusion, more efforts are need to further reduce solid waste problem in Surabaya with an informed policy to guide behaviors of the people.

**Keyword:** Sustainable Waste Management; recycling; reducing; community-Based Organizations.

**GT-1206-297**

**CE-1**

**15:35 - 15:45**

**Mechanical and Fracture Morphology of Polyethylene Terephthalate Mixed Rice Starch Particle Based Blend Composites**

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**Abstract** - Synthetic plastic has the main disadvantage namely not environmentally friendly. These properties often cause several problems such as plastic pollution, flooding, and air pollution if burned. In the last five years, the development of biodegradable plastics has attracted attention from the researcher. This is evidenced by the development of bioplastics based on starch biopolymers. Starch biopolymers can be used as fillers in a synthetic polymer matrix. This addition aims to reduce the percentage of using synthetic polymers and increase the biodegradation rate of plastics in environment. This study examines the effect of addition rice starch particle (RSP) in Polyethylene terephthalate (PET) based blend composites. The concentration of RSP in PET was varied at 0, 5, 10, 15 and 20 wt% with fixed percentage of sorbitol for 2 ml. The blend composites were produced by solution mixing method. All samples were tested by tensile and morphological observation after tensile test. The tensile test proves that the addition of RSP in PET increased tensile strength of blend composites. The maximum tensile strength was in 15 wt% RSP in PET for 9.79 MPa. Optical microscope displays minimum porosity with good fusion between RSP and PET. The addition starch in polymer is suggested to reduce the percentage of using non-biodegradable polymer plastic. This research is important due to the development of biodegradable polymer.

**Keywords:** Blend composites; rice starch particle; polyethylene terephthalate; mechanical properties; fracture morphology.

**EV-1203-207**

**ROOM: FIB-5**

**13:30 - 13:40**

**A Review on Recent Chemical Technology Developed for Real-Time Monitoring of Heavy Metal Ions in Water**

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**Abstract** - Monitoring of heavy metal ions such as Pb(II), Cd(II), Cu(II) and Hg(II) in water usually done by direct sampling. The sample was preserved and analyze in laboratory using instruments such as Atomic Absorption Spectroscopy (AAS), Fluorescent Spectroscopy, and Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS). These conventional methods are expensive and time-consuming. Hence, online/real-time heavy metal ions monitoring methods have been developed until now. The characteristic of real-time monitoring is to get the result in a short amount of time. To improve the sensitivity, selectivity, and accuracy of the developed methods, researchers used instruments such as Laser Induced Breakdown Spectroscopy (LIBS), Plasma Spectroscopy, and Nuclear Magnetic Resonance (NMR). Researchers were also tried to develop a static or mobile custom-built instrument. Electrochemical sensing devices were also designed by modification of the materials, making microfluidic and chip-based sensors. The instruments and devices can detect heavy metal ions more quickly than conventional methods. However, the development of electrochemical sensor prototypes is rarely followed up by the experimentation to communicate the prototypes with the internet. In addition, the developed instrument still cannot detect heavy metal ions in the mixture. It can be concluded that these studies are still in the laboratory scale which can be developed even further to get the best result of online/real-time monitoring method for heavy metal ions.

**Keywords:** real-time, monitoring, heavy metal ions, water.

**EV-1204-221**

**ROOM: FIB-5**

**13:40 - 13:50**

### **Study of Emission Decrease Using Venturi Vacuum in Three-Stage Filter Wet Scrubber Systems**

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**Abstract** - The problem of plastic waste is increasingly and can cause impacts on living things and the environment. Various efforts have been made to reduce the volume of waste generation, one of which is using the incinerator combustion method. In the operation of the incinerator produces exhaust gases that will be released into the air which can cause air and environmental pollution. So, it is necessary to engineer an incinerator tool to reduce the emission content that will be released before being released into the air. The one of technique for controlling air pollution is by using a venturi vacuum in a wet scrubber system. The working principle of the wet scrubber is by flowing fluid into the gas stream so that the flowing gas will be filtered by the liquid fluid. Wet scrubbers dispose of pollutant gases by dissolving or absorbing pollutants into the liquid and then draining to the surface of the filter media to reduce levels of gas emissions. The working principle of a venturi vacuum in a wet scrubber is to reduce emissions with fluid flow at a certain pressure. Emissions flowing with fluid will enter the wet scrubber column and come into contact with the filter media that functions as a pollutant filter. Air pollution control is needed to reduce the level of air pollution which is getting higher.

**Keywords:** fluids; wet scrubbers; venturi vacuum; column; pollutants.

**EV-1204-222**

**ROOM: FIB-5**

**13:50 - 14:00**

### **Reduce Emission Using Single Vacuum Venturi in The Wet Scrubber System**

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**Abstract** - Burning plastic waste using an incinerator will produce emissions of gas that will damage the environment if released casually. One of these emissions can be controlled by using air pollution control technology in the form of a wet scrubber. This study was to analyze the effect of air flow, water discharge and thickness of the packing media on the efficiency of the wet scrubber in removing emissions from the burning of plastic waste. The wet scrubber used in this study is a co-current type with a single packed bed. This study has 3 variable variations, namely variable air flow velocity by regulating valve openings in venturi vacuum, water discharge, and media thickness with thickness of 5 cm, 10 cm and 15 cm. The parameters to be investigated are NO, CO and SO<sub>2</sub> content at the wet scrubber input and output, the temperature at the wet scrubber inlet and the water content at the waste water tank to be tested at the end of the study. The results obtained from the experiments carried out were SO efficiency values of 46.48%, CO of 25.28% and NO of 22.77%. SO<sub>2</sub> values tend to have high efficiency values because SO<sub>2</sub> solubility in water is high. In accordance with the effect test with the help of IBM SPSS, water flow and venturi flow greatly influence the removal of NO, CO and SO<sub>2</sub> gases. However, the thickness of the media only affects the removal of CO and SO<sub>2</sub> gases.

**Keywords:** venturi vacuum; air flow velocity; water discharge; emissions and media thickness.

**EV-1206-276**

**ROOM: FIB-5**

**14:00 - 14:10**

**Aluminum Bioleaching from Water Treatment Sludge Using *Penicillium Simplicissimum* and *Aspergillus Niger***<sup>1</sup>Dita Rifka Annisaa', <sup>2</sup>Yulinah Trihadiningrum\*, <sup>3</sup>Rizkiy Amaliyah Barakwan<sup>1,2,3</sup> Department of Environmental Engineering, Faculty of Civil, Planning and Geo Engineering, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia  
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**Abstract** - The high aluminum content in alum sludge from water treatment is caused by the use of aluminum sulfate as coagulant. The high aluminum concentration is potential to be recovered. Bioleaching is one of biological methods for dissolving aluminum from the sludge, which can be followed by recovery process. This study aims to examine physical, chemical and toxicity characteristics of the alum sludge, to compare the performance of *Aspergillus niger* and *Penicillium simplicissimum* in aluminum bioleaching from the sludge. Bioleaching was carried out ion laboratory scale using batch reactors. The alum sludge was mixed with potato dextrose broth (PDB) in varied PDB:sludge concentrations of 50/50; 25/75; 12.5/87.5; 0/100. Microbial concentration of 10% (v/v) was inoculated into each sludge-medium mixture. Sterilized sludge was used as control. The bioleaching was performed within 15 days using reactors of 500 mL capacity with total volume of media and sludge of 300 mL. The inoculated sludge was incubated at room temperature for 15 days and stirred with a laboratory shaker at 150 rpm. Centrifugation was applied to separate dissolved metals from the suspended matters. The pH values and metal concentrations were measured every 3 days. Highest bioleached aluminum (39.4 mg/L) was observed in the *A. niger* reactor with PDB:sludge composition 25/75. The pH value in this reactor decreased to 4. The control reactor showed pH decrease to 5, and aluminum concentration of 63 mg/L. The high aluminum concentration in the control reactor might indicate the existence of indigenous microorganisms, which involved in the bioleaching process.

**Keywords:** aluminum, bioleaching, drinking water sludge, fungi**EV-1206-277****ROOM: FIB-5****14:10 - 14:20****Aluminum Recovery from Drinking Water Treatment Sludge Using Electrolysis Method with Pt/SS Electrodes**<sup>1</sup>Wahyu Budi Pratiwi, <sup>2</sup>Yulinah Trihadiningrum\*, <sup>3</sup>Rizkiy Amaliyah Barakwan<sup>1,2,3</sup> Department of Environmental Engineering, Faculty of Civil, Planning and Geo Engineering, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia  
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**Abstract** - Alum sludge from drinking water production in Indonesia is generally discharged into water bodies. The accumulation of aluminum ions can cause deleterious health effect. The advantage of electrolysis is its selectivity in metal recovery. This research aimed to determine the characteristics of alum sludge, the optimum pH and electrical current for aluminum recovery by electrolysis using platinum/stainless steel (Pt/SS) electrodes. The concentration of alum sludge used was 20% (w/v). The alum sludge was first acidified with sulfuric acid up to pH values of 3 and 4. Polarization test was applied to determine the optimum pH and the electric current used in the electrolysis. The electrolysis was conducted in one compartment acrylic reactor. Dimension of the reactor was 28 cm x 13 cm x 6.40 cm with feed tank volume of 800 mL. The Pt/SS electrodes comprised Pt as anode, and SS as cathode. The electrolysis was performed for 6 hours. The characteristics of alum sludge were as follows: TDS 2,744 mg/L, pH 6.70, COD 4,914 mg/L, and aluminum, iron and manganese concentrations of 5,900; 3,800; and 1,041 mg/L, respectively. The polarization test resulted in optimum pH for electrolysis of 3 and TDS removal of 38.53%. The highest efficiency of aluminum recovery was 52.10% at 300 mA with COD removal of 24%. The recovered metals comprised aluminum (88.14%), manganese (6.84%) and iron (4.76%).

**Keywords:** aluminum, drinking water sludge; electrolysis, recovery**EV-1207-310****ROOM: FIB-5****14:20 - 14:30****The Effect of using Open-Plan Workspaces on Employee Performance of Interior Architecture Consultant**<sup>1</sup>Sandra Ayu Permatasari Gunawan\*, <sup>2</sup>Susan, <sup>3</sup>Astrid<sup>1,2,3</sup> Interior Architecture, Faculty of Creative Industry, Universitas Ciputra  
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**Abstract** - For the most of people, office is like a second home because not a little time is spent in this place. In fact, they could spend more hours at office and be with the coworkers than home. With this reality, it is not surprising that the quality of the office will greatly affect the quality of the performance of its employees. The issue to be discussed is the effect of applying the open plan workspaces to employee performance in an interior architecture consultant studio in Jakarta. The design method uses a user-oriented approach with 2 internship students, 2 senior interior designers, and 2 senior architects. Data mining is done by Focus Group Discussion (FGD) and direct field observations. From the results of data collection, it was found that the majority of respondents felt more productive and easily interacted and collaborated. However, there are deficiencies in the application of the open plan workspaces, among others there are no clear territorial boundaries, sometimes the atmosphere is not conducive, and more susceptible to contracting the disease. Strategies that can be taken to overcome the weaknesses of the concept of open plan are increasing awareness and empathy of each individual to be more

sensitive to colleagues and the surrounding environment, carrying and placing goods according to the needs and needs of the office, discipline in managing work hours and rest hours, as well as routine opening openings (windows) and exercise together. With this strategy, the application of the open plan concept in the interior architecture consultant studio will be better. Implementation of the concept of open plan in an interior architecture office facilitates the exchange of ideas through interaction, communication, and collaboration because the close distance between employees makes them faster and easier to exchange ideas, thereby increasing performance and productivity.

**Keywords:** office; open plan; productivity; interior architecture consultant studio

**EV-1207-324**

**ROOM: FIB-5**

**14:30 - 14:40**

### **Adaptation and Growth of *Botryococcus braunii* on Acid Mine Drainage**

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**Abstract** - Mining activities have a positive impact on the economy but have a negative impact on the environment due to the emergence of acid mine drainage through this activity. Conventional acid mine drainage treatment is an activity that requires high energy and costs, so it is necessary to study economically and sustainably acid mine drainage treatment processes. The development of acid mine drainage treatment involves the use of microalgae for remediation, or commonly referred to as ficoremediation. The obstacle in the application of mine acid water treatment is the characteristics of wastewater which limits the growth of microalgae, where acid mine drainage has a high metal content, and low pH. In this study, acid mine drainage with different concentration was used as a growth medium for *Botryococcus braunii* and growth kinetic of *Botryococcus braunii* is investigated, as well as the effect of metal exposure and pH variation on the development of *Botryococcus braunii*. *Botryococcus braunii* is expected to be able to adapt gradually to the AMD media, so that AMD can become a growing medium for the microalgae. The output of this study is expected to be able to provide an overview of the possible application of ficoremediation as a biological acid mine treatment process.'

**Keywords:** -

**EV-1207-332**

**ROOM: FIB-5**

**14:40 - 14:50**

### **Aluminum Bioleaching from Water Treatment Sludge Using *Acidithiobacillus ferrooxidans* and *Pseudomonas fluorescens***

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**Abstract** - Coagulation process using aluminum sulfate as coagulant in water treatment process produces amount of alum sludge. Alum sludge has a toxic effect for the environment. Bioleaching is one of biological methods for dissolving aluminum from the sludge. Bacteria can be use in bioleaching to dissolve aluminum. The purposes of this research to compare the performance of *Acidithiobacillus ferrooxidans* and *Pseudomonas fluorescens* in aluminum bioleaching from the alum sludge. The alum sludge samples were collected from clearator unit at Karangpilang water treatment plant in Surabaya, Indonesia. The alum sludge characterization was measured according to physical and chemical characteristics. Before the bioleaching process, a sludge toxicity test will be carried out. Bioleaching is carried out in laboratory scale in batch system for 15 days. The alum sludge was mixed with culture media: sludge alum composition of 0/100; 12.5/87.5; 25/75; 50/50. Microbial concentration of 10% (v/v) was inoculated into each sludge-medium mixture. The inoculated sludge was stirred with a laboratory shaker at 150 rpm. Centrifugation was applied to separate dissolved aluminum from suspended matters. The pH values and metal concentrations were measured every 3 days. High-test bioleached aluminum (340.7 mg/L) was observed in the *A. ferrooxidans reactor* with culture media: sludge alum composition of 25/75. The pH value in this reactor decreased to 2.93.

**Keywords:** aluminum, alum sludge, bioleaching, recovery of alum

**EV-1203-208**

**ROOM: FIB-5**

**14:50 - 15:00**

### **The Effect of Motorcycle Fine Particles on Mice Liver**

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**Abstract** - It has been known that motorcycles emit fine particles that adverse to human health. In this research, we studied on the effect of different motorcycle smoke exposures related to the fine particle content on the mice liver. In order to achieve this goal, we exposed to the mice with the emission of the motorcycle in the different dose

concentration. The exposure dose was adjusted by injecting the emission into the chamber 30 x 20 x 20 mL for the different period of 20, 40, 60, 80 and 100 seconds. The exposure was repeated for the eight days. The exposure effect was observed by counting the anomaly cells in terms of Kupffer cells, inflammation, and necrotic cells. The observation was conducted in the day of 2, 4, 6 and 8 after exposures. In the result, we found that the number of active Kupffer cells, inflammation, and necrosis were influenced by different the exposure dose concentration and the exposure day. Larger exposure dose concentration increased the Kupffer cells causing higher inflammation and worsened on the mice liver.

**Keywords:** Fine particles; effect; motorcycle emission; mice liver alteration.

GT-1207-337

ROOM: FIB-6

15:05 - 15:15

### Static Analysis of FGM Plate Using DST-BL Element

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**Abstract** - DST-BL (Discrete Shear Triangle - Batoz Lardeur) element is a generalized triangular element of DKT (Discrete Kirchhoff Triangle) element developed using ASSF (Assumed Shear Strain Field) method specifically expressing transverse shear deformation through the constitutive flexural and transverse shear equation. DST-BL (Discrete Shear Triangle - Batoz Lardeur) does not pass the patch test for thick plates but passes the patch test for thin plates (identical to DKT elements). This was corrected to DST-BK element (Discrete Shear Triangle - Batoz Katili). FGM (Functionally Graded Material) material was first discovered by Japanese researchers in 1984 as the main goal of an aerospace project that requires a thermal barrier with an external temperature of 2000K and an internal temperature of 1000K on an element having a thickness of 10 mm. In this research, static analysis on composite plates will be analyzed in the form of FGM (Functionally Graded Material) using the DST-BL (Discrete Shear Triangle - Batoz Lardeur) formulation element. This test is carried out on various plates and boundary conditions. Numerical tests are carried out using the help of the MATLAB program. Programming was carried out for the 15 degree of freedom DST-BL elements for isotropic plates and FGM plates. Programming in MATLAB is done to get the value of displacement. The results show that the static analysis for square plates and skew plates is convergent and approaching the research results that has been done by previous researchers.

**Keywords:** Green Building; FGM; DST-BL

EV-1102-003

ROOM: FIB-6

15:15 - 15:25

### Bacterial Communities and its Potential Uses in Sago Pith and Sago Waste Water

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**Abstract** - This study aimed to explore the bacterial communities living in sago pith and sago waste water by next-generating sequencing approach, and the potential uses of its endemic bacteria. Sago pith and sago waste water were acquired from a traditional sago factory in Palopo City, South Sulawesi, Indonesia. Genomic DNA was extracted using FastDNA Spin Kit (MPBIO). The gDNA were amplified by specific primers of V3-V4 region of 16S rRNA genes (341f-806r). Amplicon was analyzed using the Illumina platform and the DNA sequence were analyzed using the QIIME v.1.7.0 and the MUSCLE v.3.8.31 software. The results showed that the sago pith mainly composed of Proteobacteria (75%), Bacteroidetes (15%), and Firmicutes (7%), whereas sago waste water mainly composed of Proteobacteria (63%) and Firmicutes (36%). The top five highest abundance of genera at sago pith are *Dysgonomonas* (14%), *Lactobacillus* (4%), *Tolumonas* and *Propionispira* (3%), and *Uliginosibacterium* (2%). *Lactobacillus*, *Klebsiella*, *Pantoea*, *Tatumella*, and *Gluconobacter* are the top highest abundance of genera with the percentage of 36%, 33%, 12%, 5%, and 3%, respectively. Among them, *Lactobacillus* is able to inhibit the growth of pathogenic microbes and prevent food spoilage, *Gluconobacter* as producer of vitamin C and acetic acid, *Klebsiella* and *Pantoea* as nitrogen-fixing bacteria.

**Keywords:** Bacterial communities, sago pith, sago waste water, next-generating sequencing

EV-1128-128

ROOM: FIB-5

15:25 - 15:35

### Pengaruh Kadar Larutan Asam Asetat dan Suhu Reaksi pada Proses Hidrasi dan Asetilasi $\alpha$ Pinene dengan Katalisator Amberlyst 36

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**Abstract** - Indonesia turpentine contains 65-85%  $\alpha$  pinene, camphene 1%, 1-3%  $\beta$  pinene, 3-carene 10-18% and 1-3% limonene. To increase the sale value, alpha pinene can be further processed into compound derivatives such as alpha terpineol and alpha terpinyl acetate. Both are valuable derivative compounds used in the perfume industry and the pharmaceutical industry. Hydration is the reaction between alpha pinene with water to produce compound alpha terpineol. Acetylation is a reaction between acetic acid with alpha pinene that can produce alpha terpinyl acetate. This research studied the effect of the levels of acetic acid solution for product distribution and selectivity alpha terpineol and alpha terpinyl acetate. Variable levels of acetic acid solution were studied at 75,80, 85 and 90%. Product selectivity alpha terpineol and alpha terpinyl acetate also decreased with increasing reaction time. Variables studied temperature at 60°, 70°, 80° and 90°C. conversion alpha pinene is getting larger as the reaction temperature increases. Assuming a reversible reaction, the temperature relationship of each reaction rate constants determined in accordance with the Arrhenius equation.

**Keywords:** Hydration, Acetoxylation, Alpha pinene

**EV-1202-200**

**ROOM: FIB-5**

**15:35 - 15:45**

### **Shrimp Farm Wastewater Treatment Using Ozone Micro- Nanobubble Method**

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**Abstract** - Aquaculture waste water generally has high levels of nutrients that can pollute the environment. Micro-nanobubbles present as one alternative solution that can be used to treat vaname shrimp wastewater. This study aims to examine changes in the concentration of ammonia, nitrite and nitrate pollutants in aquaculture wastewater by using micro-nanobubble technology. In this study, 3 systems were formed with system Control (System A), flowed by ordinary air micro-nanobubbles (System B), and flowed by ozone micro-nanobubbles (System C). The parameters measured were temperature, pH, salinity, dissolved oxygen, and Total Dissolved Solid taken, while the concentrations of ammonia, nitrite, and nitrate were measured by spectrophotometric method. As a result, the use of ordinary air and ozone micro-nanobubbles generators can reduce the concentration of ammonia, but increase nitrate concentrations in systems B and C. The use of ordinary air micro-nanobubbles in system B reduces ammonia levels at a rate of -0.009 mg / L / day and increases nitrate concentration at a rate of 0.011 mg / L / day. Usage The use of ozone micro-nanobubbles in the C system reduces ammonia levels at a rate of -0.0078 mg / L / day and increases nitrate concentration at a rate of 0.0156 mg / L / day. The highest rate of change of concentration per day before stabilization is owned by system C with a value of 0.0156 mg / L / day for nitrates, and the lowest rate value is 0 mg / L / day for nitrite and nitrate in system A and nitrite in system C. Standard the maintenance quality and ammonia effluent are met at 72 hours for system B, and 144 for system C. The quality standard for nitrite maintenance and effluent is always fulfilled by system A and C because nitrite formation does not occur, whereas system B exceeds the nitrite maintenance standard at 108 hours, but always meet effluent quality standards. System B and C exceed the nitrate maintenance quality standard at the 60th and 12th hour, but always meet the nitrate effluent quality standard

**Keywords:** RAS, Shrimp Farm, Ozone, Micro/nanobubble, ammonia

**EV-1115-043**

**ROOM: FIB-6**

**13:30 - 13:40**

### **Performance Assessment Of Waste Water Treatment Installation (Case Study: Kalisong WWTP, Sembung Village, Tulungagung District, Tulungagung Regency, East Java)**

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**Abstract** - Waste Water Treatment Plant (WWTP) Kalisong is one of Environmental Sanitation Based on Society (ESBS) the government programs to create a healthy environment. This WWTP was built in 2011 by combining the Anerobic Baffled Reactor (ABR) and Anaerobic Filter (AF) systems. After development, WWTP performance evaluation has never been carried out. In operational, there are problems such as turbid effluent results, WWTP users that are not in accordance with the planning, and non-domestic waste mixing in the WWTP installation. This research is to examine the efficiency of reducing BOD, COD, TSS on WWTP, identify and assess the technical and social factors that cause decreasing in WWTP performance. The data analysis includes analysis of effluent quality on quality standard, the efficiency of WWTP processing unit, building conformity with the design criteria, and interviews with the management of WWTP and WWTP users. The results of the research from the social aspect show that the management and users of WWTP have not run the operation and maintenance according to the guidelines. WWTP users have decreased from 45 head of households to 21, because the loc ation of the WWTP outlet is under the river water level that causes the wastewater could not flow. The effluent that has been produced with the temperature parameters of 33°C is pH 9,4, COD 239,86 mg/L with 40,2% efficiency, TSS 192,4 mg/L with

77,2% efficiency, and BOD 96,77 mg/L with efficiency of 54,8%. Based on East Java Governor Regulation No 72 of 2013, the parameters of pH, COD, TSS, and BOD are not in accordance with the quality standards. The factors that caused the Communal WWTP is not optimal are the addition of non-domestic wastewater to WWTP, the lack of maintenance by the management and users of WWTP.

**Keywords:** Communal WWTP; Removal Efficiency, Operation; Maintenance

**EV-1115-048**

**ROOM: FIB-6**

**13:40 - 13:50**

### **The Effect of Bioaugmentation Differences on Biofloc Systems Against Degradation of Wastewater**

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**Abstract** - Bioaugmentation is a developed technique to unravel applied problems in wastewater treatment plants. This technique uses microorganisms in wastewater degradation. This study compares the ability of three types of bioaugmentation that are processed in three biodigester reactors: without the addition of bioaugmentation, with the addition of bioaugmentation of cow dung, and with the addition of bioaugmentation Effective Microorganisms (EM4) of agriculture and fisheries. Wastewater used in the from *aci* flour weighing 40 grams and used physical analysis (color, odor, temperature, pH) and chemical approach (COD). The results of physical analysis showed that there was a significant change in the bioaugmentation of cow dung and EM4. Changes occurred in the wastewater are the color becomes turbid brown, foul-smelling, bubbly and decreasing of pH of the wastewater. Whereas chemical analysis shows that changes in COD in bioaugmentation of cow dung are better than other bioaugmentation. Bioaugmentation of cow dung can reduce COD by 3,900 mg / L / day while EM4 bioaugmentation is 600 mg / L / day and without the addition of bioaugmentation by 300 mg / L / day. The ability of bioaugmentation of cow dung is better because the microorganisms contained in cow dung are more mix culture than the microorganisms contained in EM4.

**Keywords:** Bioaugmentation; Biodigester Reactor; Cow Dung; EM4; COD.

**EV-1121-072**

**ROOM: FIB-6**

**13:50 - 14:00**

### **Prospects of Sustainable Wood Building Architecture**

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**Abstract** - The responsibility of the architect as the subject or the actor to realize a work to be considered on the condition and situation of the physical and social environment, as well as taking into account aspects of efficient saving, maintaining and utilizing resources. To realize the design of building requires the selection of material resources responsible for the environment will give identity or identity to his or her architectural masterpiece. At the time the architectural works are made always adapted to the needs and aesthetics of the building form. The historical development of wooden architecture cannot be separated from the surrounding environment condition. The depletion of natural resources such as sand, gravel and cement making materials and iron sand and environmentally damaging mining bans will encourage the use of wood material as a sustainable material. At first the history of the wooden buildings existence depends on aspects of building function only. Now with the technological innovation, sustainability of wooden architecture has three elements, namely: function, strength and aesthetics. In the modern definition, architecture should include functional, aesthetic, and psychological considerations. However, it can be said that in the element of the function itself already includes the aesthetics and psychological elements.

**Keywords:** wood material; building architecture; sustainable

**EV-1121-073**

**ROOM: FIB-6**

**14:00 - 14:10**

### **“Women Empowering Women” in Solid Waste Management: Leadership Expression of “Eco-Heroines” Among Peasants Recyclers-Repurposers**

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**Abstract** - Environmental sustainability has reached considerable awareness among individuals and organizations in some parts of the world. Malaysia and Indonesia also share the same response towards the betterment of socio-ecological environment. Women’s empowerment through the management of the solid wastes received reasonably good interest by women. The article attempts to inform the readers about the virtuous women’s leadership roles to

empower womankind to sustain their socio-ecological maintenance. It is the real-life experience of the peasants who turn to be the recyclers and repurposer in two Southeast Asian cities – Kuala Terengganu and Jakarta. This article is based on a case study through the eyes and lives of women who directly engage in “something good” for their socio-ecological surroundings, and consequently, get benefits from doing so. The findings indicate that women empowering efforts and leadership encourage them to become effective members of their local communities. They are the “eco-heroines” who empower their woman folks through recycling and repurposing solid wastes, particularly the household-based. The direct consequence is that their efforts had produced profound benefits through the elimination of poverty and the improvement of livelihood. The article is based from the qualitative research of interviewing the women. It is aimed to elaborate the crucial roles of women’s empowering efforts and their participation in decision-making process. Based on the case’s success stories played by these unsung heroines, the article recommends to emulate their efforts for the continuation of the cycle of sustainable socio-ecological environmental virtue to benefit humanities.

**Keywords:** Eco-heroines, Recycler, Repurposer, Socio-ecology, Women leadership, Sustainable environment, Women’s empowerment, Waste management

**EV-1125-089**

**ROOM: FIB-6**

**14:10 – 14:20**

**Indonesian Marine Safety Implementation on Climate Change Sector Through Ministry of Marine Affairs and Fisheries Regulation Number 6 of 2017**

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**Abstract** - Climate change is a change in the average climate conditions that occurs due to human activities. As such, this composed an environmental damage, especially on the phenomenon of ice melting in the North and South poles and sea level rise. Sea level rise can cause flood, especially in coastal areas. Climate change is one of the issues that needs to be anticipated in the concept of marine safety in the marine environment, according to the Maritime Security Matrix. Climate change adaptation is needed as an effort to reduce the impacts and to build anticipation for the impacts of climate change in Coastal Area. The Climate Change Adaptation Department of the Ministry of Marine Affairs and Fisheries seeks to address issues related to climate change through Regulation of Ministry of Fisheries and Sea Number 6 of 2017 concerning the organization and work procedures of the Ministry of Marine Affairs and Fisheries Article 176 paragraph 2. Through this regulation Ministry of Fisheries, a Sea makes policies, develops norms, standards, procedures and criteria, conducts technical guidance and assistance as well as evaluates and reports on their work on climate change adaptation. This paper will analyze the performance of the Ministry of Marine Affairs and Fisheries in an effort to deal with climate change in the maritime environment safety sector.

**Keywords:** Climate Change; Marine Safety; Marine Security Matrix

**EV-1125-090**

**ROOM: FIB-6**

**14:20 – 14:30**

**Indonesian Maritime Security Strategy In Facing Climate Change Threats : Indonesia's Effort To Be A Permanent Obsever In The Arctic Council**

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**Abstract** - Indonesia as the largest maritime country in the world needs to put maritime security strategies as the main policy. One problem that must be considered is the issue of climate change, this is an important sector because it will have a direct impact on the economic-social, environmental and health conditions of coastal communities. Previous studies have explained the link between the effects of climate change on the human security, coastal community vulnerability and maritime crimes sectors. One of Indonesia's strategies to address the problem of climate change is to initiate the joining of Indonesia to become a permanent observer in The Arctic Council. The Arctic Council is a high-level intergovernmental forum that discusses issues faced by the North Pole government and North Pole Natives, one of the main issues in this forum is Climate Change. This paper will discuss how Indonesia's maritime security strategy in dealing with climate change threats through initiation to become a permanent observer on The Arctic Council.

**Keywords:** Maritime Security; Climate Change; Permanent Observer; The Arctic Council

**GT-1206-260**

**ROOM: FIB-6**

**14:30 – 14:40**

**Static Analysis of FGM Plate Using MITC3 Element**

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**Abstract** - This paper presents a static analysis of one of the components of green building, which is the use of materials that have good performance and efficiency in buildings, one material that has such properties is FGM (Functionally Graded Material). FGM is a material consisting of a mixture of ceramics and metals through varying volume fractions, ceramic material as a heat barrier at the high-temperature side and metal material that has tough properties and high conductivity at the low-temperature side, with material properties are like that FGM can be applied in many fields, which one of its applications can be used as a building material for important objects storage that must be maintained from high temperatures. In this paper, the FGM material is used as a finite element plate and analyzed using one of the most widely used finite element plate theory, MITC3 (3-node Triangular Mixed Interpolation of Tensorial Components). The MITC3 element is a triangular element developed from the MITC (Mixed Interpolation of Tensorial Components) concept that has shown good results on the isotropic plate, furthermore, it can be analyzed on FGM plate. Numerical analysis conducted to show the performance and convergence of the FGM MITC3 plate element, numerical analysis is carried out in the case of skew plates with varying boundary conditions and plate thickness. From the analysis, it can be concluded that the FGM MITC3 plate element shows good results and convergent to the references.

**Keywords:** Green Building; FGM; MITC3.

**GT-1206-261**

**ROOM: FIB-6**

**14:40 – 14:50**

### Static Analysis of FGM Plate Using DST-BK Element

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**Abstract** - Functional graded material (FGM) is one of the environmentally friendly materials which is a component of green building. This material has caught the attention of many researchers because its physical properties are proven to be better than traditional composite materials with smooth transition properties along with the thickness of the plate. FGM material can reduce damage due to delamination that occurs in composite materials. The same as a composite material, this material can be formed from two or more materials, which is very beneficial because two of the sides of the plate can be adapted to environmental conditions. In this paper, the FGM material is used as a finite element plate and analyzed using DST-BK (Discrete Shear Triangle-Batoz Katili). The formulation of elements on the plate must be able to minimize or be free from the effects of shear locking and membrane locking. DST-BK is an element that was developed to overcome these two problems. The DST-BK element is a triangular element developed from the DKT (Discrete Kirchhoff Triangle) and DST-BL (Discrete Shear Triangle-Batoz Lardeur) concept that has shown good results on the isotropic plate. The purpose of this study is to develop the DST-BK element on the FGM plate numerically tested, several numerical test cases for the FGM plate include a static test of square plates, skew plates and compare them to the reference.

**Keywords:** Green Building; FGM; DST-BK.

**EV-1207-340**

**ROOM: FIB-6**

**14:50 – 15:00**

### Impact and Management of Electronic Waste In Indonesia (Case Study Of Waste Management In Cinangka Village And Curug Village)

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**Abstract** - Rapid increase in the rate of population growth every year have been the main cause of scientist making new innovations in order to support the need of people. Electronics Waste is one of waste in the world that increased in quantity and level of danger for people. In Indonesia, Electronic Waste (E-waste) has become new problem since its rapid increase in volume that appear. We can find gold, palladium, copper, lead, mercury and other hazardous material in E-waste. E-waste management system in Indonesia that not using Hazardous and Toxic Material Waste Management can become new problem. This research is using Descriptive Qualitative as method. Research data used in this research is data from 2009 to 2010 about the impact of Hazardous and Toxic Materials in Cinangka, Bogor and Curug, Tangerang. Blood sample was taken from students in the Kampung Cinangka (Bogor Regency) and Kampung Curug (Tangerang Regency) to check lead exposure in their blood since there are battery melting process activities that become villagers' main job. The test showed that lead the students from that villages is above WHO's safety limit.

**Keywords:** e-waste; environment; waste management

**EV-1207-331**

**CE-1**

**15:05 - 15:15**

### The Advantages and Disadvantages Created in The Cooperation between Indonesia and PT. Freeport Indonesia

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**Abstract** - In its development, to achieve its goals, a country must develop cooperation not only with other countries, but also requires non-state actors such as multinational corporation (MNC), one of which covers various fields including the environment. PT Freeport Indonesia is an example of a multinational corporation (MNC) related to Indonesia in environmental matters. However, the authors found that there were various parties who were pros and cons to the collaboration carried out by the Indonesian Government and PT. Freeport. Some consider that cooperation with PT. Freeport is only detrimental to Indonesia and vice versa, that Indonesia's decision to partner with PT. Freeport in this collaboration is very appropriate. But if viewed from the side of the environment, the writer can assume that the surrounding environment which is used as a gold mining site has become damaged especially since this has been going on for years and has an impact on the surrounding community and anxiety for the people of Indonesia. Of course, in carrying out its cooperation, every country hopes that the cooperation will be profitable, but in reality, a cooperation that is established does not always bring benefits, there will also be losses caused by certain reasons. In this paper, the author tries to explain the advantages and disadvantages obtained by Indonesia in carrying out cooperation with PT. Freeport Indonesia is added with the latest news that Indonesia has controlled 51.23% of Freeport shares after a long time. From a few years ago until today, PT. Freeport Indonesia continues to be the subject of discussion throughout Indonesia, it can be said that almost all Indonesians naturally know of PT. Freeport Indonesia, although it is not clear but things about PT. Freeport Indonesia is quite popular among the people.

**Keywords:** PT. Freeport, Environment, Indonesian Cooperation, Global Corporations, Advantage, Disadvantage.

**EV-1203-209**

**ROOM: FIB-5**

**15:15 - 15:25**

### **The Relationship Between Cognitive Skills in Environmental Biology and Environmental Attitude**

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**Abstract** - The objectives of this study are to identify level of cognitive skills in environmental biology and environmental attitude and to analyze the relationship both of them. Data collections through test instrument for it was obtained from 192 senior high school students in Bandung, and this is done by cluster random sampling approach. Pearson's correlation was used to test the relationship between student's cognitive skills in environmental biology and environmental attitude. The result shows that student's environmental attitude that we classified as positive but cognitive environmental biology were classified as moderate. While the correlation between it shows that no positive significant relationship. Although student's cognitive skills in environmental biology and environmental attitude have a meaningless relationship, in general, both of them have a significant positive relationship so that student's environmental attitude need to be considered in efforts to improve the cognitive skills in environmental biology.

**Keywords:** -

**GT-1207-378**

**ROOM: FIB-6**

**15:25 - 15:35**

### **Coal Fly Ash Based Geopolymer Improvement by Alkali Activator Modification Using Graphene Nanosheets**

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**Abstract** - Coal fly ash based geopolymers have been synthesized using alkali activator solution containing graphene nanosheets (GNs). The effects of GNs concentration and curing temperature on the mechanical properties and morphology of geopolymers were studied. The synthesis process involved several steps, starting from the GNs preparation until the geopolymer molding. Mechanical testing showed that the compressive strength increased with the increase of graphene concentration and the curing temperatures. The highest compressive strengths (29,544 MPa) was exhibited by the geopolymer synthesized using 20 mg/ml graphene with curing temperature of 80. On the contrary, the porosity of geopolymer decreased with the increase of graphene due to the pore filling mechanism by the graphene as indicated by the scanning electron microscopy (SEM) images.

**Keywords:** -

LW-1115-037

ROOM: FIB-7

13:00 - 13:10

**Customary Law in Indonesia that Protected by National Law**<sup>1</sup>Mohammad Yufi Al Izhar, <sup>2</sup>Arrum Widowati, <sup>3</sup>Alleandria La Graha, <sup>4</sup>Ridwan Arifin<sup>1,2,3,4</sup> Faculty of Law, Universitas Negeri Semarang, Indonesia<sup>1</sup>yfalizhar0507@students.unnes.ac.id; <sup>2</sup>arrum.widowati@students.unnes.ac.id; <sup>3</sup>alleandria01@students.unnes.ac.id;<sup>4</sup>ridwan.arifin@mail.unnes.ac.id

**Abstract - Background:** Customary law is a law that develops and applies in communities in an area that is not written and is not stipulated by the authorities but is strictly adhered to by the local community because it is considered to have legal force. Legal development in Indonesia cannot only be based on western legal literature but we must also maintain existing customary law with norms that regulated in it because it is the identity of the Indonesian people. As an example, we take the customary law in Aceh, which is Caning Law or *Qonun Jinayat*. Because in Indonesia the principle of legality in customary law is recognized. Recognition of this customary law is listed in Article 18B paragraph (2) of the 1945 Constitution. **Purpose:** This paper is intended to research and analyze the importance of customary law in Indonesia. **Method:** This research uses a legal research method through a qualitative approach by giving views to the public and the government in knowing the importance of customary law in Indonesia. **Finding:** With this we find that customary law in Indonesia is very important and even customary law in Indonesia is protected by national law that governed by the principle of legality of customary law, recognition of this customary law is contained in Article 18B paragraph (2) of the 1945 Constitution. Customary law is recognized because it is considered as the legacy of our ancestors, and has original noble values from each region in Indonesia. An example is the caning law (*Qanun Jinayat*) in force in Aceh continues to apply because the law is considered to be in accordance with the values that exist in the Aceh community.

**Keywords:** Customary; Law; Caning Law; Community

SP-1115-030

ROOM: FIB-7

13:10 - 13:20

**Building Political Image Representative Institution in Local Level**<sup>1</sup>Fathur Rahman, <sup>2</sup>Anang Sujoko, <sup>3</sup>Tia Subekti<sup>1,2,3</sup> Faculty of Social and Political Science, Universitas Brawijaya, Indonesia<sup>1</sup>fathur\_rahman@ub.ac.id; <sup>2</sup>anangsujoko@ub.ac.id; <sup>3</sup>tiasubekti@ub.ac.id

**Abstract -** Regional People's Representatives Council (DPRD) as one of the pillars of the organizer of the local governance is expected to become a trustworthy representative institution. But, the incident of corruption by 40 members of Malang City DPRD 2014-2019 has omitted public expectations. Thus, how what about the political image of representative institutions in Malang. Thus, paper has found evidence of that there is relation between political image DPRD and with mass corruption cases. Data obtained through interviews, and documentation and literature studies. The result is in the aspect of competence, the members of DPRD Malang City are well educated people. But it is not balanced with the cadre recruitment model, candidacy. In addition, the public does not trust the people's representative institutions because the principle of democracy is used as a tool for political patronage. Finally, the low political will of the people's representatives because of their preference for changing public costs into personal benefits, their political parties.

**Keywords:** political image; representative institutions; local level

SP-1123-080

ROOM: FIB-7

13:20 - 13:30

**Political Digital Marketing Strategy In Regional Head Election****(Case Study of the Victory of Ridwan Kamil - Uu Ruzhanul Ulum in 2018 West Java Governor Election)**<sup>1</sup>Muchsin al-Fikri, <sup>2</sup>Tresia Wulandari\*

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**Abstract -** The victory of Ridwan Kamil and Uu Ruzhanul Ulum in the 2018 Regional Election in West Java Province has triggered the researchers' curiosity and generated various scientific studies in various dimensions. This phenomenon is very fascinating to be observed, especially on the political digital marketing strategy of the RK-UU as they were defeating its four competitors. This research aims to find out and analyzing (1) Political digital marketing strategy and technique carried out by the RK-UU campaign team to win the 2018 West Java Governor Election. (2) The effectiveness of communication through social media by Ridwan Kamil and Uu Ruzhanul Ulum in influencing and winning public sympathy and (3) What strategic steps were taken by the coalition parties bearing the RK-UU, embodied in the Campaign Team and the Success Team, in the process of winning the RK-UU in 2018 West Java Governor Election. The qualitative methodology is being used with a descriptive case study approach. Data collection was exercised with primary and secondary data through depth interview with several informants such as the Chairperson of the West Java KPU, the Chairpersons of the bearer parties, the Chairperson of the Success Team, the volunteers and the special of the candidates. The result of this study indicates that the RK-UU campaign team has succeeded in optimizing political digital marketing theory through social media that was neatly

and nicely managed while exploring creativity aspect in conveying vision, mission, ideas and programs. It was also enhanced with the optimization of their political machines, PPP and Nasdem West Java, as well as strengthened by millennial volunteers who are literate about information technology. The RK-UU Campaign Team was also succeeded in implementing a strategy of prioritizing the figures and personages of the candidates who happened to be both Mayor and Regent officials which already known by the public. Considering this situation, the party aspect is not particularly emphasized especially when the image of the party that is in free fall due to corrupt behavior. Ridwan Kamil and Uu was succeeded in conducting political communication to all levels by developing imaging politics through social media such as Twitter, Facebook, Line, Instagram, and others. The social media effectiveness in this case can beat conventional media. The RK-UU Campaign Team was also proved successfully applied the political marketing techniques to win the hearts of voters in West Java through Marketing Mix approaches, which is known as 7P (Product, Promotion, Price and Place, People, physical evidence), Process).

**SP-1125-084** **ROOM: FIB-7** **13:30 - 13:40**

### **Neutrality of The State Civil Apparatus in The General Election of The City of Makassar in 2018**

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**Abstract** - This research is entitled Neutrality of the State civil apparatus in the general election of the city of Makassar in 2018, the purpose of this study is to find out whether ASN in Makassar city is neutral or not, as well as knowing how the supervision of the General Election Supervisory Committee of the city of Makassar in the simultaneous Election in 2018. This research was conducted covered SKPD Makassar city and PANWASLU Makassar City Office by using the method of the qualitative approach of case studies. This study will indicate the involvement of ASN Makassar city in practical politics in ELECTIONS simultaneously, but it is clear there is already a rule of law which banned the activities of alignments on one particular candidate

**Keywords:** neutrality, ASN, supervision of Panwaslu

**SP-1128-125** **ROOM: FIB-7** **13:40 - 13:50**

### **The Obstacles of Women's Parliamentary Representation in Indonesia**

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**Abstract** - Women's representation in the legislature as the subject of national development is still underestimated, this is indicated by the small number of women who are members of the legislature as at both the central and regional levels. The purpose of this research is to examine the factors that cause the low representation of women in the legislature. Using a quantitative approach, the survey was conducted toward members of the Regional House of Representatives of West Java Province. A total of 72 respondents were selected by simple random sampling method which was further analysed using exploratory factor analysis. The results show that of the 14 indicators tested, 4 factors were formed that caused the underrepresentation of women in the legislature. These factors include knowledge, the environment, discrimination and political parties.

**Keywords:** Womens' role; exploratory factor analysis; legislative elections.

**SP-1130-167** **ROOM: FIB-7** **13:50 - 14:00**

### **Aisle Business Program in The Framework of Sustainable Development in Eradicating Poverty in Makassar**

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**Abstract** - This research aisle business program in the framework of sustainable development in eradicating poverty case study of aisle business entities in the city of Makassar. The Makassar city government has issued a program which is called the aisle business entity intended to increase economic growth in the city of Makassar. to find out the efforts made by the government in tackling poverty that occurred in the city of Makassar. This research is qualitative with a case study approach by looking at all problems clearly and measurably. growth in favor of the poor, perfecting and expanding the scope of community-based development programs, increasing access of the poor to basic services, building and perfecting social protection systems for the poor. and success in reducing poverty even though this aisle business entity is still group-based

**Keywords:** Makassar city government; poverty alleviation; business aisle.

**SP-1206-269** **ROOM: FIB-7** **14:00 - 14:10**

### **Building Capacity Teacher towards Advanced Indonesia (Case Study in Central Mamuju)**

Busdir

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**Abstract** - This research is to know the increase capacity of teachers to Indonesia developed (Central Mamuju case study) which leaves several problems improvement of teachers in central Mamuju district ranging from teachers who have not yet Bachelors 1 (one) to lack of facilities Supporting the increase of teacher capacity, the method used is qualitative descriptive with a case study approach so that the problem can be seen comprehensively. Education is important in a nation in order to have global competitiveness and as well as to improve skilled and superior human resources and competitiveness, this is the underlying research capacity-building because the teacher Skilled and knowledgeable is a nation's assets responsible for preparing superior and competitive human resources. Although in the end in the context of improvement of human resources in central Mamuju District still felt to tell some challenges that must be repaired such as access teachers who are in remote areas, lack of facilities and infrastructure and less The maximum budget prepared by the Government. The point is the mandate of the Constitution is to educate the life of the nation

**Keywords:** capacity building, education, government of central Mamuju.

**SP-1130-169**

**ROOM: FIB-7**

**14:10 - 14:20**

**Analysis of the Application of the Islamic Education Paradigm in Creating an Orderly Administration in the Bureaucracy in Palopo State Islamic College (STAIN)**

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**Abstract** - This study is entitled an analysis of the application of the Islamic education paradigm in creating an orderly administration in the bureaucracy at the state Islamic high school (STAIN) Palipo city. With the uptake of Islamic values below into the bureaucracy in campus it is expected that employees will humanize more human beings. In this study the authors used a qualitative descriptive study emphasizing case studies. It is hoped that this research can improve the orderly administration of the state Islamic high school (STAIN) Palopo city.

**Keywords:** -

**SP-1121-124**

**ROOM: FIB-7**

**15:15 - 15:25**

**Organizational Change Readiness Star Hotels in Facing the Transformation of The Hospitality Industry in The Province of South Sulawesi**

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**Abstract** - This study examines the readiness index to change by hotel employees in facing the transformation of the hotel industry. This paper aims to analyze factors that contribute to the readiness index to change by employees of star hotels. Data collected from survey to hotel employees (287 respondents) in Makassar and Parepare city. This paper uses the Technology Readiness Index to analyze data from the survey. The study reveals that the readiness index to change by the hotel employees is at 3.36; the level is moderate. High contributing factors should be maintained, whereas low contributing factors should be improved. This paper provides insight into the importance of the readiness index to change by the hotel employees. The study also indicates that contributing factors are essential information for hotels in establishing technology transformation in services.

**Keywords:** Readiness Index to change; Transformation; Technology; Hotel service

**SP-1128-127**

**ROOM: FIB-7**

**15:15 - 15:25**

**Analysis of Patient Satisfaction Levels on The Quality of Health Services in Medical Center ITS**

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**Abstract** - The number of health institutions causes them to improve the quality of services Provided, so that, the satisfaction of the patient is high and the loyalty of the patient is Increased. One of the health institutions in the campus is the Medical Center ITS which is a health institution ITS intended for students and can serve the general public. Although the service facilities at Medical Center ITS are quite complete, but the large number of health institutions is available roommates, make research is needed on the level of satisfaction of Patients to the Medical Center of ITS. The existence of community service-based research is expected to provide input for the Medical Center ITS how the level of satisfying patient with the quality of health services in the Medical Center ITS. Based on the results of the analysis, shows that the instruments that must be maintained are Empathy, Responsiveness, and Assurance dimensions. While the dimensions that must be improved are satisfaction with the sign board and

the adequacy of the doctor, the friendliness of the officers in serving customers, the doctor's ability to explain the patient's illness and the parking facilities.

**Keywords:** Satisfaction of Patient; Quality of Health Services; Medical Center ITS.

**SP-1128-129**

**ROOM: FIB-7**

**15:15 – 15:25**

### **Community Resilience And Sustainability Levels Of Thematic Kampong In Malang City**

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**Abstract** - A new concept has emerged in the development of settlements, one of the concepts is thematic Kampong. Thematic Kampong is about offering the community to be proactively involved, so that it is not only community-based but also the creation of distinctively characterized kampong spaces that are sustainable by the community. Related to this, one form of capital in the successful development of settlements (for example thematic kampong) is community resilience. The ability of a sustainable settlement is based on the preservation and development of five dimensions. The dimensions are environmental, social, economic, infrastructure and institutional dimensions. Based on this, it is necessary to assess community resilience and level of sustainability in the development of thematic kampong in Malang. The analysis technique used in this research is Structural Equation Modeling (SEM). This method used because there is a relationship between variables that occur simultaneously. As a creative effort to develop community involvement in city planning, in 2016 the Government of Malang City through the Regional Development Planning Agency began organizing Malang Design Festival activities which were manifested in the Thematic Kampong Competition event. This research expected to know the sustainability of the thematic kampong after the existence of these activities. From the results of the analysis it has been found that for Malang City there are several things that affect the sustainability of the thematic kampong, namely Social Aspects and Ecological Aspects.

**Keywords:** Community Resilience; Sustainability Level; Thematic Kampong

**SP-1204-224**

**ROOM: FIB-7**

**15:15 – 15:25**

### **The Participative Role of The Society in The Use of The Village Funds (Constructions of the Role Rural Society on the Use of Village Funds)**

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**Abstract** - The Indonesia Ministry of Villages, Underdeveloped Regions and Transmigration No. 5 of 2015 on the Establishment of Village Funds (Dana Desa) Priority in 2015, about Rp 20.766 trillion have been allocated for village development priorities for infrastructure development and community Development. Participations Societe will be the key to the implementation of this program which is the community is expected to participate actively in planning, implementation and monitoring, so that the utilization of village funds is more transparent and accountable. The goal is to build Indonesian people from the village to an independent Indonesian society. Many things become concern, in using the funds is not really involving the village community in a participatory and way empower the community. Several indications show that there is uncertainty about the usage program and the priority of village funds is not related to what society needs and aspirations of the community. With the condition of the lack of knowledge of village officials, who have not been optimal in coordinating causing not optimal development of community welfare in rural areas. One reason is the lack of involvement of the community since the initial process to the end of the program so that the planning is arranged not in accordance with the needs. This paper discusses how participatory roles can be used in village fund use programs in planning, implementing and monitoring village evaluations to be more participatory, transparent and accountable.

**Keywords:** village funds; form; participatory; transparent; accountable.

**SP-1207-383**

**ROOM: FIB-7**

**15:15 – 15:25**

### **Prevention of Religious Radicalism in Indonesian Youth: Case Study in Islamic Student Organization Leadership**

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**Abstract** - The current definition of radicalism is unclear. Distrust of the government and fanaticism in religious groups trigger radicalism. Forms of Religious Radicalism in the way of movements against the state system in the name of religion, violent actions in the name of religion, and infidelity of others in the name of religion. Indonesia is a country with a Muslim majority population in the world. The role of students as part of youth in

Indonesia is vital for the country's future. The purpose of this study was to analyze the prevention of religious radicalism in Islamic Student Organizations. Qualitative research methods by observing, interviewing, and secondary data. The triangulation method is used to validate research findings. Case studies on four Islamic Student Organizations: HMI, PMII, IMM, and KAMMI. Islamic Student Organizations have unique and different religious characteristics. Islamic Student Organization Leadership has a different regeneration system and can prevent religious radicalism. Government support is needed to suppress radicalism by reviewing several policies, including policies that give rise to a dichotomy between Religion and the State.

**Keywords:** Religious Radicalism; Indonesian Youth; Organizational Leadership; Islamic Students

**SP-1130-170**

**ROOM: FIB-8**

**13:30 - 13:40**

### **Reconciliation After The 2019 Presidential Election**

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**Abstract** - This study describes reconciliation after the 2019 presidential election, interesting to study because ultimately political elites agreed to unite in the interests of the nation and state. Elections that were originally to elect and find the best leaders among the best, inevitably lead to divisions in society. The research technique used is descriptive qualitative which focuses on case studies. In the end, the presidential candidates who compete in the general elections in the integrity of the nation and prioritize the interests of the Indonesian people compared to the interests of individuals, groups and parties.

**Keywords:** reconciliation; presidential election; democracy

**SP-1203-212**

**ROOM: FIB-8**

**13:40 - 13:50**

### **The Differences In Level Of Satisfaction Relationship On Students Against Couple Viewed From Giving PAC Condition**

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**Abstract** - This study aims to determine differences in the level of relationship satisfaction among students with their partner in terms of the provision of PAC conditions (presence, absence, and control). This type of research is a quasi-experimental design with The Randomized Posttest Only Control Group Design. This research was conducted at University X in Makassar, with a total of 30 respondents. In this study all participants were collected to fill a scale of happiness and satisfaction consisting of 12 items. After that two to three days later, participants were divided into three groups namely presence, absence, and control. Participants in each group are instructed to write things related to their relationship. Next, all participants were reassembled to fill the same scale. Data obtained from participants' answers were analyzed by One Way Anova test using SPSS 22.00. Hypothesis analysis result shows that value  $F = 8.140$  and significance value of  $0.002$  ( $p < 0.05$ ). Data analysis result on this study shows that there is differences in level of satisfaction relationship on students against couple viewed from giving PAC condition.

**Keywords:** Difference; Relationship satisfaction; Giving of PAC condition

**SP-1204-215**

**ROOM: FIB-8**

**13:50 - 14:00**

### **Democratic Policing in Solving Police Problems**

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**Abstract** - The research aims at exploring the involvement of community (public authority, bureaucratic authority, and political authority) and other institutions which are also responsible for finding the solutions of social problems affecting security and public order as well as describing the implementation of democratic policing in solving social cases. The paradigm of the research is qualitative with explorative descriptive design. The research is a case study conducted in three Indonesia police regions: West Sumatera Police Region, Riau Police Region, and West Kalimantan Police Region. Primary data are collected through focus group discussions (FGDs), with question guidance and questionnaire. Secondary data are gathered from certain sources such as documents as well as references related to the topic of the research. The primary and secondary data are analyzed using qualitative analysis through data reduction, data presentation, conclusion or verification. The conclusion of the research reveals that (1) the bureaucratic authority and political authority do not fully support police in solving social cases; (2) the support of the two types of institutions depends on the initiatives of the police and; (3) police are known

as the initiation as well as the activation to involve the two types authorities mentioned above in eliminating and preventing social conflicts among public in order to present security and public order. The support given by the authority is developed by police from all ranks through the cooperation of the four pillars conducted by Babinsa (a sergeant of Indonesian Army who coaches a village, a Babinkamtibmas (a police sergeant from the Indonesian National Police who coaches security and public order), public or religious figures or public authorities (head of sub-district, head of regency, mayor, governor), and legislative parties (political authority). The solutions of social problems at the level of police resorts in the three police regions have similarities in the context of patterns and characteristics. The similarities are: (1) placing society as the main actors; (2) the roles are taken by the local head of neighborhood, religious and police leaders; and (3) local or customary values still play important roles in solving social conflicts. This can be seen when the Ninik-Mamak (grandparents and uncles) in West Sumatera and Lembaga Kerapatan Adat (Customary Discussion Agency) in Riau and West Kalimantan play their roles in solving social conflicts.

**Keywords:** democratic policing; problem solving

**SP-1206-263**

**ROOM: FIB-8**

**14:00 - 14:10**

### **Positioning of Regional Innovation System Strategy in Sustainable Development Goals and Regional Planning & Development Policy in the Semarang City**

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**Abstract** - Besides sustainable development and smart cities, there is a Regional Innovation System (RIS) that aims to encourage regional competitiveness through innovation and its application prioritizing science and technology (Freeman, 1995; Metcalfe & Ramlogan, 2008). The successful implementation of RIS involves several challenges, one of which is the policy, that is the key to build a functioning RIS (Karlsen & Larrea, 2018; Tödtling & Trippl, 2005). Semarang City as the capital of Central Java Province with a regional competitiveness index score in the green category, has the opportunity to develop RIS better. The RIS development strategy is the most strategic form of RIS roadmap to be implemented. Therefore, it is important to know the position of the RIS strategy in the concept of sustainable development and planning policies so that RIS is more easily understood and implemented in the regional planning and development process. Positioning is obtained through content analysis techniques by concluding the suitability of some literary concepts, RIS policies, planning documents (RPJMD), and other related documents. The RIS strategy relates to each SDGs pillar which are grouped into 4: economic, governance, environment, and social. While in Semarang City's RPJMD, RIS strategy is included in every RPJMD mission, both economic, governance, infrastructure, and socio-cultural missions. This paper shows that the RIS strategy of Semarang City in line with sustainable development concept and were accommodated in planning policies (RPJMD).

**Keywords:** Regional Innovation System (RIS); Sustainable Development Goals (SDGs); RPJMD.

**SP-1206-284**

**ROOM: FIB-8**

**14:10 - 14:20**

### **Policy In Disruption Technology Era: Case Study Transportation Implementation in Surabaya**

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**Abstract** - Smart City which updates information and communication technology in daily governance that has the aim to improve public services, and improve the welfare of its citizens. The city of Surabaya is making improvements in the field of public services, where the city of Surabaya has begun to implement Smart City with the aim of improving the welfare of its citizens. The Surabaya city government made a breakthrough in transportation in the city of Surabaya. My Transport is an application based on a tablet platform, where the public can use my transportation application so that the people of Surabaya can find out the existence of public transportation in the city of Surabaya. Through my transportation application, Surabaya city residents who usually do not know the arrival time of public transportation, they can finally find out when the Bus, Microbus stops near my transport application users. In research using descriptive qualitative research methods. Where in this study the focus of his research is in the city of Surabaya, through the Surabaya City Transportation Agency. Through the results that have been examined in this study the Surabaya city government has made an update that can be said to be the latest innovation from the city government of Surabaya in order to prosper the community. Through my transportation application the citizens of the city of Surabaya can see the CCTVs in the city of Surabaya through the grip. The sophistication of the application that has been done by the Surabaya city government makes it easier to be able to access how the traffic conditions in the city of Surabaya.

**Keywords:** -

**SP-1206-285**

**ROOM: FIB-8**

**14:20 - 14:30**

### **The Impact of Surabaya Akseliterasi Program in Genteng Candirejo Village**

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**Abstract** - This research aims to see the impact of the Department of Library and Archives Surabaya's policy, The Surabaya Akseliterasi Program for the community in Genteng Candirejo Village. We use the Impact Evaluation theory by Samodra Wibawa which has four indicators such as 1) individual impact, 2) organizational impact, 3) community impact, and 4) social institutions and systems impact. Surabaya Akseliterasi is a collaboration program with Jawa Pos to accelerate reading interest through community participation by held competition that was followed by villages from 31 districts. The research method used is descriptive qualitative. The results showed that Surabaya Akseliterasi program produced positive impacts such: 1) individual impact is seen from the change of reading interest and income, 2) organizational impact show by community awareness for the development of reading interest, 3) community impact shown by the participation of the people who involve and 4) social institutions and systems impact is seen in aspects of education, religion, and social interaction. Conclusion: Surabaya Akseliterasi Program has had an impact on developing a reading interest in Genteng Candirejo Village especially on the community impact.

**Keywords:** Impact; Surabaya Akseliterasi; Policy

**SP-1207-307**

**ROOM: FIB-8**

**14:30 - 14:40**

### **Maintaining Sustainability of Local Craftsmen Community through Product Diversivication Development**

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**Abstract** - This study aims to product diversification development of ceramic and bamboo craftsmen in Malang East Java as a contemporary interior decoration. Their condition is stagnant due to the lack of product development so that the craftsmen are decreasing and no regeneration. Ceramic craftsmen cannot compete with houseware ceramic products such as tableware because they are inferior to the larger industry, but also cannot compete with custom ceramic products that can produce ceramics with various unique and artistic shapes because the process is using a cast molding technique. The number and technical ability of bamboo craftsmen are very limited in Malang. In this research, ceramic and bamboo crafts combined as contemporary interior decoration is expected to be the product diversification, so that they can compete in national or international markets and preservation of cultural heritage. This research uses brainstorming design thinking method by combining two materials to create new alternative products for ceramic and bamboo craftsmen in Malang. Data collection was carried out through field studies and literature on the development of ceramic and bamboo crafts in Malang and on the market today, the ability to produce ceramic and bamboo craftsmen in Malang, and research on market needs and tastes of ceramic and bamboo handicraft products. The study was conducted through observation and interviews. The results of the observations will be used to develop ceramic and bamboo product design products that can be produced by craftsmen following current market conditions.

**Keywords:** Sustainability; craftsmen; development; product diversification

**SP-1207-326**

**ROOM: FIB-8**

**14:40 - 14:50**

### **Waste Management in Improving the Community Economy (Case study of Central Mamuju regency)**

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**Abstract** - This study describes the management of waste in increasing the Economic Community (case study of Central Mamuju district), interesting to be studied because central Mamuju which became a new autonomous region in the year 2013 then, must be established early as the region Clean and healthy and can be freed from garbage. Garbage is a matter of the city that should be anticipated because of the rapid development of the community as in central Mamuju, certainly will make the garbage increased, so early on should be planned good waste management to realize the area clean and Healthy. The research technique used is descriptive qualitative which focuses on case studies. Success of this garbage management program is only new in one sub-district precisely Topoyo, is expected sometime forward all areas already have garbage banks as applied in Topoyo.

**Keywords:** waste management; corporate economy; trash Bank

**SP-1130-172**

**ROOM: FIB-8**

**14:50 - 15:00**

### **Causes of Child Sex Tourism Systematic Literature Review**

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**Abstract - Background:** The tourism industry beyond all reasonable doubts is not only one of the most rapidly growing industries in the globe but one of the largest employers generating billions of dollars annually. However, in spite of that, the industry according to nascent studies has some profound negative socio-economic, political, cultural and environmental impacts on communities. For instant, tourists engaging children in sex for which they are not ready for both physically, mentally and psychologically has negatively impacted them physically, psychological, mentally, emotionally, economically; and socially. Some have even died. Although the precise number of child sex tourism casualties and their circumstances is not scientifically well researched and documented, what is indisputable is they are in millions. This lack of scholarly documentation, beyond reasonable has posed a great challenge to all concern authorities. Thus, this research was meant to address this gap. **Purpose:** The fundamental rationale for the systematic literature review is to examine the present scale and degree of the causes of child sex tourism, share knowledge to spark and inspire processes that will usher rapid growth from all directions in the fight against the menace. **Methodology:** A systematic review of the literatures using information collected from different sources was actuated. Google Search Engine was used to search these articles. During the search numeration combinations of words and phrases were used to ensure articles reflect the most recent knowledge and scholarly works. In essence, only peer-reviewed articles published after 2008 were selected except extras perceived to be of fundamental mileage to the study. However, articles published by staunch international organizations working in the protection of children for years and has produced indefatigable knowledge in commercial sexual exploitation of the children were stealthily appraised. **Results:** Poverty, which is commonly cited, is not the sole justification for the commercial sexual exploitation of children, even though it contributes to an environment that may sequel to such exploitation. In summation, a range of other complex contributing factors include consumerism, culture, economic disparities, social, political instability, environment, corruption, lack of reporting crimes, lack of and/or inadequate laws, poor enforcement, state lack of interest, debt burden, structural adjustment programmes, the practice of offering women as subservient to men, discriminatory policies, poverty, natural calamities, lack of training, demand and supply, power imbalances, sex trade, families encouragement, philanthropic organizations, internet access, crime and violence, transient workers, freedom of movement, domestic tourists, population expansion, child trafficking, individual, loss of communal farmlands; and porous borders. **Conclusion:** In conclusion, the causes of child sex tourism can be simply pooled and catalogued into social, economic, political, natural, technological, individual; and legal causes.

**Key words:** child, child sex tourism; commercial sexual exploitation; trafficking; prostitution; perpetrators; survivors; sex tourism; tourist; tourism; tourism development areas

**SP-1130-179**

**ROOM: FIB-8**

**15:05 – 15:15**

### **The Development Concept on Ecology Citizenship on The Community of Gunung Sewu**

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**Abstract** - Issues on environmental damage has become one the biggest global concern. We have watch and hear about the impact on almost every country in the world. Indonesia has been one of the countries that have experienced environmental crisis on almost every year. Some of environmental problems we had, such as forest burning, pollution and waste hasn't even found any right solution yet. The damage is made worse along with the escalation of infrastructure development that did not considering the ecological awareness, whether its highway, airport or the expansion of urban area. We can say the environmental damage happens in almost every place, including the karst area at Gunung Sewu, which threatened by the mining and tourism activities. There are some factors causing environmental damage, some are the lack of ecological education by the government to people, the schooling role that hasn't been optimized on its function to teach the environment-based learning, and also the low level of public awareness on sustainable development. Therefore, it is important to build ecological citizenship that responsible in protecting, managing and conservation the environment in a wise and fair way. From the point of view of Civic Education, this is a form of effort in developing civic virtue within the scope of Ecological citizenship. This study aims to determine the efforts made by the Yogyakarta Walhi in conducting guidance to the Gunung Sewu community on preserving the Gunung Sewu karst area. The qualitative method will be the research method that are going to use here, while the members of Walhi of Yogyakarta and Gunung Sewu Community will be the main research informants. The research will show some various efforts on ways to empowering people, that include community building, providing needed information and also socialization of conservation on Gunung Sewu Karst Area.

**Keywords:** Not Government Organization, Ecological Citizenship, Community Development

**SP-1205-249**

**ROOM: FIB-8**

**15:15 – 15:25**

### **The Structural Dimension of Organization of The Agency for Development of Pancasila As Ideology**

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**Abstract** - For the implementation of the Pancasila as a national ideology in the life of the nation and state, intensive effort is needed from all political stakeholders including the government. The establishment of the Agency for Development of Pancasila as Ideology (BPIP) with Presidential Regulation Number 7 of 2018 is an important part of this effort. Regulation of various aspects of the organization of BPIP is one of the determining factors for success in carrying out the tasks and functions of the organization. In this Presidential Regulation, there are several discussions regarding institutional characteristics and some organizational dimensions. This research discusses and analyzes the structural dimensions in the Presidential Regulation. With the normative juridical method, it was identified that BPIP was a revitalization from the UKP-PIP institution, several structural dimensions of the organization have been adequately regulated, namely formalization, specialization, standardization, hierarchy of authority, complexity, centralization and personnel ratios, there was a lack of clarity from the understanding of the BPIP leadership, unclear tasks and functions of the Steering Board and the Head of BPIP, and incomplete arrangement of professionalism. More adequate arrangements need to be made to the aspects of the duties, functions, authority and professionalism of organization members of the BPIP.

**Keywords:** organization; structural dimension; ideology.

SP-1205-250

ROOM: FIB-8

15:25 – 15:35

### Role of Higher Education in Communication of Religious Moderation Program

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**Abstract** - Today's diverse social and national life requires a harmonious social life. This is partly supported by the character of the lives of people who are moderate in religion. At present some members of the community appear to exhibit religious attitudes and behaviors that are exclusive, intolerant, hostile to fellow believers of different religions, even radical attitudes and behaviors that want to live in a state that is contrary to the basic principles of the Indonesian state. To overcome this, the Government through the Ministry of Religion launched the Religious Moderation Program. Universities has a strategic role in supporting the government realize this goal. With qualitative and exploratory approaches/methods it is known that this religious moderation policy/program is a breakthrough step by the government in facing threats to national life. In the framework of an authoritative public policy, this program does not yet have a strong legality foundation. The government, in this case the Ministry of Religion, has not yet stipulated it in the form of regeling public policies. Universities in accordance with its function in Tridharma Higher Education has a great opportunity to participate in the success of this government program. Some challenges and problems faced by universities in this effort, including relating to the juridical foundation, the availability of resources, commitment from university leaders, program communication and consistency in program implementation. The government needs to clarify this program at the operational policy level so that universities have operational technical guidelines to implement it.

**Keywords:** communication; program; religious moderation; higher education

SP-1204-216

ROOM: FIB-8

15:35 – 15:45

### Mediocracy in Indonesia Presidential Election in 2019

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**Abstract** - The involvement of the mainstream mass media in the 2019 presidential election (PILPRES) of the Republic of Indonesia increasingly shows that there is a strong interaction between political actors, political parties, mass media, the public, and the government. The building of popularity, electability, and a positive image is a goal for the political elite and the government in achieving victory and power. This study aims to reveal how political logic has followed the logic of media in the 2019 Presidential Election. By using Stromback mediation, researchers want to see how to internalize media logic into political logic from the perspective of the television media industry elite. This research reveals that private television stations engaged in the reporting sector are in the first phase; namely, the mass media is still a means for political elites and power to strengthen their interests. In this phase, television stations become a campaign tool as well as building a positive image for political parties, political party elites, and candidates promoted by political parties. However, in general, this research reveals that the logic of media has become a national winning strategy. The intervene of media logic in their political logic appears on their efforts in embracing the media to achieve victory, presenting reliable speakers in every debate in the media, and making activities that deserve media coverage as a positive tone. The massive and positive media exposure has become very important in convincing the public to vote. Finally, this study revealed that how the media work perspective becomes a guide for a successful team to build a candidate's electability and popularity.

**Keywords:** Mediatization; Political Media; Political Communication; Election

LW-1113-020

ROOM: FIB-9

13:30 – 13:40

**The Synchronization of Energy and Electricity Laws**<sup>1</sup>Wahyu Kurniawan\*, <sup>2</sup>Suwarno Abadi<sup>1,2</sup> Universitas Wijaya Putra<sup>1</sup>wahyukurniawan@uwp.ac.id\*

**Abstract** - The law of energy and electricity occurs when there is a legal conflict between the two. Energy as one of the sources of electricity has an open system in which the private sector is allowed to participate in energy management. But in the area of electricity, the state in addition to being a regulator also has the authority to operate through state-owned enterprises. This legal conflict began with the cancellation of Law No. 2009 concerning Electricity by the Constitutional Court. The Constitutional Court uses a static textual interpretation approach to Article 33 of the 1945 Constitution by stating that electricity as a branch of production must be controlled by the state directly by closing private involvement. This synchronization aims to accommodate the national energy needs especially electricity based on real and current conditions. Electricity needs cannot be met anymore by relying on fossil raw materials given the limited availability, negative effects of fossil electricity, Indonesia's geography which is not evenly distributed and requires the fulfillment of independent electricity, and the speed of energy technology that supports the fulfillment of electricity efficiently. This article explores the synchronization of energy law as *lex generalist* and electricity law as *lex specialist* which starts from the approach of interpreting the constitution. The concept of the 'state control' contained in Article 33 of the 1945 Constitution should not be interpreted literally as strictly control by the state monopolizes the entire process from production to distribution over national electricity. The dynamic approach refers to the conditions when interpreting the concepts in the constitution. The concept of state power over this branch of production needs to be changed by using a dynamic approach where the state is no longer the party that controls the energy and electricity production and distribution technology. The state is limited to being a regulator and supervisor of energy processing and electricity distribution.

**Keywords:** -

LW-1115-041

ROOM: FIB-9

13:40 – 13:50

**Maritime Disaster in Outermost Island as Threat of Sovereignty and National Maritime Security in the International Law Perspective**<sup>1</sup>Agung Imam Zulhatta, <sup>2</sup>Angga Faris, <sup>3</sup>Surya Wiranto<sup>1,2</sup> Master Degree Student of Maritime Security, Indonesia Defense University<sup>1</sup>Researcher at Indonesia Institute for Maritime Studies (IIMS)<sup>3</sup> Maritime Security Study Program, Indonesia Defense University<sup>1</sup>imamzulhatta@gmail.com; <sup>2</sup>anggarfarissaputra@gmail.com; <sup>3</sup>suryawiranto1@gmail.com

**Abstract** - Indonesia is one of the countries in the world that is very vulnerable to natural disasters. Climate change is increasingly extreme globally, and Indonesia's position in the Ring of Fire become the main reasons for frequent maritime disasters such as abrasion and tsunami disasters, and this is a security threat considering that Indonesia as a maritime country which geographically comprises 2/3 of the sea area, and a group of islands. Maritime disasters triggered by climate change, impact on loss of island areas and beaches due to rising sea levels, as happened in several Indonesian islands, such as Tiban Island, Bengkalis Island, six islands in the Kepulauan Seribu and other islands. If this happens in the outermost islands, it will potentially become a threat to territorial sovereignty, national defense, and trigger international border conflicts. In mitigating abrasion disasters on the outermost islands, it needs to be handled wisely and appropriately. This because in International Law, Indonesia has ratified the United Nations Convention on the Law of the Sea (UNCLOS) 1982 in determining territorial boundaries in the sea region, especially those directly adjacent to other countries. This study uses descriptive-qualitative methods in analyzing the problem of the loss of determinants of territorial area measurement, caused by Maritime Disasters from the perspective of International Law. The maritime security concept, explained by Christian Bueger through the Maritime Security Matrix, will help analyze the threat of the Abrasion and Tsunami disaster on the outer islands as a threat. To achieve a "World Maritime Exis", Indonesia needs to pay attention to the impact of natural disasters, especially maritime disasters on the outer islands, to maintain the country's sovereignty through policies related to disaster mitigation.

**Keywords:** Climate Change; Maritime Disasters; Maritime Security; International Law; Border Conflict; UNCLOS 1982.

LW-1119-061

ROOM: FIB-9

13:50 – 14:00

**The Paradigmatic Perspective on Reforming Indonesia's National Engagement Law**

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**Abstract** - Indonesian national engagement law as stated in Book III of Burgerlijk Wetboek (the Civil Code) which is more than 171 years old is considered to be unable to respond to transactional challenges that emerged in the era of the industrial revolution 4.0. This objective condition encourages the need for reform of Indonesia's national engagement law which in turn is able to provide maximum legal protection for the parties in all commercial transactions carried out, both domestic and international. One of the paradigmatic issues that arises is whether the renewal of Indonesian national engagement law is developed based on customary law or international law. This type of research is a normative legal research, with the legislative approach and historical approach. The theory used to analyze is the theory of convergence law. The results of the analysis show that the universalistic particularism paradigm is very rational to be applied in the reform of Indonesia's national engagement law. It is recommended that the legal reform of Indonesia's national engagement be done partially in order to fill the legal vacuum.

**Keywords:** Paradigmatic; Renewal; National Engagement Law

**LW-1121-074**

**ROOM: FIB-9**

**14:00 – 14:10**

### **Terrorism and Islamic Radical Movement in Socio-Legal Persepective**

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**Abstract** - Terrorism has become a worldwide phenomenon in the 21<sup>st</sup> century. Terrorism has becoming one of the global issues since the incidents of September 11 2001 in World Trade Centre which threatened and endangered the peace and security of mankind. Terrorism internationally condemned as the unlawful use and the manifestation of political movement. In October 2004 the UN Security Council unanimously passed Resolution 1566 which defines terrorism and declares that in no circumstances can terrorist acts be condoned or excused for political or ideological reasons. Terrorism can be conceptually and empirically distinguished from other modes of violence and conflict by the following characteristics; a) it is premeditated and designed to create a climate of extreme fear; b) it is directed at a wider target than the immediate victims; c) it inherently involves attacks on random or symbolic targets, including civilians; d) it is considered by the society in which it occurs as 'extra-normal' that violates the norms; e) it is used primarily to influence the political behavior of governments, communities or specific social groups. The acts of terrorism are seriously threatening the human civilization & the security of mankind. The purpose of this study is to analyze the acts of terrorism and radicalism as a crime against humanity in the socio-legal perspective.

**Keywords:** Terrorism; Radicalism; Crime Against Humanity; International Criminal Court; Human Rights

**LW-1201-192**

**ROOM: FIB-9**

**14:10 – 14:20**

### **Law Enforcement of Illegal Fishing and Overfishing of Fisheries Resources (In State Defense Aspects)**

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**Abstract** - This study aims to examine how law enforcement against illegal fishing and overfishing in the Indonesian ocean region is carried out by "Foreign Countries" such as Malaysia, Vietnam and other countries. We know that marine resources, in this case fisheries in Indonesia, are one form of the country's "defense" aspects. Indonesia's Exclusive Economic Zone or called ZEEI in the North Natuna Sea and the Malacca Strait is an area that is often the case. For example, until November 2018 the Indonesian Government had handled 134 illegal fishing cases and 41 of them had permanent legal force. Illegal fishing itself is often associated with large-scale fishing or overfishing that results in damage to the underwater ecosystem. Underwater ecosystems will become extinct if illegal fishing and overfishing cases are not seriously handled by the Government and Law Enforcement Officials. Foreign ships of illegal fishing and overfishing can be sanctioned in the form of violations of Law Number 31 of 2004 concerning Fisheries as amended by Law Number 45 of 2009 with the threat of a maximum prison sentence of 6 years and a maximum of Rp 20 billion rupiah. Also, in the 1945 Constitution of the Republic of Indonesia mandates in article 27 paragraph (3) and article 30 paragraph (1) that state defense and security are the rights and obligations of each citizen to participate in the national defense and security effort and defending the country. The data collection method is carried out by means of literacy studies and legislation and analyzing qualitative descriptive data.

**Keywords:** illegal fishing; overfishing; law enforcement; national defense; APH

**LW-1206-265**

**ROOM: FIB-9**

**14:20 – 14:30**

### **The Importance of Law Enforcers to Understand Legal Psychology in the Investigation Process**

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**Abstract** - Protecting and respecting human rights by not discriminating is a major pillar of the duty of the state. But if a human right is neglected or deliberately violated and the state cannot overcome it. Then the state cannot be called a state of law. In the legal process there is the principle of presumption of innocence until the person concerned receives a court decision that has permanent legal force. In the process of providing information both a witness and a suspect to be set forth in the Police Investigation Report is the realm of the law enforcer. For this reason, it is very necessary for the mastery of legal psychology enforcer to prevent violence, and also the person being examined or the person who will provide the information is not under pressure. Because this will affect the formation of legal processes that uphold human rights. The purpose of this study is to determine the role of legal psychology in the investigation process to ensure the protection of human rights. The formulation of the problem is How do the police conduct investigations in Indonesia? and Why do law enforcers need to understand the legal psychology? This study uses a method with a normative juridical approach by examining literature sources. The results obtained in this study are the importance of law enforcers to understand the legal psychology in order to better protect the rights of suspects. Then also the legal psychology can increase effectiveness in the investigation process, because law enforcers can determine the right and appropriate ways in digging information on suspects.

**Keywords:** Legal Psychology; The Law enforcer; Investigation Process.

SP-1115-032

ROOM: FIB-9

14:30 – 14:40

**The Innovation of Public Service Through Smart Kampung Program at Kampung Anyar Village, Glagah Sub-District, Banyuwangi District**

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**Abstract** - Nowadays, we do not live in an era where everything is carried out using human labor. We have entered the era of digital society 4.0, a phenomenon where information technology become the frontline which brings us towards digital civilization. This also has an implication on the application of technology in public service in the government. The application of e-government is one of the government's efforts in realizing a technology-literate society because the world is increasingly connected and competitive which demands simple, easy, and fast service. It is certainly not an easy case to change people's way of thinking and work style to be digitally minded which can accelerate in a fast and clear way. Therefore, it's a big challenge for the community and all elements of government. The focus and objective of this study were to find out the innovation of public service through Smart Kampung Program at Kampung Anyar Village, Glagah Sub-district, Banyuwangi Regency, given that Banyuwangi Regency has a very wide area and the majority of people live in the village. While Kampung Anyar itself is one of the village which is very far from the urban area, where its location is at the foot of the mountain of Ijen. This study used qualitative descriptive analysis by collecting secondary data from various sources such as books, scientific journals, and etc. The results showed that the innovation of public service through Smart Kampung Program at Kampung Anyar Village, Glagah Sub-district, Banyuwangi Regency gives a great contribution to facilitating the community in accessing a fast, precise, and accurate public service.

**Keywords:** innovation; public service; smart kampung.

SP-1115-036

ROOM: FIB-9

14:40 – 14:50

**The Rise of Women Rights: The Existence of Women's Rights in Roles in Indonesian Government**

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**Abstract** - There are many disputes (pros and cons) of after the presidential election result come out. The emergence of anti-feminist movement against feminist movement has become a political-social phenomenon that has caused oppression, violations of human rights and the rights of women themselves, harassment, and discrimination for decades. Purpose: The paper examines and analysis the implementation and protection of women rights in governance in development of country. The method used is a quantitative method through a normative juridical approach that adheres to the law. This method uses pre-existing research data, for example from international journals. In fact, women have a big part in developing the country. Although many countries have implemented gender equality, there are still many problems regarding gender hierarchy. The male power system is more privileged than the woman in which the rational quality of men is given more value and is seen as more authoritative than the quality of women's emotional values. Feminists are good to be implemented in governance of Indonesia.

**Keywords:** feminism; anti-feminism; women rights; gender hierarchy

SP-1115-039

ROOM: FIB-9

14:50 – 15:00

**Marine Plastic Pollution: A Perception of Maritime Environment Security in Indonesia's National Defense System**

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**Abstract** - In the Maritime Security Study, climate change and marine environmental issues have now begun to exist for research. But specifically, environmental problems such as marine pollution have not been fully understood as a threat to national security in the maritime environment, even though the evidence of plastic pollution's impacts in the sea has begun to emerge. As an archipelagic state which consists of thousands of islands with a vast sea territory, Indonesia needs to adopt a geopolitical approach. It is crucial to define clearly the mutually reinforcing relationship between geo-information narratives and the practice of projections to gain an understanding of the pollution issue in the sea environment. This article describes the development of marine governance and maritime security which has become a state actor's control of the maritime dimension. This article begins with a discussion about how the ocean was represented, and shows that the sea is not merely an ecosystem that is driven by nature and is "calm", both in practice and in discourse. Then this article formulates an analysis of marine governance and maritime security in Indonesia's critical geopolitical view and analyzes the case of marine pollution as a potential threat to national interest, especially in the human security sector and consequences Indonesia has to face in the viewpoint of Indonesia's National Defense System.

**Keywords:** Plastic Pollution; Maritime Environmental Security; Maritime Security; Human Security; Geopolitics; National Defense System.

SP-1115-042

ROOM: FIB-9

15:05 – 15:15

### Development of Industry Based on Renewable Energy in Indonesia's Outermost Islands as Strengthening of Sea Power in the Perspective of Maritime Security

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**Abstract** - This article discusses the problems that are often faced by the Archipelagic State related to the outermost islands that border directly with other countries. Various potential conflicts such as; recognition of the ownership status of the island and problems in determining territorial boundaries, border surveillance and security missions by the navy which tends to conflict, until the problem of resources in the outermost islands, need to be addressed through an appropriate and comprehensive strategy. Of course, solving this problem must follow the internationally agreed rules of the game in the United Nations Convention on the Law of the Sea (UNCLOS) 1982, especially for Indonesia which has ratified this convention. Indonesia's loss due to the weak "the present of state" at the International Court of Justice (ICJ) related to the ownership status of the Sipadan islands and Ligitan islands, which was also declared as ownership by Malaysia that became a hard slap for Indonesia. This article offers an analysis based on International law perspectives related to industry development based on renewable energy in the outermost islands which can be a non-military strategic policy in strengthening "the present of states" so that it will have implications for the country's defense. The concept of maritime security by Alfred Thayer Mahan, and the concept of Sea Power Indonesia by Marsetio are a foothold in explaining the maritime threats that arise due to the weakening of "the present of state" in the outer islands.

**Keywords:** Industrial Development, Renewable Energy, Sea Power Indonesia, Maritime Security, present of state, International Law

SP-1207-399

ROOM: FIB-9

15:15 – 15:25

### The Synergy of Banjarmasin City for Facing Radicalism Threat in Information Disclosure Era

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**Abstract** - Information disclosure is one of the phenomena that occur due to the effects of globalization which causes a rapid increase in science and technology, especially the technology of communication. It makes the information spreads faster and there is almost unlimited information that can be accessed by public from various social level. Indeed it has positive and negative effects, which is one of the negative effects that occurs is the increasing deployment of radicalism both in real world and cyberspace, and it makes it more difficult to be detected. Banjarmasin, the capital of South Kalimantan, is one of the cities in Indonesia where the majority of the population is Moslem. By donating 1.6% of internet users from 2.2% of total internet users on Kalimantan, Banjarmasin can be said to be a area that is vulnerable to the radicalism through real world and cyberspace. But on the other hand, Banjarmasin is also ranked seventh as the most livable city in Indonesia because it has fulfilled

aspects of food availability, places of worship, clean water, education and health with a feasibility value of 65.1%. The purpose of this research is to analyze the synergy between the city government and the people of Banjarmasin so that they succeed in creating a strong shield in facing the threat of radicalism in information disclosure era. The research method used in this study is qualitative, with phenomenology approach. The results of this study are the synergy between the city government and the people who divided into various community organizations has been well established, coupled with the doctrine of *Tuan Guru Sekumpul* as a prominent figure from Banjarmasin who is able to ward off the threat of radicalism even in the current information disclosure era

**Key Words:** Synergy; Radicalism Threat; Information Disclosure Era

SP-1206-268

ROOM: FIB-9

15:25 – 15:35

**Strengthening Innovation Capacity of Local Government: A Case Study of Direct Seed Planting Program of Agricultural Development in Bone Regency, Indonesia**

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**Abstract** - The regional government of Bone Regency is promoting innovation in the agriculture sector. This is an effort to increase rice productivity in Bone District which is a national food barn. The reason to conduct the research because as a national food buffer in South Sulawesi, rice productivity tends to be in a stagnant position. Whereas the potential of available resources is quite adequate. Various obstacles encountered in implementing this innovation, so it needs to be explored from various aspects one of which is institutional strengthening in the structure approach and innovation of the teamwork. This study aims to explore and uncover conditions for Institutional strengthening carried out by the Regional Government of the Regency of Bone by analyzing the Structure and Innovation Team approach to find the causes of the lack of results of innovation in the direct seed planting program. This research method uses a qualitative approach with an explanatory level of analysis carried out in the local government of Bone Regency. The focus of this research includes the structure approach and innovation work team in Bone Regency considering the large number of actors involved in implementing innovation. The process of data analysis is carried out with the stages of Data Collection, Data Reduction, Data Presentation, Verification and Conclusion. The results showed that Stakeholders were identified through assignment matters that were directly related to the main strategy of direct seed planting. The head of district of Bone as the innovation leader approached the expansion of authority with the TNI (Indonesian National Army) in reacting to the absence of legislation that specifically regulates sectoral management to intervene in the implementation of the direct seed planting Innovation program. The head of district held a limited meeting through the *Tudang Sipulung*, involving Indigenous Leaders (*Pananrang*), BMKG (meteorological and geophysical agency), TNI (Indonesian national army), the Police, the relevant regional device organization as well as Farmer Groups and the community to distribute independent and autonomous authority over each actor in the innovation structure. There is a pattern of substantial division of authority to regional device organization who become stakeholders even though sometimes overlapping authority and sectoral egos in the management of innovation direct seed planting.

**Keywords:** *Institutional Strength, Innovation, Innovation Structure, Bone, Tudang Sipulung*

SP-1207-385

ROOM: FIB-09

15:35 – 15:45

**Accessibility for People with Disabilities in Sritanjung Park Banyuwangi Regency**

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**Abstract** - Banyuwangi Regency has recently begun to pay attention to green open space in the form of city parks to reach the standard green open space in the city. In 2014 the Banyuwangi district officially declared itself as an inclusive district, namely an area with public facilities equipped with accessibility standards for persons with disabilities. The city park is one of the public facilities that must implement accessibility standards because of its function as a place for recreation or leisure so it does not rule out the possibility of many people with disabilities who will use it. This study aims to determine the extent to which Sritanjung Park, which is an icon of Banyuwangi district, applies the principle of accessibility, including: safety, convenience, usefulness and independence in PU PERMEN No.30 / PRT / M / 2006 so that it can be utilized by persons with disabilities. The research method used is descriptive qualitative triangulation data collection techniques, namely interviews, observation and documentation studies. This research is evaluative in nature, which compares the condition of a park area with accessibility standards. The results showed that the park had not fully applied the accessibility standard to the elements of the park. In the park only apply the ramp as an accessibility aid at some point of circulation. For accessibility for persons with visual impairments such as guiding blocks, maps arising, direction directions using braille writing are not yet available. Meanwhile supporting facilities such as special toilets, disabled parking areas and other supporting facilities are not yet available.

**Keywords:** accessibility; persons with disabilities; Sritanjung park.

SP-1118-057

ROOM: FIB-10

13:30 – 13:40

**Building a Culture of Democracy through Youth Empowerment in the Literacy Movement (Descriptive Study in Kampung Buku Banjarmasin)**

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In enriching the quality of the human source, cultural literacy such as reading and writing is necessary. Although oftentimes, it is considered dull by the youngsters who the main actors of a future nation which hopefully become an eminent generation. Fortunately, there are yet some group of youngsters who cares about the importance of literacy and wrap it in interestingly for the youngsters, which is Kampung Buku. This research aim at describing the work of Kampung Buku to empower youth in the field of literacy information and the implication toward developing cultural democracy, especially in Banjarmasin. This research used a descriptive qualitative approach. The informants in this research are the activists of Kampung Buku, consist of initiators, administrators, and tutors, along with visitors and class participants in Kampung Buku. The result of this research showed that (1) Kampung Buku raised the participation of youngsters by conducting a literacy class which consist of philosophy class, ethnography class, writing class, and drama class whom tutors and participants came from youngsters (2) Kampung Buku has become a public sphere which accommodated the activity, discussion, and youth aspiration (3) Library in Kampung Buku became a vessel for participants to fulfill the need of information and followed by administrator who helped them understand the reading. Cultural democracy in Kampung Buku dominantly towards the action of them to give literacy space which meant to and adjusted for youth. This also supported the youth empowerment to be realized.

**Keywords:** Youth Development; Democracy Culture; Cultural Literacy.

SP-1118-058

ROOM: FIB-10

13:40 – 13:50

**Timor Leste's ASEAN Application and The Oil Curse**

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**Abstract** - Timor Leste has been waiting eagerly to become a member of ASEAN. It has lodged its application formally in 2011 during Indonesia's chairmanship. ASEAN then set up special council to assess Timor Leste readiness by three major points; the political and security, the economic and the sociocultural pillars. Those two ASEAN pillars criteria, political and security and sociocultural pillar will relatively achievable for Timor Leste since the country has shown great stability in the past few years. However, the major obstacle for Timor Leste is to meet the economic criteria of ASEAN's pillars. For the last 17 years since its independence, the youngest nation of Southeast Asia seems not able to expand its economy and therefore has been labelled as one of the most oil depended country in the world. Some scholars warn that despite Timor Leste has cautiously use its oil wealth by saving it on Petroleum Fund, its economic policy still evolve on building infrastructure to support the oil extraction industry. Not much has been done to encourage non-oil sector of the economy, such as agriculture, manufacture, or tourism. In addition, Timor Leste's decision makers' obsession in grandeur infrastructural projects has been widely criticized as white elephant project and that will only benefit few people. Hence the essay put forward the "oil curse" concept to explain Timor Leste obstacle in fulfilling ASEAN's economic pillar. It suggests that Timor Leste application to be ASEAN member must be considered cautiously. The fact that Timor Leste has not shown any positive progress towards diversifying its economy and reduce its oil dependence might lead to its state failure. This in turn will pose major challenges to ASEAN cohesiveness and hinder its objective to pursue full-fledged ASEAN community in 2020.

**Keywords:** ASEAN membership; Timor Leste's economy; Oil Curse

SP-1121-069

ROOM: FIB-10

13:50 – 14:00

**The Phenomenon of Self-Actualization of Young Volunteers at The IYALE Institute and Its Implications For Individual Resilience**

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**Abstract** - This study analyzes the phenomenon of self-actualization of young volunteers at the IYALE Institute (Indonesian Youth and Leader Empowerment) and its implications for individual resilience. Specifically, this study aims to find out how the self-development process of young volunteers at the IYALE along the factors that can support and become obstacles. Then from the phenomenon of self-actualization will have implications for the



individual resilience of young volunteers at the IYALE. This study uses qualitative methods that are processed based on observations of social phenomena and symptoms. The data sources of this study were divided into primary sources and secondary sources. Primary data sources consist of in-depth interviews with informants and direct observation in the field. While secondary data sources come from literature and documentation studies. In analyzing the data, this study uses a theory of self-actualization that is preceded by meeting basic needs in undergoing the program to become a young volunteer. The results of this study indicate that young volunteers at the IYALE have been able to meet basic needs so that the process of self-actualization goes well. Nevertheless there are several factors that hinder the process of self-actualization, although on a very small scale. Forms of self-actualization such as socializing with local communities, making joint activities with the community, and others. The process of self-actualization that is continuously being developed by young volunteers at the IYALE has implications for individual resilience. The implications are explained in the form of individual resilience values.

**Keywords:** Self-Actualization; Young Volunteers; Individual Resilience

**SP-1129-141**

**ROOM: FIB-10**

**14:00 – 14:10**

**Homecare Services Are Seen from Indicators of Good Governance in The Makassar City Dottoro'ta Case Study**

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**Abstract** - The city research is to study the implementation of the City Government through the Home Care (Dottoro'ta) service in Makassar City. The method used in this research is qualitative with case studies, this research uses observation instruments, interviews, and documentation. Then the technique of data analysis through data reduction, data presentation, and conclusion making. The results showed that the overall implementation of urban governance through Dottoro'ta Home Care services was carried out effectively based on the results of research that showed aspects of equity (equity) provided to all parties regardless of social status requiring services provided free of charge, home care Dottoro'ta has also covered all areas of the city including the islands. In the aspect of accountability (accountability) shows the use of a high budget in the home care program (Dottoro'ta, a budget on the procurement of health equipment that must be optimized for use as a program of accountability. Makassar this supports the role of IT in creating integrated centralized access, while in the aspect of community participation (civic engagement) shows what is meant by the area of care of the City of Makassar, including the islands that discuss community access to health services, it also received a positive response from the public regarding obtaining support for information dissemination on services obtained from the preparation of taking the data presented in the results of this study.

**Keywords:** Urban Governance; Urban Services; Home Care.

**SP-1129-146**

**ROOM: FIB-10**

**14:10 – 14:20**

**Gender in Governance of Coastal Areas in Indonesia: Empowering Women as an Effort to Develop Coastal Communities**

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**Abstract** - Gender based roles are often found in Indonesian coastal areas, male involvement tends to be in the realm of fishing while women are mostly found in land activities such as fish repair, processing and selling. Despite the significant contribution made by women in coastal areas, women's involvement in decision making in the management of marine resources is still minimal and results in disproportionate management of household finances and causes lack of access to finance for food, health and education and has an impact on increasing vulnerability of coastal communities. The challenges of sustainable development in coastal areas in the economic, social and ecological sectors need to place the right role of women. The absent of policies based on gender in coastal communities will decrease the household productivity. Enhancing woman's role in integrated coastal activities is vital for a better maritime resource management. Empowering woman in coastal communities is an important factor to contribute and strengthen the Coastal Community. This paper aims to analyze the gender perspective in the management of Indonesian coastal areas by using a descriptive analytical approach by explaining the factors that influence the development of coastal areas by using gender social analysis.

**Keywords:** Gender; Coastal Community; Women Empowerment

**SP-1130-159**

**ROOM: FIB-10**

**14:20 – 14:30**

**Sustainable development goals (SDGs) and poverty alleviation**

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**Abstract** - This research tries to raise the SUSTAINABLE DEVELOPMENT GOALS (SDGs) AND POVERTY ALLEVIATION case study of aisle business entities in the city of Makassar. The Makassar city government has issued a program which is called the aisle business entity intended to increase economic growth in the city of Makassar. to find out the efforts made by the government in tackling poverty that occurred in the city of Makassar. This research is qualitative with a case study approach by looking at all problems clearly and measurably. growth in favor of the poor, perfecting and expanding the scope of community-based development programs, increasing access of the poor to basic services, building and perfecting social protection systems for the poor.

**Keywords:** Makassar city government, poverty alleviation, business aisle.

SP-1206-262

ROOM: FIB-10

14:30 – 14:40

### The Securitization of Community Issues in Southeast Asia

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**Abstract** - This paper examines the community, such as Inter-ethnic, religious and other identity has been securitized in Southeast Asia. The issue could be a potential conflict that will impact to the regional instability. In order to examine the securitization, it uses a constructivism approach and securitization concept. This approach and the concept explain about the response and the action of the states, individual or collective related to that issue. Social-community issues related to identity, ethnicity and religion are the real things that become a security concert. Indonesia, Malaysia, Thailand and Myanmar have experienced cases of conflict that have experienced cases of conflict that have resulted in disputes between tribes and races, and there have also been negative specimens against religious communities. And also, some issues of identity and polarization that occurred in several countries. This certainly can cause regional stability even though at present there is no significant significance of the effect of community security on Southeast Asia. Thus, securitization of the Community issues can be seen on how the states give a perception to the issues within an interaction of social structure. Moreover, the states are seen as social actors which interacted within the context of sharing of knowledge, understanding of material resources and the practice of interaction among the states its self.

**Keywords:** Securitization; Threat; Community security; Region

SP-1207-394

ROOM: FIB-10

14:40 – 14:50

### Service Innovation Besuk Kiamat in the City of Surakarta in Order Establishing Good Governance

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**Abstract** - Public services are very important in order to improve regional competitiveness and realize good governance. The success of development is determined by the correct and appropriate policy implementation. Creating a competitive climate as the embodiment of an innovation conception is an inseparable part for the progress of an area. The development of an innovation culture is one aspect of bureaucratic culture that is crucial for the success of bureaucratic reform. The success of the Surakarta City Government in developing innovation is an attraction, even though leadership has changed. Surakarta City Government issued Surakarta Mayor Regulation No. 1 of 2018 concerning *Besuk Kiamat* Program (Condolences Send Death Certificate) which explains that *Besuk Kiamat* Program is a fast service program of issuing Death Certificate Quotations, Family Cards, and Electronic Resident Identity Cards which can be directly given to families who mourn at the delivery of condolences by the Surakarta City Government. Through the validation of population data, the Surakarta City Government made a new breakthrough, namely the issuance of a one-day death certificate. The new service, called *Besuk Kiamat* was launched by the Surakarta City Population and Civil Registry Office in collaboration with the Surakarta City Statistical and Bath Information Communication Office, Surakarta City Health Office and Village Office. The research method uses descriptive qualitative. The service program innovation is the excellence and pride of the Surakarta City Government.

**Keywords:** Public Service Innovation, *Besuk Kiamat*, Good Governance.

SP-1207-312

ROOM: FIB-10

14:50 – 15:00

### Social Entrepreneurship to Improve Community Welfare in Desa Gandusari, Blitar

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**Abstract** - The village as the smallest community of government in Indonesia has experienced a change since the enactment of the village constitution No. 6 year 2014. The economic development of the village is an effort to

allocate human and capital resources that can increase economic activities to improve the welfare of rural communities. Human resources consist of population, education and skills. Furthermore, capital consists of physical, financial and social capital. By taking place in Desa Gandusasi, Blitar, the expansion of community participation and initiative is one of the key elements in the development process. The business planning process is formulated through a gradual mechanism and a long agenda. It is carried out collectively-participatory and inclusive and strengthened by social capital to ensure the emergence of village policies that are oriented towards welfare and care for vulnerable groups such as the poor, women, children, and people with disabilities. The entrepreneurial spirit can be built from a culture of origin accompanied by efforts by the village government to affirm the community based on the authority possessed by the village. The acceleration of village development requires the existence quick and responsive regional governments to make policies in facilitating and supervising village to implement the endogenous growth paradigm.

**Keywords:** village Constitution; rural communities; community participation; social entrepreneurship; endogenous growth

**SP-1207-317**

**ROOM: FIB-10**

**15:05 – 15:15**

**Mental Health Non-Governmental Organization Strategy and Contribution in India**

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**Abstract** - INGO has played an important role in facilitating health. Global health diplomacy involves new forms of collective action and negotiations for new rules and norms in dealing with global health. In this case, mental health is a very valuable thing, so it needs to be preserved as well as possible. Awareness of the importance of mental health in India is still lacking. General health often gets more attention than specific health such as mental health. However, mental illness sufferers have been proven to increase with the lack of health programs to overcome these problems. The government began activities for mental health services starting in the 1980s by forming a National Mental Health Program (NMHP) which has several good programs and goals. But this did not work out smoothly. So gradually, INGO emerged which initially focused on general health, ultimately not only in facilitating general health, but also facilitating mental health. The large number of MHNGOs that have sprung up can overcome existing mental health problems. With collaboration and partnerships with various parties, as well as innovations developed to continue to develop and perfect quality programs and models for people in need. MHNGO has advantages that are not owned by facilities owned by the government, but also has some shortcomings that are obstacles that are owned by MHNGO.

**Keywords:** Mental health; strategy; Mental Health non-Governmental Organization.

**SP-1207-321**

**ROOM: FIB-10**

**15:15 – 15:25**

**The Emergence of Gender based De-Radicalization Policies in Indonesia**

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**Abstract** - This study aims to explain the role of women as key players in violent extremism as well as de-radicalization and countering violent extremism (CVE) policies. The method used in this research is qualitative method with data collected from books, journals, reports, and various websites. The result of this paper shows that contemporary violent extremism had seen women as influential actors. In Indonesia, not only locally but also abroad, women have become an important part of 'jihad' activities. The involvement of women in violent extremism became more visible than ever. The propaganda of extremist organization has been gender-specific, especially towards women. While other actors were debating to include women in peace and security issues, extremism groups were already included them as active players, sometimes, even as suicide attackers. The increased of involvement of women in violent extremist groups has shown implications for peace building and re-integration. In response to new trends, gender-responsive strategies to de-radicalize and counter violent extremism need to be addressed. This study explores how both state and non-state actors can promote gender-responsive strategies to counter violent extremism. This paper also describes CVE programs implemented by government of Indonesia and civil society initiatives. The emergence of CVE agenda has been closely related to several instruments with its own achievement and challenges.

**Keywords:** De-radicalization, Countering Violent Extremism (CVE), Women, Indonesia

**SP-1207-349**

**ROOM: FIB-10**

**15:25 – 15:35**

**Digital Social Capital Analysis on Collective Action in Waste Management**

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**Abstract** - Waste management initiative today in Indonesia creates unsustainable sporadic action in managing waste issues. Previous research shows that habits to litter and not managing waste properly are growing from home and scrolling to society as snow balls. *Gotong Royong* as social efforts to manage waste in Indonesia may turn to be an alternative in producing more holistic approach to tackle waste problems. Boosting the information and leverage the social action to get the benefit of waste segregation, waste management and recycling process through social media and cultural intervention tend to lead social participation among stakeholders to demonstrate cooperation in handling unstoppable waste issues. This study attempts to analyze the social capital dimension on the collective action in waste management through waste 4-change program by using digital model despite the offline platform. Digital social capital dimension develops connectivity upon stakeholders on the initiative. A qualitative method with digital ethnographic method will be analyzed using the Taxonomy Analysis method from data collected across online and offline interview. The digital and offline platform by using the supply chain of household products helps and stimulates society to segregate, creating less-waste and support recycling process. Digital social capital platform identification is required to supports the offline social capital dimension to boost the sustainability of waste 4-change initiative.

**Keywords:** Digital Social Capital; Waste Management; Collective Action

**SP-1207-380**

**ROOM: FIB-10**

**15:35 - 15:45**

### **The Role of Non-State Actor Building Human Security in South Sudan Civil War**

<sup>1</sup>Erti Fadhilah Putri, <sup>2</sup>Maryanti, <sup>3</sup>I Gede Sumerta K. Y.

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**Abstract** - This paper will analyze the problem of the role of Non-State Actors in the development of Human Security in the South Sudan Civil War. This analysis uses a post-qualitative method with a neoliberalism approach that focuses on the concept of the role of non-state actors and human security. The role of Non-State Actors such as IGO (intergovernmental organizations), NGOs (Non-Government Organizations), MNC (Multinational Cooperation) and CSO (Civil Society Organizations) is expected to bring about changes in Human Security. Currently there is an increase in the role of non-state actors in the role of humanitarian response in the international world. Nevertheless, there are several obstacles faced by non-state actors in overcoming humanitarian problems, especially human security. This is faced by non-state actors so that it cannot create human security. This problem that happened in the South Sudan civil war where many roles of non-state actors overlapped in humanitarian missions so that the building of human security was inefficient. The findings in this study are in the case of civil war in South Sudan, there are several non-state cluster actors who play a role in building human security, especially in the field of food security and health.

**Keywords:** Non-state Actor, Human Security, Civil War, South Sudan

## Poster Session Abstracts

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**MH-1110-012** **WIDYALOKA** **13:00 – 13:30**


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**The Effect of Amlodipine to MAP2 on Neurons Culture SH-SY5Y that induced by Chronic Hyperglycemia**<sup>1</sup>Shahdevi N. K.\*, <sup>2</sup>Pratama F. A., <sup>3</sup>Masruroh R., <sup>4</sup>Dessika R.<sup>1</sup>Neurology Department, Medical Faculty of Brawijaya University, Malang, Indonesia<sup>1</sup>shahdevinandar@yahoo.com\*; <sup>2</sup>farhanadi179@gmail.com; <sup>3</sup>masrurohrahayu@yahoo.com; <sup>4</sup>dessika\_dr@yahoo.com

**Abstract - Introduction:** Exposure to chronic hyperglycaemia in neurons results in increased Ca<sup>2+</sup> intracellular then causes increased oxidative stress. Oxidative stress will increase the activity of calcium activated neural protease causing MAP2 (Microtubule Associated Protein 2) to decrease which will increase the cell death. **Aim:** The aim of research is to determine on the effects of amlodipine on the expression of MAP2 in SH-SY5Y neuron culture cells. **Methods:** This research is an experimental study, using SH-SY5Y neuron cell culture and then exposed to hyperglycaemia for 6 days, then given amlodipine 10nm and 100nm. Then the MAP2 expression is seen. **Results:** Based on the results of the Anova test on the administration of 10 nM, 100 nM and without amlodipine on the expression of MAP2 in culture of SH-SY5 neurons, which were 50 mM glucose for 6 days there was decrease in MAP2 ( $p = 0.082$ ). Based on Spearman correlation test results, there was a strong relationship ( $p = 0.011$ ) ( $r = -0.7791$ ). **Conclusion:** There is decrease expression of the MAP2 after the administration of the dose of amlodipine 10 nM, 100 nM and without administration although not significant. It is estimated that another line activation occurs. One such pathway is the activation NMDA receptor will inhibit potential post synapse and increase calpain activation to cause a decrease in MAP2.

**Keywords:** MAP2; Amlodipine; Culture; SH-SY5Y; Neuron.

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**CE-1113-019** **WIDYALOKA** **13:00 – 13:30**


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**Feasibility of Android-Based IPA Concept Learning Devices to Improve Students' 21<sup>st</sup> Century Skills**<sup>1</sup>Heny Sulistyningrum, <sup>2</sup>Anggun Winata, <sup>3</sup>Sri Cacik<sup>1,2,3</sup> Universitas PGRI Ronggolawe Tuban<sup>1</sup>henysulistyningrum.65@gmail.com; <sup>2</sup>anggunwinata@gmail.com; <sup>3</sup>srivicacikmpd@gmail.com

**Abstract -** Initial research has been carried out on PGSD students who show the results of 21<sup>st</sup> century skills are still low. This study aims to develop pistils that are filled in and improve the ability of 21<sup>st</sup> century student skills. Design research development of learning tools to improve the ability of 21<sup>st</sup> Century students' skills using the Four-D model which includes the steps: defining, designing, developing, and disseminating. Product validation is done to get the feasibility of the product that has been developed. The instrument used in the validation stage is a validation sheet that contains four aspects of assessment, namely (1) content validation; (2) construct validation; (3) RPP validation; (4) textbook validation; (5) MFI validation; (6) lecturer book validation; and (7) validation of evaluation tools. The assessment process uses a validation sheet carried out by six expert lecturers, namely three lecturers who assess the content of the material, two lecturers who assess media and learning, and one lecturer who assesses language. The validation step is done before the simulation and experiment 1. The validation results show that all aspects of the assessment have good validity criteria. Based on the results of the validation it can be concluded that the Android-based science concept learning device to improve the ability of 21st century student skills is feasible to use by making improvements in accordance with the validator's suggestion.

**Keywords:** 21<sup>st</sup> century skills; android, learning devices

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**AST-1114-026** **WIDYALOKA** **13:00 – 13:30**


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**Lodging Detection based on K-means Clustering with Normalization Data using Low-Altitude UAV Images**<sup>1</sup>Muhammad Jainal Arifin, <sup>2</sup>Achmad Basuki, <sup>3</sup>Bima Sena Bayu Dewantara<sup>1,2,3</sup> Politeknik Elektronika Negeri Surabaya, Surabaya<sup>1</sup>jainal.ariief31@gmail.com; <sup>2</sup>basuki@pens.ac.id; <sup>3</sup>bima@pens.ac.id

**Abstract -** Lodging is when the stem of the plant is weakened and can't ride the weight of the seeds so that the rice falls, the factors that affect the occurrence of the lodging include varieties, methods of planting, nitrogen rate, density of planting, water depth, or factors of nature or weather. Lodging on rice plants will affect the decline in the potential harvest yield amounting to approximately 10% of the total harvest. From this problem, so it takes a method or media that can detect the lodging or the condition of rice to the harvest. In this study used remote sensing (UAV) from a drone, because it promises to detect rice damage with a wide range, and the drone height of each shot is 20 meters with the resulting image pixel size of 4000 x 3000. In the processing of images used color parameters are converted from RGB to HSV and filter Gabor textures as an image extraction feature. Then K-means method as a method of classifying or labeling based on the combination of color and texture. To get the best results used comparisons of several experiments of data normalization methods, among them are *min-max*, *standard*, and *zscore*. The approximate result of the best rice damage detection is to use *min-max* data normalization method with  $RMSE = 0.41$  and  $Silhouette = 0.56$ . These results indicate that detection of rice damage using remote sensing from drone and image processing has the potential to be accurate and fast.

**Keywords:** precision agriculture, remote sensing, lodging percentage and severity, normalization data, clustering

MH-1115-034

WIDYALOKA

13:00 – 13:30

### The Role of Pulmonary Rehabilitation in Pulmonary Tuberculosis and Pneumothorax on Functional Activity: A Case Report

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**Abstract** - Exertional dyspnea is among the most frequently experienced symptoms of pulmonary disease and leads to physical disability and functional impairment. Secondary pneumothorax is one of pulmonary tuberculosis (TB) complication and also life threatening. Pulmonary rehabilitation is proven effective for decreasing exertional dyspnea and improving functional activity. The goal of pulmonary rehabilitation (PR) is to improve the inspiration capacity. A 24-years-old female with pulmonary tuberculosis on OAT and left pneumothorax with shortness of breath (SOB). At the first visit she came with bedridden (METS 1), pulmonary function, exertional dyspnea with Borg Scale (9), chest expansion 1 cm, count breathlessness test 17 s, SpO<sub>2</sub> 95%, BI 30. The pulmonary rehabilitation programs were deep breathing, chest expansion exercise and cardiorespiratory endurance training using ergo cycle. After 1 week got pulmonary rehabilitation program there were improvement of SOB, Borg Scale, chest expansion, count breathlessness test, and Barthel index. Patient came to hospital with wheelchair and standing with parallel bar (METS 1,2). The Borg Scale was improved to 8, chest expansion was improved to 1,2 cm, count breathlessness test was improved to 20 s. After 3-week, patient was undergo 6-MWT (120 m, METS 2,76) with Borg Scale 7, chest expansion 2 cm, and count breathlessness test was 23 s, and BI 85. Pulmonary rehabilitation programs are great to improve respiratory function & functional activity, even in the condition of patients with pneumothorax that have not improved in outpatient with SOB dt. Pulmonary Tuberculosis and Pneumothorax.

**Keywords:** pulmonary rehabilitation, lung tuberculosis, pneumothorax

MH-1115-035

WIDYALOKA

13:00 – 13:30

### The Role of Rehabilitation Program in Functional Recovery of Stroke: A Case Report

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**Abstract** - Stroke is a leading cause of functional disorder and severe disability in the world. Stroke prevalence in Indonesia according to national health research (RISKESDAS) in 2007 were 0,8%, meanwhile in United State of America were 1,8-2,2%. Rehabilitation program had an important role in functional recovery of stroke patient. The purpose of rehabilitation program is to achieve functional independency, minimize disability, re-integration to home, family, and community lifes. We report a case of 48 years old male with Left hemiparesis due to Cerebrovascular accident intracranial hemorrhage. The outpatient rehabilitation program was neuromuscular electrical stimulation for left upper and lower extremity with in frequency 70-85 pps, on-time 10-15 seconds, off-time 50 seconds – 2 minutes, duration minimum 10 contraction, 3 times per week, active range of motion and isotonic strengthening exercise for upper and lower extremity, sitting balance exercise, bridging exercise, gait training, breathing exercise, cognitive therapy. Initial assessments were Glasgow Coma Scale (GCS) 3/4, Manual Muscle Testing (MMT) 3 for left upper and lower extremity, Count Breathlessness Test (CBT) 10, Mini-Mental State Examination (MMSE) 22, Barthel Index (BI) 10. After 2 months of treatment the assessment was GCS 4/5, MMT 4 for left upper and lower extremity, CBT 21, MMSE 30, BI 95. The rehabilitation program was proved to be beneficial in improving functional recovery of stroke patient.

**Keywords:** stroke; rehabilitation; electrical stimulation; exercise; functional recovery

LW-1115-047

WIDYALOKA

13:00 – 13:30

### Prinsip Iknemook Bagi Mediator Dalam Penyelesaian Sengketa Malpraktik Medik Melalui Mediasi

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**Abstrak** - Hubungan hukum dokter-pasien terbentuk karena kesepakatan. Kesepakatan dalam upaya penyembuhan suatu penyakit yang melahirkan suatu perjanjian terapeutik yang bersumber dari Undang-undang sebagaimana yang termuat dalam rumusan Pasal 1233 Kitab Undang-Undang Hukum Perdata. Setiap hubungan hukum akan melahirkan hak dan kewajiban, hak bagi dokter merupakan kewajiban bagi pasien dan sebaliknya hak pasien merupakan kewajiban bagi dokter, tidak terpenuhinya hak salah satu pihak, maka dapat menimbulkan sebuah sengketa hukum. Malpraktik medik lebih banyak disebabkan karena tidak terpenuhinya hak dasar pasien karena kurang komunikasi atau informasi yang sebenarnya adalah hak pasien untuk mendapatkannya. Upaya

penyelesaian sengketa melalui peradilan umum yang selama ini ditempuh tidak dapat memuaskan pihak pasien maupun dokter. Sehingga penyelesaian sengketa malpraktik medik yang paling dianggap ideal adalah melalui proses non litigasi yaitu mediasi agar tujuan win-win solution bisa dicapai. Prosedur mediator dalam melakukan mediasi dalam penyelesaian sengketa malpraktik medik berpegang teguh pada 7 (tujuh) prinsip yang disebut juga 7 (tujuh) dasar filsafat mediasi sengketa medik yang dikenal dengan istilah prinsip Iknemook. Permasalahan dalam penelitian ini adalah apa saja yang menjadi prinsip Iknemook bagi mediator dalam penyelesaian sengketa malpraktik medik melalui mediasi. Tujuan penelitian ini adalah untuk mengkaji dan mengetahui 7 (tujuh) prinsip Iknemook bagi mediator dalam penyelesaian sengketa malpraktik medik. Jenis penelitian ini dikategorikan sebagai penelitian kepustakaan (*library research*) dengan spesifikasi penelitian deskriptif yang penulis berusaha menjelaskan mengenai prinsip Iknemook bagi mediator dalam penyelesaian sengketa malpraktik medik melalui mediasi. Dari penelitian ini diperoleh hasil bahwa yang menjadi prinsip dasar mediator dalam penyelesaian sengketa malpraktik medik disebut dengan prinsip Iknemook yang terdiri dari: prinsip itikad baik para pihak, prinsip kepercayaan, prinsip netralitas, prinsip eksklusif mediator (*med-power*), prinsip open mind, prinsip otonomi prinsipiell, dan prinsip kerahasiaan.

**Kata kunci:** Prinsip Iknemook, Sengketa Malpraktik Medik, Mediasi Malpraktik Medik

MH-1116-051

WIDYALOKA

13:00 – 13:30

### Effectivity PRP Using USG Guided Method in Morbus Hansen With Polyneuropathy: A Serial Case

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**Abstract - Background:** Morbus Hansen mainly attacks the peripheral nervous system and Schwann cells are host to Mycobacterium leprae. The sensory component is the earliest nerve affected and most severely affected. Conservative management of Morbus Hansen with neuropathy is often not satisfying. Platelet Rich Plasma (PRP) is an innovative and promising approach in tissue regeneration. **Objective:** To report the effectivity of the treatment of perineural autologous PRP injection using the ultrasound-guided method as choice of therapy in morbus Hansen with neuropathy. **Method:** This serial case involved three Morbus Hansen patients with polyneuropathy, which one patient was treated with conservatives' therapy. While two patients were treated with PRP injection using ultrasound-guided. All three patients were evaluated for 4 weeks using electromyography (EMG) and 2-point discrimination examination. **Result:** These three patients were then evaluated, in the first patient was no clinical improvement (before and after conservative therapy, the EMG results still showed moderate axonal demyelinating motoric sensoric polyneuropathy and patients also still felt plantar type hypesthesia until dorsum pedis bilateral). While the second and third patients showed clinical improvement in sensory palms and feet with a two-point discrimination examination, and EMG results before injection showed moderate axonal demyelinating motoric sensoric polyneuropathy and after injection showed mild axonal demyelinating motoric sensoric polyneuropathy. **Conclusion:** The treatment of perineural injection of autologous platelet rich plasma by ultrasonography-guided method in multibacillary morbus hansen patients can improve sensory peripheral neuropathy.

**Keywords:** Polyneuropathy; Morbus Hansen; Perineural; USG; PRP.

MH-1116-052

WIDYALOKA

13:00 – 13:30

### Histoid-Type Leprosy Polyneuropathy: A Case Report

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**Abstract - Background:** Leprosy (Hansen Disease) is a chronic granulomatous disease in the peripheral nerve and cutaneous caused by the bacterium Mycobacterium leprae and Mycobacterium lepromatosis. Histoid-type leprosy is a clinical expression of multibacillary leprosy (MB) characterized by the occurrence of cutaneous and subcutaneous nodules and plaques with distinctive histopathological features. Histoid-type is estimated to be 2.79-3.60% among all of leprosy patients. The prevalence of leprosy in East Java in 2015 was 1.02 per 10,000 population, and there was still limited data to describe histoid-type. **Case Report:** A male, 55 years old, with complaints of numbness of both feet and presence of multiple nodules on whole body. Regarding physical examination, we found thickening of left Tibial nerve. Electrophysiologic examination described sensory and motor demyelination of right and left Tibial and Peroneus nerve. The patient was diagnosed with Histoid-type Leprosy (Hansen Disease) polyneuropathy. She had been treated by Rifampicin, Ofloxacin, and Minocycline for causative treatment of Leprosy, and also Amitriptyline for neuropathy. **Conclusion:** The proper diagnostic and prompt treatment had been performed, but the outcome after 1 year of treatment still had not shown significant neurologic improvement yet.

**Keywords:** Polyneuropathy; Leprosy; Hansen Disease; Histoid-type.

MH-1116-053

WIDYALOKA

13:00 – 13:30

**Effect of High Dose Amlodipine to Nrf2 Protein on SH-SY5Y Cell Culture That Induced with Glucose 50 mM**<sup>1</sup>Shahdevi N. K.\*, <sup>2</sup>Muhyiddin A. A. A.<sup>1,2</sup>Neurology Department, Medical Faculty of Brawijaya University, Malang, Indonesia<sup>1</sup>shahdevinandar@yahoo.com\*; <sup>2</sup>afrizal.alif.am@gmail.com

**Abstract - Introduction:** Diabetes Mellitus is a chronic metabolic disease characteristic by the presence of chronic hyperglycemia that glucose levels > 200 mg/dL. Protein Nrf2 is a transcription factor protein for antioxidant genes that serves to capture Reactive Oxygen Species (ROS) which increases in the condition of diabetes mellitus. **Aim:** To investigate the effect of the administration of amlodipine on protein expression of Nrf2 in SH-SY5Y neuron cell culture that induced by glucose 50 mM. **Methods:** This research were used the method of pure experimental analysis in the laboratory used cell cultures of the SH-SY5Y neurons. Cell culture SH-SY5Y neurons were induced with glucose 50 mM for 6 days. Then administered amlodipine with a dose of 5 Mm for 30 minutes. Then expression of Nrf2 proteins observed with immunofluorescence. Independent T-Test and Pearson Statistical analyses were conducted to determine the influence and relationship of a 5 µM amlodipine on protein expression Nrf2. **Results:** In the group of administering Amlodipine 5 Mm and without amlodipine on the cell culture of the SH-SY5Y neurons that induced of chronic hyperglycemia (glucose 50 mM) result of independent T-Test obtained that there is no meaningful difference (P = 0.464). Pearson correlation test result in get a correlation coefficient value of 0.223. **Conclusion:** There is an increased expression of the protein Nrf2 after the administration of the dose of amlodipine 5 µM although not significant.

**Keywords:** Nrf2; Amlodipine; SH-SY5Y; Neuron; Glucose.

AST-1123-079

WIDYALOKA

13:00 – 13:30

**Food Insufficiency Exists in Dryland Agricultural Communities: An Impact of Climate Change**<sup>1</sup>Priyaji Agung Pambudi\*, <sup>2</sup>Suyud Warno Utomo<sup>1,2</sup>School of Environmental Science, University of Indonesia<sup>1</sup>Indonesia Expert Network for Climate Change and Forestry<sup>2</sup>Department of Environmental Health, Faculty of Public Health, University of Indonesia<sup>1</sup>priyajiagungpambudi@gmail.com\*; <sup>2</sup>suyudwarno@gmail.com

**Abstract -** Food becoming challenges to be realized in line the rapid population and land conversion. Moreover, dryland farmers are also facing problems of rice production in climate anomalies condition. The average rice needs of Indonesian people is 114/kg/year. Related to these conditions, the concept of food security is needed to supply the communities need. This study aimed to analyze the climate anomalies concerning the production of dryland rice and rice fulfillment of communities. The study was conducted in July 2018 - June 2019 in Pacitan Regency, East Java by mixed-method (observation, interviews, and literature review). The dryland only be planted twice (rice and *palawija*). Whereas in previous years it be planted as many as three times a year. However, the climate anomalies that result in the prolonged dry season, then the pattern shifts and planted twice a year. Dryland rice productivity in this area is 3.95 tons/ha and was higher than the national average production 3,27 tons/ha. Mostly in September the rice-planting time, when it is planted in November. The majority of respondents consume rice as much as 127,75 kg/year with an average family numbers of 4 people. Land owners by the majority of farmers amounted to 800 m<sup>2</sup>/households and average net production of 158 kg. That is the household rice production is only able needs for 226 days (61,9%), so the 139 days must switch another staple food or buy rice. Some respondents said that their families consume *gapek* (cassava) because it can be produced by their household.

**Keywords:** climate change, dryland, food consumption, food security, rice production

MH-1124-081

WIDYALOKA

13:00 – 13:30

**The Effect of 5 µM Dosage of Amlodipine on Nrf2 Expression in Neuron Culture Induced by 25 mM of Glucose**<sup>1</sup>Shahdevi NK, <sup>2</sup>Nasution MTRR, <sup>3</sup>Machlusil H, <sup>4</sup>Masruroh R<sup>1,2,3,4</sup>Neurology Department, Medical Faculty of Brawijaya University, Malang, Indonesia<sup>1</sup>shahdevinandar@yahoo.com, <sup>2</sup>taufik.nst18@gmail.com, <sup>3</sup>machlusilhusna@yahoo.com, <sup>4</sup>masrurohrahayu@yahoo.com

**Abstract - Introduction:** Hyperglycemia on neuron cell culture occurs when the cells are induced by 25 mM of glucose. Hyperglycemia state will increase intracellular Ca<sup>2+</sup> that leads to increase of oxidative stress in the cell. This causes the activation of antioxidant enzymes by Nrf2 protein. Amlodipine act on nerve cells through bounding with L-Type Calcium Channel (LTCC). 5 µM of amlodipine has neuroprotective effect on cell culture of neuron by inhibiting cell death. **Aim:** The purpose of this research is to know the effect of treating amlodipine dose 5 µM towards expression of the protein Nrf2 in SH-SY5Y cell culture induced by 25 mM glucose. **Methods:** In this research on neuron cell culture induced 25 mM glucose within 6 days and treated with amlodipine and without amlodipine 5 µM. **Results:** Based on research results obtained test results independent t test (p = 0,324) that there is no change of the Nrf2 expression significant between a given neuron cell culture with amlodipine without amlodipine. Spearman correlation test showed (r = 0.290; p = 0.361) that treating by amlodipine 5 µM not



significantly increasing Nrf2 expression. **Conclusion:** Based on this study it can be concluded that treating by amlodipine 5  $\mu$ M not give effect against Nrf2 expression on neuron cell culture induced 25 mM glucose.

**Keywords:** Amlodipine; diabetic neuropathy; Nrf2; SH-SY5Y.

MH-1127-104

WIDYALOKA

13:00 – 13:30

### Relation Between Distances, Malodor Perceptions and Respiratory Problems in Cipayung Landfill

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**Abstract** - The waste which enters Cipayung landfill is 800 tons/day and the height of the waste heap reaches 30 meters. This study aims to investigate the perceptions of people living near the landfill regarding respiratory problems and malodor complaints which come from the landfill and to identify the relationship between home distance from landfill with malodor complaints and respiratory problems. This research uses primary data using a questionnaire consisting of 3 parts, including general characteristics of respondents, malodor perceptions, and respiratory problems. The sample is 100 people who live in Hamlet 07, Cipayung Urban Village. All respondents (100%) smell foul of the landfill, with the majority saying that the smell disturbs daily activities (70%) and causes unhealthy effects (75%). Majority of respondents (81%) had suffered respiratory problems during living near the landfill. And the most frequent symptom of respiratory problems in the last 2 weeks was coughing (25%). There are significancies of relation between distances and malodor perceptions (p-value 0.015), and relation between distances and respiratory problems (0.038) If malodor coming from the Cipayung landfill left untreated it will have more serious long-term effects. So, it needs amelioration of processing system and other efforts by the stakeholders in order to decrease the risk of health and environment problems caused by H2S from Cipayung Landfill.

**Keywords:** Community perception; Malodor; Respiratory problems; Hydrogen Sulfide

CE-1129-152

WIDYALOKA

13:00 – 13:30

### ICT Knowledge of Biology Teachers in Senior High School

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**Abstract** – The importance of ICT knowledge by biology teachers in order to integrate learning activities in the 21<sup>st</sup> century, the fact is that although the availability of ICT tools for education is increasing, it is not directly proportional to its use in learning activities. This study aims to determine the level of ICT knowledge of biology teachers in senior high school. Teachers knowledge is measured using a multiple-choice test instrument with digestive system material. Aspects of ICT knowledge include are ICT-based learning media, ICT-based learning resources, and the using of LMS. Every aspect of ICT knowledge measured includes conceptual knowledge, factual knowledge, and procedural knowledge. Research respondents were 18 biology teachers in senior high school. The validity and reliability test of the instrument was carried out using SPSS with Alpha Cronbach 0.911 (very reliable). Data analysis of the ICT knowledge level of teachers uses Microsoft Excel and to see a descriptive analysis of ICT knowledge using the One-Way ANOVA test from SPSS. The results showed the level of ICT knowledge of biology teachers from all three aspects gained a good category with an average of 73.8. In conclusion, to implement ICT-based learning that is questioned the teachers first has knowledge of ICT-based learning, ICT-based learning resources, and to learn more about the use of LMS (Learning Management System) to encourage independent and interactive learning. The implementation ICT based learning, of course the teacher must have basic knowledge about ICT itself and knowledge of the use of ICT in learning that consists of factual knowledge, conceptual knowledge, and procedural knowledge.

**Keywords:** ICT knowledge; Biology teacher; Senior High School.

EV-1201-183

WIDYALOKA

13:00 – 13:30

### Identification of Pathogenic Bacteria in Aquaculture Commodities Affected by Floods near the Solo River

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**Abstract** - Flooding is a problem that often occurs in Indonesia. Flooding can be in the form of inundation on land that is usually dry, such as agricultural land, settlements, city centers. Flooding can also occur because the flow of water flowing in a river or drainage channel exceeds or is above its drainage capacity. One of the regions of Indonesia that experienced severe flooding was Java. The cause of the flood is usually heavy rains, broken levees, and overflowing water. Flooding, besides carrying rubbish, also carries outbreaks of diseases that harm the environment, human activities, and also commodities cultivated in the area, one of which is agricultural land and

ponds near Watersheds. Outbreaks of congenital flooding diseases will certainly have an impact on the quality of the yields obtained, so it is necessary to collect data to anticipate its vulnerability to disease. This research was conducted with the aim of analyzing the innate potential of flooding on the quality of aquaculture commodities cultivated near watersheds. This research was carried out sampling in November in Babaksari Village (near DAS), and Sambogunung Village (as a control area), then conducted isolation and identification in the Microbiology Laboratory, Faculty of Mathematics and Natural Sciences, Brawijaya University Malang. For identification in fish, the target organ examined is the kidney, while for the environment it is taken from water samples. Bacteria were grown on TSA media and then isolated. Gram staining, motility, aerobics, catalase, oxidase, O / F, glucose and Rimler shots were tested for *A. hydrophila*. Based on these test results, bacterial identification was carried out using the book Manual for the Identification of Medical Bacteria (Cowan, 1974). This research is expected to provide information related to the types of diseases that threaten the success of fish farming near watersheds, as well as the impact on the growth of cultivated fish commodities.

**Keywords:** flood, watershed; commodity; congenital diseases; fish ponds.

MH-1202-199

WIDYALOKA

13:00 – 13:30

### Serial Case Report: Primary Central Nervous System Lymphoma in Immunocompetent Patients

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**Abstract - Introduction:** Primary central nervous system lymphomas (PCNSL) are rare tumors of the central nervous system (CNS), comprising 0.8% to 6.6% of all primary CNS tumors. PCNSL can develop in immunosuppressed (ex: HIV/AIDS) or immunocompetent patients. Unlike other brain tumors, it often has a favorable response to both chemotherapy and radiation therapy, but compared with lymphomas outside the CNS, survival is usually inferior. **Case Report:** We Report 3 immunocompetent patients, 2 females and 1 male, diagnosed with Primary central nervous system Lymphoma. The median age of the cases with PCNSL was 50 years. All patients presented initially with features of intracranial mass lesion. Pre-operative clinico-radiological diagnosis of gliomas or metastasis was suspected. However, after surgical resection, non-Hodgkin's lymphoma was confirmed by histopathology and subsequent immuno-histochemistry. All patient was treated with chemotherapy methotrexate via intrathecal. **Conclusion:** Patient completed chemotherapy regiment, but 1 patient did not survive.

**Keywords:** CNS; Lymphoma; Immunocompetent; Chemotherapy; PCNSL

MH-1204-219

WIDYALOKA

13:00 – 13:30

### The Role of Bidara Leaf Extract (*Ziziphus mauritiana*) On the Prevention of Renal Hypertension in Rats Strain Wistar

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**Abstract - Background:** Hypertension is an increase in blood pressure above normal which has a fourth prevalence in the world. Glomerulosclerosis is the initial lesion from kidney failure in patient with hypertension. *Bidara* leaves have active biochemicals contains saponins, tannins, alkaloids, and phenolic compounds are thought to prevent an increase in blood pressure and repair the structure of glomerulus that undergo sclerosis. **Objective:** Find out the effect of *bidara* leaves extract towards glomerulosclerosis and the most beneficial dose of *bidara* leaf extract on glomerulosclerosis in white rat strain wistar hypertension model. **Methods:** True experimental research with Post Test Control Group Design as an approachment. The sample used was male white rats strain wistar. Rats divided into 5 groups and were being observed in 28 days. Rat kidneys were taken, stained with masson trichrome staining and the glomerulus observed randomly with light microscope in 5 different field of view with 400x magnification. Glomerulus that undergo sclerosis were given scoring and Sclerosis Index (SI) determined in semiquantitative. **Results:** Research found in the General Linear Model test obtained  $p = <0.05$  which shows that there were significant differences between treatment groups. In the linear regression test had  $R^2 = 0,332$  for systolic blood pressure and  $R^2 = 0,609$  which showed every 1 mg/KBB extracts doses reduced systolic blood pressure by 0,63 mmHg and diastole by 0,08 mmHg. In this research, we found that the group who has the highest SI was negative control (369,69). Positive control and multilevel dose group show lower SI which the lowest SI (84,09) was in treatment 2 group with *bidara* leaves extract dose 400mg/kg/day. This refinement of SI caused by *bidara* leaves extract have compound that act as antioxidant, anti-inflammatory, and anti-hypertension. **Conclusion:** Bidara leaves extract have a significant effect on reduce hypertension and sclerosis index reduction on glomerulus and it has been found that *bidara* leaves extract dose that give the most effect on glomerulosclerosis is in 400mg/kg/day.

**Keyword:** Hypertension; Glomerulosclerosis; *bidara* leaves

BT-1205-240

WIDYALOKA

13:00 – 13:30

### Reduction of TNFR2 Expression in Vascular Endothelial Brain Tissue in Mice Models of Cerebral Malaria After Hyperbaric Oxygen Exposure

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**Abstract** - Tumour Necrosis Factor Receptor 2/ TNFR2 is a main receptor of TNF alpha expressed by brain endothelial cells and contributes to Nuclear Factor Kappa Beta/ NFκB activation which induces sequestration of leucocyte cells increases. The role of hyperbaric oxygen/HBO as a regulator of the inflammatory process can be used as a supportive therapeutic approach in cerebral malaria infection. The purpose of this study was to analyze the effect of HBO administration on TNFR-2 expression in brain endothelial cells of mice infected with *P. berghei* ANKA. C57BL / 6 mice infected with *P. berghei* ANKA / PbA and divided into 3 groups with 13 mice per group: G1 (negative control, normal mice); G2 (positive control; mice infected with PbA without HBO); G3 (treatment group; mice infected with PbA with HBO). Observation of TNFR2 expression using immunohistochemical techniques on the last day of treatment. The results of the study analysis showed that there was a significant decrease in TNFR2 expression in brain vascular endothelial cells in the group that received HBO (p <0.05). Exposure to HBO 2.4 ATA for 10 sessions can prevent cerebral malaria by decreasing TNFR2 expression in vascular endothelial cells of the brain of the mice model.

**Keywords:** C57BL/6 mice; Plasmodium berghei ANKA; Cerebral Malaria; TNFR2; HBO.

ABES-1205-245

WIDYALOKA

13:00 – 13:30

### Data Panel Regression Estimation Modelling Using Common Effect Model (Case Study of Economic Growth in Central Java Province)

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**Abstract** - Data panel regression is different with the ordinary regression, the data panel itself is a combined between cross-section data and time series. Data panel regression has three models and the difference in those models are in the constant, in the common effect model's constant was not affected by time series nor the cross section. For fixed effect model the constant can be affected by time series, but for random effect model the constant can be affected by cross section, time series, and the mix between cross section and time series. The objective from this research is finding the best model from three models by using data panel regression methods, for that purpose the researchers using published data from Badan Pusat Statistika central java about gross regional domestic product, human development index, poverty population, inflation level, and total population from 35 district/city in central java. Beside finding the best fit modelling economic growth in central java, the researcher objective also to find out correlation between gross regional domestic product, human development index, poverty population, inflation level, and total population with the economic growth in central java. It can be concluded that common effect model is the best fit model with the R-square around 3.05%, and turn out that total population affected the economic growth in central java.

**Keywords:** Economic Growth; Common Effect Model; Data Panel Regression; Economic Growth Modelling

MH-1206-253

WIDYALOKA

13:00 – 13:30

### Tumefactive Multiple Sclerosis Mimicking Brain Tumors: Case Report

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**Abstract** - Introduction: Multiple sclerosis is an immune mediated disease that attacks the myelinated axons in the central nervous system in the form of myelin and axon damage in degrees which varies. Tumevactive multiple sclerosis is a rare variant of multiple sclerosis. Patients with multiple sclerosis can experience various clinical findings, and these findings can change from one examination to the next. Case Report: Women, 36 years old, present with the main complaint of right-sided headache since 2 weeks of SMRS and have been getting worse since 5 days of SMRS, such as being stabbed, appearing mainly in morning. The patient also complained of a weak left half body also obtained dysarthria, facial weakness and double vision. A similar history has occurred in 2011, 2014 and 2016, including complaints completely gone. A history of missing seizures arose since September 2014 and patients received depakote therapy 3x250 mg. Physical examination revealed edema papillary in both eyes, right N. VI paresis, UMN left N.VII and XII type, left inferior extremity weakness, and positive left Babinski pathological reflexes. MRI of the head with and without contrast shows Multiple Intraaxial Lesions suggesting multiple

sclerosis. On brain biopsy showed no tumor cells and suggests an inflammatory process. Tumor markers with results within normal limits. In the case of high-dose intravenous methylprednisolone therapy followed by oral prednisone tapering showed significant clinical improvement. Conclusion: This case shows tumefactive multiple sclerosis which can mimic brain tumors. Efforts in establishing diagnostics in the form of findings and clinical history as well as supporting examinations play an important role, so that proper management and a better prognosis can be given.

**Keywords:** Multiple sclerosis; brain tumors; methylprednisolone.

MH-1206-267

WIDYALOKA

13:00 - 13:30

### Standard Evaluation of Health Promotion Hospital at Regional General Hospital dr. Soekardjo Tasikmalaya

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**Abstract** - Health promotion in hospital is an important aspect in assessing the commitment of hospital accreditation (KARS). The aim of this research is to analyze the implementation of health promotion in RSUD dr. Soekardjo based on regulation from the ministry of health number 44 focusing on health promotion in hospitals. This is a qualitative research using descriptive observational. The Research took place in dr. Soekardjo, a Government Public Hospital. The Information was gathered by in-depth Interviewed with PKRS Chief, Head Installation of PKRS and vice director of Health Service and Health Promotion Hospital Data from Dr Soekardjo Hospital and using triangulation data for validation. RSUD dr. Soekardjo has specific staff for implementation on Health Promotion in Hospital. Health Promotion in Hospital has its own unit and staff, but lack enough number of staff and competency as per standard. Health Workers in this hospital already implemented health promotion. The Implemented Health Promotion in RSUD dr. Soekardjo corresponds to Permenkes nomor 44 tahun 2018.

**Keywords:** Health Promotion in Hospital; PKRS; RSUD dr. Soekardjo

MH-1206-273

WIDYALOKA

13:00 - 13:30

### Vitamin D and Its Correlation with Disease Activity in Juvenile Idiopathic Arthritis Patients

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**Abstract** - Vitamin D has been shown to have important role in rheumatic disease. But there were conflicting results regarding the role of vitamin D in juvenile idiopathic arthritis (JIA). The aim of this study was to assess vitamin D serum level in patients with JIA and its correlation with disease activity. A cross-sectional study was conducted in JIA patients in Pediatric Allergy and Immunology Department, Saiful Anwar Hospital, Indonesia between 2017 and 2019. As control group, there were students who undergo routine health examination. Vitamin D (25-OHD) serum levels measured by ELISA methods, while the disease activity in JIA patient assessed by juvenile arthritis disease activity score (JADAS-27). The comparison, correlation and regression analysis were done using SPSS 24. Twenty JIA patients and twenty healthy control were enrolled in this study. The mean of age in JIA and control group were  $13.5 \pm 2.61$  and  $9.65 \pm 2.08$ , respectively. More than fifty percent of subject were female. Vitamin D serum level was lower in JIA group compared to control group ( $19.44 \pm 8.15$  vs  $31.99 \pm 2.96$ ,  $p=0.015$ ). The prevalence of vitamin D sufficiency were 85% in control group and only 10% in JIA group. All JIA patients were considered to have a high disease activity. The mean of JADAS-27 was higher in deficiency group compared to insufficiency ( $p=0.049$ ) and sufficiency groups ( $p=0.033$ ). There was negative correlation between vitamin D level and JADAS-27 ( $p= 0.014$ ,  $r=-0.540$ ). We conclude that there was low level of vitamin D in JIA patients which correlate with higher disease activity.

**Keywords:** Juvenile idiopathic arthritis; Vitamin D; disease activity; JADAS-27

EV-1206-281

WIDYALOKA

13:00 - 13:30

### Synthesis of Organ quartz from Sea Sand Using Sodium Dodecyl Benzene Sulfonate (SDBS) for adsorption of Heavy Metal Cation $Fe^{3+}$

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**Abstract** - The purpose of this study was to determine the effect of modification and variation of SDBS concentration on changes in sea sand function groups and the ability of adsorption on heavy metal  $Fe^{3+}$ . Sea sand activation was carried out with 0.1 M HCl and synthesis of organ quartz with SDBS concentration at  $<CMC$ ,  $\approx CMC$ , and  $>CMC$ . Characterization with FTIR spectrophotometry showed a change in spectra pattern. Activation causes the absorption of silanol -OH functional groups in the region of  $3750\text{ cm}^{-1}$  increase, while modifications make the

absorption decrease. The results of the characterization with SEM showed that the morphology on the surface of the sea sand was not uniform, there were irregular white chunks. The EDX results showed that the dominant elements were C (13.89%), O (40.48%), Si (16.51%), and Fe (11.68%). Adsorption was carried out using  $\text{Fe}^{3+}$  with concentration 50 ppm, then  $\text{Fe}^{3+}$  metal content was analyzed by AAS. The adsorption value of active sea sand was 58.22%, lower than sea sand without activation which was 70.46%. Modified sea sand adsorption value is 61.52%, higher than active sea sand.

**Keywords:** Sea sand, quartz, surfactant, SDBS, adsorption

DE-1207-309

WIDYALOKA

13:00 – 13:30

**Periodontal and Gingival Health Screening of Obese People (A Pilot Study in Sukun, Malang City)**

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**Abstract** - Malang City Health Profile (2017) showed that 11.57% of people in obesity, which the highest prevalence is in Sukun sub-district. Obesity is excess of body weight due to accumulation of fat. Obesity is thought to cause periodontal and gingival tissue health problems. The purpose of this study is to determine the periodontal and gingival health in obese people compared to non-obese people. This study involved 107 respondents (52 obese and 53 non-obese) in Puskesmas Janti from August to November 2019. We measured Community Periodontal Index of Treatment Needs (CPITN) and Modified Gingival Index (MGI) scores to observe the periodontal and gingival tissue. The results are obese people have CPITN score 0:5 (9.3%), score 1:2 (3.7%), score 2:32 (59.3%), score 3:12 (22.2%) and score 4:3 (5.6%), while non-obese patients have CPITN score 0: 7 (13.2 %), score 1: 11 (20.8%), score 2: 33 (62.3%), score 3:2 (3.8%) and score 4:0 (0%). Obese people had normal MGI 18 (33.3%), mild 18 (33.3%), moderate 5 (9.3%), and severe 13 (24.1%), while non-obese people had normal MGI 21 (39.62%), mild 28 (52.83%), moderate 4 (7.55%), and severe MGI 0 (0%). Chi square test results showed there were significant differences in CPITN and MGI scores in obesity compared to non-obese. The Spearman correlation test showed a significant correlation between body mass index in obesity with CPITN and MGI scores. The conclusion is obesity affects the periodontal and gingival tissue health in terms of CPITN and MGI scores.

**Keywords:** Obese; Periodontal health; Gingival health; CPITN; MGI

MH-1207-318

WIDYALOKA

13:00 – 13:30

**Relationship Between Distribution and Frequency of Indoor and Outdoor Containers with The Numbers of Dengue Hemorrhagic Fever in The Endemic Areas of Dengue Hemorrhagic Fever in Tambak Cemandi Village, Sedati, Sidoarjo**

Risma

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**Abstract** - *A. aegypti* is known as the main vector of Dengue Hemorrhagic Fever. Dengue Hemorrhagic Fever or better known as the acronym of DHF is an infectious disease caused by Dengue virus and transmitted by *Aedes* mosquitoes. Sidoarjo as part of East Java Province is also an endemic area of Dengue Haemorrhagic Fever because in every year there is many cases of DHF. Containers are stuffs s used to accommodate water for household use, where this container can be used as a place for mosquitoes to breed. So, it can appear mosquito larva which then develops into adult mosquitoes which is a vector of DBD disease. Judging from the location of the container can be divided into indoor containers are containers that are contained in the part of the house that is covered by a roof and outdoor containers are containers that are located in the part of the house that is not covered by the roof. This research is conducted to find out if there is a relationship between distribution and frequency of Indoor and Outdoor Containers with the numbers of DBD in the endemic areas of Dengue Haemorrhagic Fever in Tambak Cemandi Village, Sedati t, Sidoarjo. This method of research is analytical observation with cross-sectional design. The samples in this study are indoor containers, outdoor containers, all residence and all the larvae of *Aedes aegypti* which are located in those taken from 100 house of respondents located in the village of Tambak Cemandi, Sedati District, Sidoarjo Regency. The result was found 182 containers obtained from 100 houses of respondents, consisting of 157 indoor containers and 25 outdoor containers. From 157 indoor containers were found 1611 *Aedes aegypti* larvae and from 25 outdoor containers were found 168 *Aedes aegypti* larvae. From 100 residence, who have got DBD as much as 16 people and who never got DBD as much as 84 people. Using Contingency Coefficient test obtained result  $P = 0.432$  ( $P < \alpha = 0.05$ ), meaning that there is no relationship between a relationship

between distribution and frequency of Indoor and Outdoor Containers with the numbers of DBD in the endemic areas of Dengue Hemorrhagic Fever in Tambak Cemandi Village, Sedati t, Sidoarjo.

**Keywords:** Indoor Containers, Outdoor Containers, larvae *Aedes aegypti*, Dengue Hemorrhagic Fever

MH-1207-323

WIDYALOKA

13:00 – 13:30

**Effect of Lime (*Citrus aurantifolia*) Peel Extract as Larvicide Against Third Instar Larvae of *Aedes aegypti***

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**Abstract - Background:** *Dengue* haemorrhagic fever morbidity and mortality rates in Indonesia always increase every year. The Indonesian Ministry of Health has tried to overcome this problem by organizing a Mosquito Nest Eradication program (PSN) to cut the life cycle of the *Aedes aegypti* as the main vector of this disease. The use of chemical larvicides causes environmental pollution, so natural alternatives are needed. One plant that is thought to have a larvicidal effect is lime (*Citrus aurantifolia*). **Objective:** To investigate the effect of lime peel extract (*Citrus aurantifolia*) as larvicide against third instar larvae of *Aedes aegypti*. **Methodology:** Experimental with a posttest only control group design. Third instar larvae of *Aedes aegypti* were given lime peel extract with concentrations of 1%, 2.5%, 4%, 5.5%, and 7% for 24 hours. This process was repeated four times. **Results:** At a concentration of 2.5% caused larval death by 41.2%, a concentration of 4% caused larval death by 55%, a concentration of 5.5% caused larval death by 70%, a concentration of 7% caused larval death by 87.5%, and a concentration of 8.5% caused the death of larvae by 98.7%. The greater the concentration, the higher the mortality of third instar *Aedes aegypti* larvae. Wilcoxon and Mann Whitney Tests showed that there were differences in the concentration of lime peel extract on larval mortality. **Conclusion:** Lime peel extract (*Citrus aurantifolia*) has larvicidal effect on third instar larvae of *Aedes aegypti* mosquitoes.

**Keywords:** lime peel; larvicides; *Aedes aegypti*

MH-1207-325

WIDYALOKA

13:00 – 13:30

**The Potential of Red Betel Leaf Extract (*Piper crocatum*) As Larvicides Against Larvae of *Culex quinquefasciatus* INSTAR III**

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**Abstract -** Red betel leaves (*Piper crocatum*) contain alkaloids, tannins, steroids, saponins, aetheric oil, and flavonoids, which can be used as larvicides. The larvacidal properties of red betel leaves can be used to decide the life cycle of *Culex quinquefasciatus* mosquitoes, especially in the larval stage. *Culex quinquefasciatus* is the main factors of filariasis. The Objective of this study is to determine the potential of giving red betel leaves extract (*Piper crocatum*) against the death of instar III *Culex quinquefasciatus* larvae. This study was use experimental study (post test only control group design) using samples of instar III *Culex quinquefasciatus* divided into 6 groups (4 treatment groups and 2 control groups), each group contains 10 *Culex quinquefasciatus* instar III larvae, then replicating 4 times. The treatment group was given red betel leaves extract (*Piper crocatum*) with concentrations of 0,25%, 0,5%, 1%, and 2%. The negative control group was only given aquades and the positive control group was given abate. Observation and larvae death count were carried out 1x24 hours after treatment. Data analysis using the *Kruskall-Wallis* and *Mann-Whitney U* tests. The Results were that The *Kruskal-Wallis* test showed significant effect of red betel (*Piper crocatum*) leaves extract on the number of death *Culex quinquefasciatus* instar III larvae ( $p = 0.000$ ). The *Mann-Whitney U* test showed significantly different of three group of treatment with red betel (*Piper crocatum*) leaves extract from treatment with abate solution treatment (positive) and treatment with water only (negative). The Conclusion was that Red betel (*Piper crocatum*) leaves extract showed significant effect on *Culex quinquefasciatus* instar III larva mortality. It found death larva in each replication of treatment with red betel (*Piper crocatum*) leaves extract.

**Keywords:** larvicides, red betel leaf extract (*Piper crocatum*), filariasis, *Culex quinquefasciatus*

MH-1207-329

WIDYALOKA

13:00 – 13:30

**Mechanism of Pancreatic Islet Number Improvement on Hyperglycemic Wistar Rats (*Rattus norvegicus*) After Golden Sea Cucumber (*Stichopus hermanii*) Extract Administration**

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**Abstract -** Diabetes mellitus is a metabolic disorder indicated by a decrease in insulin secretion, insulin insensitivity, or a combination of both. Golden sea cucumber (*Stichopus hermanii*) is a natural resource of Indonesian waters with benefit for reducing blood sugar levels. This research aimed to determine the anti-

hyperglycemic mechanism of golden sea cucumber. This study used a laboratory experimental research with Post-test only Control Group. The sample of this study consisted of 25 male rats aged 60-70 days, were divided into 5 groups: K(-), K(+), P1, P2, and P3 randomly. Rats from K(+), P1, P2, and P3 groups were injected with streptozotocin (STZ) with a dose of 50 mg/kg BW. Treatment was administered for 21 days. K(-) and K(+) groups were fed normally while P1, P2 and P3 groups were given golden sea cucumber 80% ethanol extract with a dose of 4,25 mg/kgBW/day, 8,50 mg/kgBW/day and 12,75 mg/kgBW/day respectively. On the 22<sup>nd</sup> day, fasting blood sugar level was measured and the number of pancreatic islets was counted with histopathological examination. The administration of golden sea cucumber (*Stichopus hermannii*) extract on rats with hyperglycemia does not reduce blood sugar level, but the extract administration increases the number of pancreatic islets. Golden sea cucumber (*Stichopus hermannii*) extract may improve the number of pancreatic islet and prevent the progressive damage of pancreatic islet.

**Keywords:** Golden sea cucumber (*Stichopus hermannii*); pancreatic islet; hyperglycemia

FM-1207-348

WIDYALOKA

13:00 – 13:30

### The Role of Supply Chain Integration to Improve SMES Performance - A Case Study of The Fisheries Industry in Aceh.

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**Abstract** - This article proposes an approach to determine the underlying dimensions of Supply Chain Management integration and its relation to performance among small firm with special emphasis on tuna industry in Aceh, Indonesia. The overall aim of the study is to better understand successful SCM practices which have been implemented by small industry in Aceh and the challenges faced in the process. This paper uses qualitative data, which was collected from open-ended interviews with stakeholders in a leading Aceh tuna business, together with the SCOR model, which is used to define supply chain processes and associated performance indicators. The result of this research indicates that the industry regards flexibility, efficiency and quality as the most important indicators in their supply chain operation. however, factors such as financial, SCM expertise, infrastructure and resource create a barrier in implementing an effective supply chain. Further to this, Successful SCM strategies improving SCM performance were identified based on each performance indicators. The result of this paper is expected to contribute to theoretical and practical knowledge of SCM practice, and to develop recommendation for future development of industry with small-scale capabilities.

**Keywords:** Supply chain management (SCM); Small and Medium Enterprises (SMEs)

MH-1207-351

WIDYALOKA

13:00 – 13:30

### Efficiency Comparison of 20-50% Continue Mode and 20-50% Linear Burst Mode in Phacoemulsification Operation Technique for Third Degree Buratto Cataract: Comparative Study

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**Abstract - Background and Aim:** The main complication of phacoemulsification of cornea using ultrasonic wave is the erosion or the loss of endothelium cells and corneal burns. The purpose of this study is to discover the comparison of CDE (Cumulative Dissipated Energy, Phaco Time, and Normal Saline (NS) that are used during the procedure of phacoemulsification of either 20-50% continuous mode or 20-50% linear burst for cataracts with third-degree Buratto classification. **Methods:** Method used in this study is comparative analysis with qualitative approach. The number of samples for each linear burst and continuous modulation are 16 samples that are obtained through consecutive sampling method. Then, the parameters used to compare both modulations are CDE efficiency, phaco time, and the among of fluid used in the process of phacoemulsification for only third-degree Buratto cataracts by an individual who is an expert on his/her fields utilizing Alcon Centurion as the phaco machine. **Result:** The parameter of CDE efficiency on the continuous group shows an average score of  $8.136 \pm 2.077$ , while on the linear burst shows an average score of  $5.468 \pm 0.825$ . The phaco time showed on the continuous group is  $49.063 \pm 12.678$  and the phaco time showed on the linear burst group is  $29.813 \pm 5.776$ . Parameter of fluid used on the continuous mode shows a result of  $38.500 \pm 11.478$  while on the linear burst mode shows a result of  $31.375 \pm 5.188$ . The discrepancy obtained on all parameters are significant where the linear burst modulation has a lower score. **Conclusion:** Linear burst phacoemulsification modulation is more efficient in comparison with the continuous modulation when used on a third-degree Buratto cataract operation.

**Keywords:** Cataract, Phacoemulsification, Third-degree Buratto, Linear Burst, Continuous, CDE, Phaco Time, Fluid

ABES-1207-356

WIDYALOKA

13:00 – 13:30

**Conceptual Approach between Transformational Leadership, Organizational Culture, and Employee Performance for Public Sector Organization on Facing an Era of Disruption**

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**Abstract** - Disruption affects all aspects of social life, including in an organization. That phenomenon "forces" the organization to behave adaptively to apply the mindset of disruption, so that managerial factors are managed more effectively and efficiently. This is not only faced by private organizations but also by public organizations. Public organization has the challenge to optimize the economic and social costs of an activity, in addition to performance challenges in a bureaucratic work environment that require extra effort to deal with the phenomenon above. The aim of this article is to describe a conceptual framework that shows the relationship between leadership style, a culture of an organization, organizational citizenship behavior, and performance variables. This article describes some empirical evidence of the influence of transformational leadership and organizational culture on employee performance and also presents differences opinion about the implementation of transformational leadership in the context of public organizations. Finally, some research objectives that might observe the relationship of leadership, culture, and performance variables especially in the field of public organizations are highly expected to develop research objectives.

**Keywords:** Transformational Leadership; Organizational Culture; Organizational Citizenship Behavior and Employee Performance.

MH-1207-361

WIDYALOKA

13:00 – 13:30

**Does Chitosan Improve The Lumen of The Heart Arteries In Diabetes Mellitus?**

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**Abstract** - Diabetes mellitus is a metabolic disease caused by many factors, characterized by chronic hyperglycemia with impaired metabolism of carbohydrates, fats, and proteins, which are caused by impaired insulin secretion, insulin action, or both. Diabetic angiopathy is a chronic complication of diabetes mellitus occurs in essential blood vessels throughout the body, started by endothelial dysfunction of vascular endothelial. Chitosan increases cardiac performance due to amino polysaccharide molecules. This study aims to determine whether the use of chitosan as adjunctive therapy for diabetes mellitus. Histopathological changes were observed by seeing the blood that filled the lumen of the heart arteries. Sixteen white rats divided into two groups: group 1 as treatment groups were injected by streptozotocin and group 2 as a treatment group was injected streptozotocin and giving chitosan. Data collection of coronary arteries was performed with a score of 3 >75 %, between 25%-75% given two scores, and < 25% were given rating 1. The results of paired t-test can be significant value between the observation of the blood that filled the lumen of the blood vessel of the heart ( $p < 0,005$ ) indicating there is a significant difference between diabetic rats with streptozotocin that given chitosan compare with diabetic rats were not given chitosan. It can be concluded that chitosan as adjunctive therapy for diabetes mellitus can improve the lumen of the heart arteries.

**Keywords:** lumen of the heart arteries; diabetes mellitus; chitosan

EAPS-1207-392

WIDYALOKA

13:00 – 13:30

**Generating synthetic seismograms for subsurface modeling of Arjuno-Welirang outflow based on the recording of a 3-component seismometer**

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**Abstract** - The theory underlying this synthetic seismogram creation is a linear filter. In this theory, a seismogram can be seen as the output of a sequence of linear filters on the signal from a seismic source. This filter represents different processes such as propagation through the earth or processes that occur during recording. The output of the filter response to an impulse, which is a delta function, is expressed in  $f(t)$  and its Fourier transform is expressed in  $F(\omega)$ . This paper shows a preliminary study to perform a modeling subsurface structures of Arjuno-Welirang volcanoes based on the recording of a 3-component seismometer. Arjuno-Welirang is one of the active volcanoes in Indonesia which in recent years shows an increase in volcanic activity.

Keywords: -

MH-1207-393

WIDYALOKA

13:00 – 13:30

**Tuberculosis Dropout Patients Factors in Indonesia: Systematic Review**



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**Abstract** - Tuberculosis (TB) disease in Indonesia is one of major public health problems which cannot be overcome yet. Patients with tuberculosis require retreatment if they fail or default from initial treatment or if they relapse following initial treatment success. Drop out Patient contributed spreading virus to others more than before they got treatment. Therefore, this research was to identified the drop out factor from tuberculosis treatment occurrence by using systematic review on Tuberculosis related existing publication and research in Indonesia. This Research was used systematic review conducted based on publish and unpublished (grey literature) data during 2009 -2019. Publish data from search engine such as Google scholar, Neliti, repository online university in Indonesia. It consisted 20 research publications, 15 of them in quantitative research and 5 of them qualitative research. All of them were categorized as primary data. Most of the research used cross sectional and case control design. As result Several major drops out Tuberculosis treatment factors in Indonesia were identified, including drug side effect, Supervisor of Drug Swallowing, knowledge, motivation and family support.

**Keywords:** Tuberculosis treatment; drop out factors.



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