

2014 APCBEES SINGAPORE CONFERENCES SCHEDULE

2014 4th International Conference on Environmental and Agriculture Engineering (ICEAE 2014)
2014 5th International Conference on Chemistry and Chemical Engineering (ICCCE 2014)
2014 3rd International Conference on Geological and Environmental Sciences (ICGES 2014)

Singapore

August 6-7, 2014

Hotel Royal

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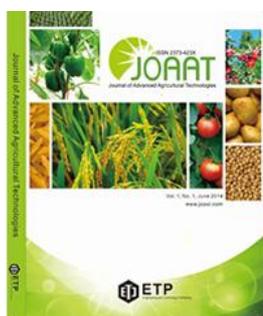
2014 APCBEES Singapore Conferences

Introduction

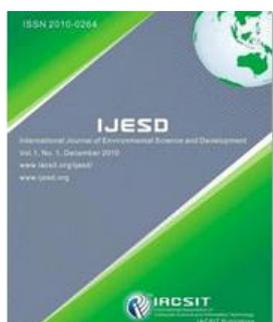
Welcome to CBEES 2014 conferences in Singapore. The objective of the Singapore conferences is to provide a platform for researchers, engineers, academicians as well as industrial professionals from all over the world to present their research results and development activities in Environmental and Agriculture Engineering, Chemistry and Chemical Engineering, and Geological and Environmental Sciences.

2014 4th International Conference on Environmental and Agriculture Engineering (ICEAE 2014)

- ❄ **Paper publishing and index:** All **ICEAE 2014** papers will be published in one of the Journals with ISSN:



Journal of Advanced Agricultural Technologies (JOAAT ISSN: 2301-3737) (<http://www.joaat.com/>)--- Will be indexed by Ulrich's Periodicals Directory, Google Scholar, EBSCO, Crossref, and etc.



International Journal of Environmental Science and Development (IJESD ISSN: 2010-0264) (<http://www.ijesd.org/>)--- Will be indexed by Chemical Abstracts Services (CAS), CABI, DOAJ, Ulrich Periodicals Directory, Engineering & Technology Digital Library, Electronic Journals Library, Crossref, ProQuest.

- ❄ **Conference website and email:** <http://www.iceae.org/>; iceae@cbees.org

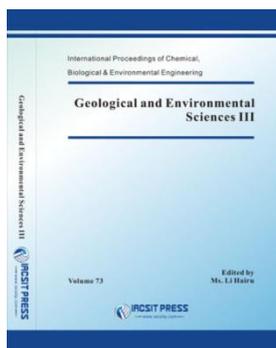
2014 5th International Conference on Chemistry and Chemical Engineering (ICCCE 2014)



❄ **Paper publishing and index:** Most papers of **ICCCE 2014** will be published **International Journal of Chemical Engineering and Applications (IJCEA, ISSN:2010-0221)**, and all papers will be included in the Engineering & Technology Digital Library, and indexed by EBSCO, WorldCat, Google Scholar, Cross ref, ProQuest , CABI and sent to be reviewed by EI Compendex and ISI Proceedings.

❄ **Conference website and email:** <http://www.iccce.org/>; iccce@cbees.org

2014 3rd International Conference on Geological and Environmental Sciences (ICGES 2014)



✧ **Paper publishing and index:** All **ICGES 2014** papers will be published in **the Volume of Journal (IPCBEE, ISSN: 2010-4618)**, and all papers will be included in the Engineering & Technology Digital Library, and indexed by Ei Geobase(Elsevier), CABI, Ulrich's Periodicals Directory, EBSCO, CNKI(中国知网), WorldCat, Google Scholar, Cross ref and sent to be reviewed by Compendex and ISI Proceedings.

✧ **Conference website and email:** <http://www.icges.org/>; icges@cbees.org

Excellent Paper Award

✧ One excellent paper will be selected from each oral presentation sessions, and the Certificate for Excellent Papers will be awarded at the end of each session on August 7, 2014.

Instructions for Oral Presentations

Devices Provided by the Conference Organizer:

Laptop Computer (MS Windows Operating System with MS PowerPoint & Adobe Acrobat Reader)
Digital Projectors & Screen
Laser Sticks

Materials Provided by the Presenters:

PowerPoint or PDF files (Files shall be copied to the Conference Computer at the beginning of each Session)

Duration of each Presentation (Tentatively):

Regular Oral Presentation: about 8 Minutes of Presentation and 2 Minutes of Q&A
Keynote Speech: 30 Minutes of Presentation and 10 Minutes of Q&A

Instructions for Poster Presentation

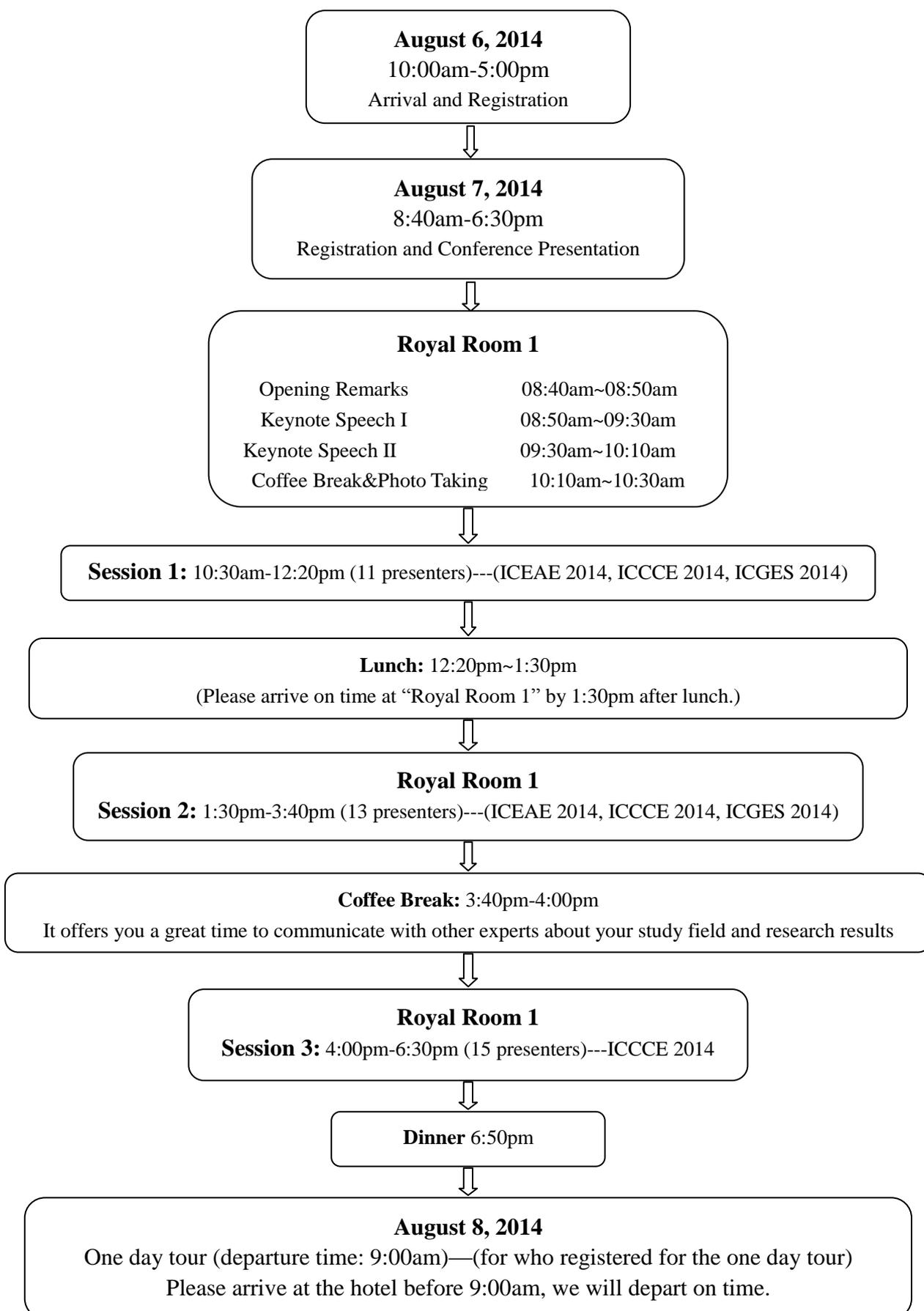
Materials Provided by the Conference Organizer:

The wall to put poster

Materials Provided by the Presenters:

Home-made Posters
Maximum poster size is A1.
Load Capacity: Holds up to 0.5 kg.

Brief Schedule for Conferences



Detailed Schedule for Conferences

August 6, 2014 (Wednesday)

Venue: level 1

10:00am-5:00pm	Arrival and Registration
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Note: (1) You can also register at any time during the conference.

(2) The organizer doesn't provide accommodation, and we suggest you make an early reservation.

(3) One excellent paper will be selected from each oral presentation sessions, and the Certificate for Excellent Papers will be awarded at the end of each session on August 7, 2014.

Morning, August 7, 2014 (Thursday)

Venue: Royal Room 1

8:40am-8:50am	<p>Opening Remarks Prof. Khaled M. Bali University of California, San Diego, USA</p>
8:50am-9:30am	<p>Keynote Speech I Prof. Chan Jin Park Incheon National University, Republic of Korea</p>  <p>“Characteristics of Gas Emissions in Landfill Site in Recent Years”</p>
9:30am-10:10am	<p>Keynote Speech II Prof. Khaled M. Bali University of California, San Diego, USA</p>  <p>“Irrigation management strategies to cope with drought and limited water resources”</p>
10:10am-10:30am	Coffee Break&Taking Photo

Morning, August 7, 2014 (Thursday)

SESSION-1 (ICEAE 2014, ICCCE 2014, ICGES 2014)

Venue: Royal Room 1

Session Chair: Prof. Khaled M. Bali

Time: 10:30am-12:20pm

N0001	<p>The Utility of Rice Husk Ash from Biomass Power Plant: Synthesis of Na-A and Na-X Zeolites Using the Two Step Method Hydrothermal Chawikarn Santasnachok Tokyo Institute of Technology, Japan</p> <p><i>Abstract</i>—Rice husk ash (RHA), a solid waste from biomass power plant was used as a raw material to synthesize Na-A and Na-X zeolites. In fact, high silica content of this material opens a possibility for it to be used as a potential zeolite precursor. In this study, a medium size particle of RHA has been reused to prepare zeolite with high purity. After segregation by mechanical sieving, the medium size particle fraction of RHA was subjected to alkali fusion treatment followed by dissolution and then residue separation to produce clear silicate supernatant as the silica source for preparing the low-silica zeolites. High purity Na-A and Na-X zeolites were prepared using hydrothermal treatment by optimizing the process condition, curing time, hydrothermal temperature and Si/Al molar ratio in the reaction mixture. The utilization of zeolite for adsorption of cadmium using batch technique was investigated. The effect of time, dosage and initial concentration of solutions on the adsorption was investigated. The result showed that adsorption capacity of Na-A zeolite was much higher than that of Na-X zeolite. The equilibrium data were fitted by the Langmuir model. Na-A and Na-X zeolites synthesized with the optimal condition possessed a maximum value of cation exchange capacity (CEC) of 470 meq/100 g and 503 meq/100g, respectively.</p>
N0003	<p>Estimating Maturity of Paddy using RGB Colour Space Norsolehah Azman, Siti Khairunniza Bejo, Wan Ishak Wan Ismail and Aimrun Wayayok Department of Biological and Agricultural Engineering, Faculty of Engineering, University of Putra Malaysia</p> <p><i>Abstract</i>—Colour plays important role in evaluating quality and maturity level of many agricultural products. Immature paddy has been defined as kernels or pieces of grain kernels that are not fully developed and are yellow-green in colour. Immature paddy will caused broken rice and losses during storage. This paper presents a new technique of paddy maturity estimation using various colour indices extracted from RGB colour spaces. Paddy samples were taken during 96 and 98 Days After Planting (DAP). Results has shown that there are significant relationships between all of the colour indices with the DAP. The strongest significant relationship can be gathered from G-B colour index, with $R = -0.924$ ($p > 0.001$). A linear regression model was later being developed based on G-B colour index defined as $MATURITY = -16.95(G-B) + 101.61$.</p>
N0016	Production of Biomethane from Cafeteria, Vegetable and Fruit Wastes by Anaerobic

	<p>Co-Digestion Process Muhammad Rashed Al Mamun and Shuichi TORII Kumamoto University, Japan</p> <p><i>Abstract</i>—Alleviate energy crisis and global climate change, the world is need of a green, efficient, carbon-neutral renewable energy source to replace fossil fuels. This study was designed to determine the optimal mixing ratio of cafeteria, vegetable and fruit wastes in biogas production and methane yields using batch anaerobic digesters at mesophilic (25 to 34°C) temperature. The mixing ratio used were CW:VW:FW (0.5:1.0:1.5, 1.0:1.5:0.5, 1.5:0.5:1.0 and 1.0:1.0:1.0) for cafeteria waste (CW), vegetable waste (VW) and fruit waste (FW) respectively. The fermentation was carried out in 200 L polypropylene digesters. The results showed that the co-digestion significantly affected the biogas production rate. At four mixing ratio tested, after 35 days of digestion, the biogas yield was determined to be CW:VW:FW (0.5:1.0:1.5, 1.0:1.5:0.5, 1.5:0.5:1.0 and 1.0:1.0:1.0) were 13.38, 15.85, 17.03 and 19.43 L/day, respectively. The cumulative average biogas productions from CW:VW:FW (0.5:1.0:1.5, 1.0:1.5:0.5, 1.5:0.5:1.0 and 1.0:1.0:1.0) were 225, 279, 305 and 332 L/day, respectively. The biogas yields obtained in the work for the cafeteria (CW), vegetable (VW) and fruit wastes (FW) mixture were in the order of (1.0:1.0:1.0 > 1.5:0.5:1.0 > 1.0:1.5:0.5 > 0.5:1.0:1.5). The higher methane contents and yields were obtained from the CW:VW:FW (1.0:1.0:1.0) mixture ratio than those from the CW:VW:FW (1.5:0.5:1.0, 1.0:1.5:0.5, and 0.5:1.0:1.5). Thus, optimum mixing ratio suggested by the study which gave maximum yields within 35 day hydraulic retention time without inoculums added.</p>
N0017	<p>Timeline Effects of Vocal Instructions from Computer Programs on Agricultural Technical Teaching Shinji KAWAKURA, Ryosuke SHIBASAKI The University of Tokyo, Japan</p> <p><i>Abstract</i>—Recently, real agricultural workers on general outer farmlands have had serious difficulties in lecturing their traditional manual skills to young, inexperienced workers. We have researched traditional, manual daily tasks of agricultural workers, and developed promising application systems. In terms of passing on traditional skills, we have been focused on wearable sensing systems to send useful vocal instructions (Vis) to improve the actions and postures of inexperienced workers synchronously. Time-line data of physical acceleration and angular velocity were recorded with directly attached sensors on the lower arms, chest and waist of users and the hoe that they hold. Further-more, these data were sent to original programs installed on a laptop computer in a knapsack on the back of the user. And, while those data were logged by programs, calculated by various statistical and human dynamics methods in aforementioned programs, Vis recorded originally previously by us were also sent. To improve and reform the agricultural techniques of inexperienced workers, and to maintain the safety of users, Vis is provided through an earphone. The thresholds of various analyses were based on accumulated and analyzed time-series of data obtained in preliminary trials. We also obtained visual data, and executed optical flow analysis by combining the techniques of statistics using programs based on Open CV.</p>

	<p>By reviewing them totally, we confirmed the validity and usefulness of our system, which can assist inexperienced users to make their motions close to the experienced worker. However, the same time, the unselfconscious motions of experienced workers are totally more effective and sophisticated.</p> <p>From these results and work products, we believe the precise measuring and judging those motions will heighten workers skills and their safety level. And those will be significant.</p>
N0028	<p>Standardization of Seedling Characteristics for Paddy Transplanter Vasudevan, S.N., Basangouda, Rakesh C.Mathad, Doddagoudar, S.R. and Shakuntala, N.M. DEPARTMENT OF SEED SCIENCE AND TECHNOLOGY, UNIVERSITY OF AGRICULTURAL SCIENCES, RAICHUR, KARNATAKA, INDIA</p> <p><i>Abstract</i>—These A field experiment was conducted during kharif 2012 at ARS, Gangavathi, UAS, Raichur to standardize the suitable age of seedlings, stage and concentration of GA₃ spray for mechanical transplanting of rice seedlings. The treatment consisted of different age of seedlings (20, 25 and 30 days old seedlings) and two concentrations of GA₃ (25 and 50 ppm) and sprayed on 10 days and 15 days old seedlings. The results revealed that 30 days old seedlings along with spraying of GA₃ @ 50 ppm on 15 days old seedlings recorded significantly higher seedling growth parameters like shoot length (26.62 cm), root length (12.29 cm), root volume (9.33 cm³) and lowest was recorded with 20 days old seedlings without GA₃ spray (14.2 cm, 6.26 cm and 4.00 cm³) respectively. Whereas, 20 days old seedlings with spraying of GA₃ @ 50 ppm on 15 days old seedlings recorded higher number of tillers per hill (22.9), seed yield (47.05 q/ha), straw yield (23.7 q/ha), lowest unfilled seeds (6.1) and highest B:C ratio (2.7). Among the various age of seedlings and concentration of GA₃ used for the study, twenty days old seedlings along with spraying of GA₃ @ 50 ppm on 15 days old seedlings were found most suitable for walk behind mechanical transplanter in order to get better seedling establishment, plant growth, seed yield and to realise more profit by minimising the cost of seed production.</p>
H0016	<p>Optimization of Reaction Conditions for Synthesis of Carboxymethyl Cellulose from Oil Palm Fronds Penpun Tasaso Mahidol University</p> <p><i>Abstract</i>—Oil palm fronds is an agricultural waste derives from the harvesting of oil palm fruit bunches, rich in fiber and cellulosic compound. This work reported the utilization of oil palm fronds for synthesis carboxymethyl cellulose (CMC). The optimization of reaction conditions was studied by using response surface methodology (RSM). The design experiment is central composite design consists of 2 factors (% NaOH in mercerization process and weight of monochloroacetic acid in etherification process) with 5 levels. It was found that at optimum condition: 52 % NaOH and 10.7 g of MCA, at reaction temperature of 50 °C with 3 h of reaction time, given the highest yield of 170.1 % CMC. Synthesized oil palm fronds CMC obtained at this condition was characterized, which has DS of 1.1, purity 97.3 %, viscosity of 1% w/v CMC solution was 685 cP. This synthesized oil palm fronds CMC could be categorized as technical grade CMC.</p>
H0019	<p>Polyphenol Measurement and Antioxidant Activity Determination of Miracle Fruit Fang-Yi Cheng, Shyue-Tsong Huang, Mei-Ling Lin and Jinn-Tsyi Lai</p>

	<p>Food Industry Research and Development Institute</p> <p><i>Abstract</i>—Miracle fruit has unique protein which can make sour flavors to sweet, and the bright red skin might be a natural pigment. After the harvest of miracle fruit, removal of fruit skin, fruit meat, the fruit seeds become natural side product using for biofertilizer. Recently, a growing research reports focus on the investigation of fruit seeds for screening potential antioxidants, such as steroids, phenols, and flavonoids as well. In this research, we verify miracle fruit seed is great multi- antioxidant source by different extraction solution. 3μg (GAE)/mg total phenolic and 3.1μg (RUE)/mg flavonoid content was measured when the miracle fruit was extracted by acetic acid buffer with 20mM at pH6.0 and pure ethanol. The antioxidation ability of DPPH and ABTS free radical scavenging was over 70%, chelating effect of ferrous ions reached 80%.</p>
B0004	<p>Sedimentology and Petrography of Selected North Sumatra Pre-Tertiary Formations: Anticipating New Petroleum Systems in Western Indonesia Andang Bachtiar, Prihatin Tri Setyobudi, Siti Asyiah, Armein Suleiman, Purnama Ary Suandhi GEOSAIN DELTA ANDALAN (GDA)</p> <p><i>Abstract</i>—This research is focused on studying the depositional system and petrographic characteristics of petroleum system that form in North Sumatera, Indonesia to reveal the diagenesis, metamorphism, alteration indicators related to reservoir and source rock potential. Field work was integrated with paleontology analysis and comprehensive petrographic study of selected thin sections. Paleozoic and Mesozoic Stratigraphy of North Sumatra can be divided into Tapanuli Group (Alas Fm, Kluet Fm, Bohorok Fm) and Peusangan Group (Pangururan Bryozoa Bed, Batumilmil Fm, Kaloi Fm, Kualu Fm). Pre-Tertiary Rocks were variously deposited in deep marine (ie: Sibaganding Limestone) with Radiolarian Limestone; shallow marine (ie: Batumilmil Fm, Kaloi Fm) with Limestone and dolomitic limestone; moraine glacier and till (ie: Bohorok Pebbly Mudstone); and shallow water (ie: Kualu Mudstone, Pangururan Bryozoa Bed). Batumilmil Fm can be divided into Dolomitic red limestone, Light-grey Limestone, Dark-grey Limestone, and Carbonaceous Claystone. Reservoir potential was formed by farctures, disslutions and dolomitization (ie: Kaloi and Batumilmil Dolomitic Limestone). Further more, source rock potential was found in Batumilmil and Kualu Mudstone.</p>
B0006	<p>Overpressure Characteristic in the Langkat Field, North Sumatra Basin, Indonesia Hazmanu Hermawan Yosandian, Hengki Irawan, Binti Wasik Atul Ulum, Irawan Youdha Tribuana, and Patra Embara Institute Technology of Bandung</p> <p><i>Abstract</i>—The North Sumatra Basin is an overpressured and productive basin in Indonesia. Top overpressure in the basin is found in Lower Keutapang Formation, just above Baong Formation. In The Aru and Kuala Simpang Field, Baong Fomation is shale dominated and forming mud volcano, which is a strong evidence of overpressure occurence in the basin. In the Langkat Field, top overpressure is also detected in Lower Keutapang and Baong Formation, meanwhile, its distribution and generating mechanism related to geological environment are still unknown. The methods used in this study are analyzing drilling</p>

	<p>parameters and wireline logs with additional data from geochemical analysis which are vitrinite reflectance (Ro), Tmax, and Total Organic Carbon (TOC). After analyzing drilling parameters and wireline logs, top overpressure in the research area detected in Lower Keutapang and Baong Formation. Then, the pressure versus depth profiles show that overpressure condition decrease until Middle Baong Sandstone and increase again until becoming normal hydrostatic condition in Belumai Formation. So, it can be concluded that overpressure condition in the research area characterized by shale prone formation (Upper and Lower Baong Formation), rather than sand prone formation (Middle Baong Sandstone and Belumai Formation). Results reveal that the overpressure generating mechanisms at the research area are compaction-related (loading) and fluid expanding-related (unloading). The loading mechanism is caused by rapid sedimentation rate of the basin and the unloading mechanism is caused by clay diagenesis, hydrocarbon generation, and vertical transfer. Therefore, this research conclude that overpressure is related to geological environment and history at the research area.</p>
B1004	<p>Strong Ground Motion Based on Microtremor and Empirical Stochastic Green's Function Computing at Palu City, Central Sulawesi Province, Indonesia Pyi Soe Thein, Subagyo Pramumijoyo, Kirbani Sri Brotopuspito, Junji Kiyono, Wahyu Wilopo and Agung Setianto Yangon University, Myanmar</p> <p><i>Abstract</i>—In this study, we investigated the strong ground motion parameters for Palu region. The strong ground motion in Palu City had been performed by using synthetic waveforms of 2005 Palu earthquake with the magnitude of 6.3 as input bedrock motion below the alluvium sediments. The Irikura's computer code was used to generate synthetic waveforms, mainly based on epicentral distance, magnitude and focal depth of earthquake. From this survey we produced a map of the seismic vulnerability index, peak ground acceleration and velocity in Palu City. We performed single and array observations of microtremors at 151 and 8 sites in Palu City. The results enabled us to estimate the shaking characteristics of earthquake ground motion. From the Microtremor observations, the central business district of Palu City corresponds to relatively soil condition with $V_s \leq 300$ m/s, the predominant periods due to horizontal vertical ratios (HVSRS) are in the range of 0.4 to 1.8 s. Microtremor survey results showed that in hilly areas had low seismic vulnerability index, whereas in coastal alluvium was composed of material having a high seismic vulnerability indication. Strong ground motions of the Palu area were predicted based on the empirical stochastic Green's function method. Peak ground acceleration and peak ground velocity becomes more than 400 gal and 30 kine in some areas, which causes severe damage for buildings in high probability.</p>
B2004	<p>Fluid Inclusion Studies of the Cijulang High-sulfidation Epithermal Prospect, West Java, Indonesia Myo Min Tun, I Wayan Warmada, Arifudin Idrus, Agung Harijoko, Okki Verdiansyah, Koichiro Watanabe Gadjah Mada University</p> <p><i>Abstract</i>—Cijulang prospect is located in Talegong Sub-District of Garut Regency, West Java, Indonesia. The prospect is characterized by enargite-gold mineralization and associated</p>

	<p>acid sulfate alteration. Mineralization is hosted by Tertiary calc-alkaline volcanic and volcanoclastics rocks. Fluid inclusions were studied in order to constrain the temperature, pressure and evolution of fluids responsible for high-sulfidation mineralization. Microthermometric measurements on fluid inclusions were made by freezing/heating experiment. Temperatures of homogenization (T_h) and final ice-melting (T_m) were measured for primary two-phase inclusions in quartz from vuggy silica zone. T_h values range from 200 °C to 310 °C. Salinities range from 0.71 to 4.03 wt. % NaCl eqv. Microthermometric data indicates that boiling, mixing and cooling occurred during the evolution of hydrothermal system. Paleodepth of formation is estimated at 400m, at a pressure of 39bar. Characteristic low salinities and moderate temperatures of the inclusions are similar to other fluids inclusions from various world-known epithermal high-sulfidation deposits.</p>

12:20pm-1:30pm	Lunch
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Afternoon, August 7, 2014 (Thursday)

SESSION-2 (ICEAE 2014, ICCCE 2014, ICGES 2014)

Venue: Royal Room 1

Session Chair: Prof. Chan Jin Park

Time: 1:30pm-3:40pm

H1002	<p>Rock Melon Activated Carbon (RMAC) for Removal of Cd (II), Ni (II) and Cu (II) from Wastewater: Kinetics and Adsorption Equilibrium Said Nurdin, Amalina Roslan, Mazza Seddiq A. Abbakar, Syafiqah A. Khairuddin and Hajar Athirah M. Sukri. University of Malaysia Pahang</p> <p><i>Abstract</i>—The use of effective adsorbents has been investigating as a replacement of current costly methods for heavy metals removal. The present work evaluates the potential of rock melon shell waste as alternative adsorbent for cadmium, nickel and copper ions in aqueous solution. The rock melon shells were dried, ground and separated based on the sizes through sieve shaker. Then, the rock melon shell powder was activated at temperature range of 400 °C - 650 °C. FESEM and BET were used for adsorbent morphology and surface area analysis. The prepared adsorbent and adsorbate were applied for testing and manipulating the process parameter effects. The results were analyzed by using the Atomic Absorption Spectroscopy (AAS). The optimal process conditions were used for adsorption equilibrium and kinetics justification. The removal of the heavy metals improved as the pH, contact time and adsorbent dosage increased. However, it tended to achieve equilibrium state once the active sites of the adsorbent were fully occupied. The highest removal of Cd (II), Ni (II) and Cu (II) ions equilibrated within 120 min, at pH of 8 and adsorbent dosage was 0.3 g which was exceed 99%. The second order kinetics model best fits the obtained data while the mechanism indicates surface adsorption and intraparticle diffusion. The adsorption equilibrium accompanies the Freundlich isotherm for cadmium and nickel, but the Langmuir</p>
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	for copper ion.
H0025	<p>Extraction of Nickel Nanoparticles from Electroplating Waste & their application in production of Bio-Diesel from Biowaste. Abhishek Kumar Sharma, Sameerah Desnavi, Utkarshaa Varshney, Charu Dixit and Ankur Sharma Aligarh Muslim University</p> <p><i>Abstract</i>—Electroplating waste samples were collected from various nearby industries in Aligarh, Uttar Pradesh (India), a prominent place for these industries and it was found that the concentrations of Cr+6, Ni+2, Cu+2 and Zn+2 ions were much more than the permissible norms of discharge which causes serious damage to the environment. To cater this issue, these heavy metal ions were extracted from the sample and then converted to their respective oxide nanoparticles by chemical precipitation and sol-gel methods respectively. And then, these nanoparticles were characterized by FTIR, XRD and UV-Visible techniques. Also one of the major wastes produced in India is the butchery waste which causes severe health problems and is aesthetically unpleasant. This paper mainly focuses on the production of biodiesel from butchery waste by a new pathway utilizing heterogeneous nano-catalysts of Nickel (Ni+2) (extracted from electroplating waste) for the process of trans-esterification, which produces biodiesel which are mono-alkyl esters of long chain fatty acids (FAME-Fatty Acid Methyl Esters).</p>
N0011	<p>Water Quality Index of Floodplain River Lubuk Lampam South Sumatera Indonesia Dade Jubaedah, Sigid Hariyadi, Ismudi Muchsin, Muchlis Kamal Bogor Agricultural University, Indonesia</p> <p><i>Abstract</i>—Lubuk Lampam is one of floodplain rivers area and part of this region had been determined as fisheries reserve. It is important to keep the sustainability of the ecosystem as floodplain fish resources. The main problem in this area is water quality degradation that was caused by both, natural and anthropogenic substances. The aims of this study are to determine water quality status and pollution level of the waters, related to the water level fluctuation (flooding periods) and pollutants from oil palm plantations and crude palm oil industry. Water quality status is determined using two methods based on Indonesian government regulation, i.e. water pollution index (WPI) and STORET index. The results indicated that Lubuk Lampam floodplain rivers is lightly-moderately polluted based on WPI value, while based on STORET method, the status is moderately-highly polluted.</p>
N0018	<p>Effect of Dissolved Oxygen Concentration on Specific Microbial Activities and Their Metabolic Products in Simultaneous Sulfur and Nitrogen Compounds Removal System Wikanda Thongnueakhaeng and Pawinee Chaiprasert King Mongkut's University of Technology Thonburi, Thailand</p> <p><i>Abstract</i>—This work investigated simultaneous removal of sulfur and nitrogen compounds under micro oxygen. Different ranges of dissolved oxygen (DO) concentration were used, from 0.05-0.10, 0.10-0.15, 0.15-0.20, 0.20-0.25 and 0.25-0.30 mg/L, to study the effect of DO on specific microbial activities and their metabolic products. The results indicated that the optimal DO concentration was 0.10-0.15 mg/L. This condition provided removal efficiency of SO_4^{2-}-S and NH_4^+-N at 71.2% and 62.8%, respectively. In addition, S^0 and N_2</p>

	<p>gas were the required end products for this study. The yield of S^0 and N_2 was $0.63 \text{ g-S}^0_{\text{produced}}/\text{g-SO}_4^{2-}\text{-S}_{\text{added}}$ and $0.57 \text{ g-N}_{2\text{produced}}/\text{g-NH}_4^+\text{-N}_{\text{added}}$, respectively. Activities of sulfate reducing bacteria (SRB), sulfide oxidizing bacteria (SOB), nitrifier and denitrifier were 0.098, 0.361, 0.080 and $0.169 \text{ g-substrate}_{\text{consumed}}/\text{g-VSS/d}$, respectively. At the lowest DO of 0.05-0.10 mg/L, nitrifier was inhibited, leading to decreasing $\text{NH}_4^+\text{-N}$ removal efficiency and N_2 yield. However, sulfate removal and S^0 yield slightly increased. When DO concentrations reached 0.15-0.30 mg/L, sulfate removal efficiency and S^0 yields decreased significantly. In addition, SRB activity was inhibited significantly while activity of SOB was not significantly different. In contrast, the activity of nitrifier was enhanced by increasing oxygen to peak removal of ammonium. However, N_2 gas production was increased slightly because nitrate reduction to N_2 was inhibited at high DO concentrations.</p>
N0020	<p>Photocatalytic Degradation of Aqueous VOCs Using N Doped TiO_2: Comparison of Photocatalytic Efficiency under Visible and Sunlight Irradiation V. S. Priya and Ligy Philip INDIAN INSTITUTE OF TECHNOLOGY, MADRAS, INDIA</p> <p><i>Abstract</i>—Present study deals with the photocatalytic degradation of low concentrations of VOCs like methanol, acetone, dichloromethane (DCM), benzene and toluene that are found in the pharmaceutical wastewater. The synthesized N doped TiO_2 were used. N doped TiO_2 with the reduced band gap energy of 2.91eV exhibited a complete degradation of the target VOCs in the presence of visible and sunlight. Kinetic study indicated that the rate of degradation of the target solvents was high in the presence of sunlight than when compared to visible irradiation. This may be due to the presence of the UV radiation in the natural sunlight. Irrespective of irradiation, the order of degradation of VOCs for the N doped TiO_2 was :benzene > toluene > DCM > methanol >acetone. For mixed pollutant condition, individual pollutants followed similar degradation pattern as single pollutant system. This study has proven the suitability of photocatalysis as an alternative polishing treatment for pharmaceutical wastewaters.</p>
N0026	<p>Investigating the Properties of Unbound Base Layer Containing Recycled Aggregates Hasan Taherkhani University of Zanjan, Iran</p> <p><i>Abstract</i>—Construction industry is among the major contributor to the production of solid wastes, which have become a main problem of societies in present days. Asphalt and cement concrete are among the main engineering materials which are wasted in vast quantities every year due to the reconstruction and demolition of highways and buildings. Recycling of these materials would be an efficient measure for protection of environment and preservation of natural resources. In this research, the viability of using crushed waste asphalt and cement concrete as a replacement of primary aggregate in unbound base layer of flexible pavements has been investigated. Different portions of the natural aggregate have been replaced with the recycled materials and the physical properties of each mixture have been investigated. The physical properties including sand equivalent, toughness, water absorption, density, soundness and compaction have been evaluated for the mixtures. The results show that, they have potential to be used in unbound base layer. Inclusion of any amount of recycled cement concrete in unbound aggregate results in a mixture which satisfy the minimum</p>

	required sand equivalent, toughness and soundness for unbound base.
N0029	<p>Application of Affective Engineering Method to Discuss the Social Function of Urban Water-Amenity Landscape Connie Yixuan Zhang, Tokuhisa Yoshida The Graduate School of Environment and Energy, Waseda University, Japan</p> <p><i>Abstract</i>—Nowadays, river conservancy and polluted/waste river reclamation had already become a significant task in city planning, as well as the re-construction of urban river channels. Different from the former river reclamation method which applies concrete bank construction, a new concept of “water-amenity park” is considered as a river-reconstruction method due to the concept of “affective engineering”. In this research, a systematic method based on affective engineering is developed to estimate urban water-amenity; 3 representative river-based water-amenity parks were selected to be estimated.</p>
N0030	<p>Wetland Community Center Design Based-on Environmental Contexts and Local Identity Teeritra Sirisawad, Piyakarn Teartisup, Songkiat Teartisup and Prapet Kerdsueb Faculty of Environment and Natural Resource Studies, Mahidol University, Thailand</p> <p><i>Abstract</i>—The objective of this research is finding the way to design architectures harmonized with the environmental contexts and represented local identity. This research emphasizes cognitive analysis and contemplation of the relationships between environmental factors and their effects to local design by using matrix analysis in order to find out the solutions in sustainable design by using documentary research and a site survey. In addition, this research focus on vernacular architectures which were designed related to and with respect to their environments in various dimensions, such as natural, social, cultural, and economic. Moreover, they contain environmental friendly concepts that appear on their physical design, detail design, and layout planning. The case study site is Huai Jorakaemak (HJK) non-hunting area, Northeastern of Thailand that the one of the RAMSAR list of Wetlands International Importance and Eastern Sarus Crane reintroduction site. The output can apply these concepts into the real architectural design process, so that architects, planners, and environmentalists can create sustainable architecture and a sustainable environment for local community development.</p>
N0031	<p>Optimization for Enzymatic Hydrolysis of Slaughter Blood by Monitoring of agitation Torque Hyeon Jeong Kim, Yong-Woo Jeon Korea Testing Laboratory, South Korea</p> <p><i>Abstract</i>—The traditional way for control of enzymatic hydrolysis of slaughter blood, as organic waste biomass, was just to use the empirical factors such as the change of color and smell. However this method had the many errors and the economic losses and ultimately, the decrease of the productivity occurred. So, this study proposed the control method of enzymatic hydrolysis of slaughter blood by monitoring of agitation torque. Enzymatic hydrolysis was performed at 50°C, 100 rpm for 4hr. The degraded protein and the produced amino acid were analyzed and it compared with agitation torque. The correlation of the amino acid-agitation torque was $R^2 = 0.9807$ and its equation was $y = 13.221x + 7.0357$. The correlation of the amino acid-agitation torque showed the suitability. This study judges that</p>

	<p>the correlation of the breakdown product of the high viscosity material-agitation torque has the high suitability and the equation can be using by the operating index in enzymatic hydrolysis.</p>
N3004	<p>Removal of Causative Factors for Sick Building Syndrome Using Air Plants Yasuhiko Koike and Yozo Mitarai Tokyo University of Agriculture, Atsugi, Kanagawa, Japan</p> <p><i>Abstract</i>—The ability of the air plant <i>Tillandsia brachycaulos</i> (a CAM plant) to remove one of the factors responsible (formaldehyde) for sick building syndrome was investigated. A C₃ plant (<i>Sparthiphyllum</i> Schott) was also used for comparison. Results showed that the <i>T. brachycaulos</i> reduced formaldehyde concentration more during the night than the day, and <i>Sparthiphyllum</i> reduced it more during the day than the night.</p>
N4002	<p>Bioremediation for Environmental Management Mahesh Arvind, P C Shreedaran, S R Ambika VIJAYA COLLEGE, BANGALORE UNIVERSITY, INDIA</p> <p><i>Abstract</i>—Environmental Management involves control of emissions and effluents into air, water or soil. Bioremediation makes a better effective approach possible. Microbes bioremediate the environment as they biodegrade the pollutants to obtain energy. Among aromatics, phenols and their derivatives form the principal group of environmental contaminants. Even at low levels they are toxic and they pose a threat to the biosphere because of their recalcitrant nature. We have isolated a microorganism which is capable of degrading phenolic compounds even at high concentrations. The available taxonomic evidences have suggested that the bacterial strain is a novel species within the genus <i>Arthrobacter</i>. The microorganism has the ability to degrade various aromatic pollutants. It has been hypothesized that biodegradation of aromatics in soil can be enhanced by introducing plants which exude phenolic compounds through their roots. There is evidence for root exudates enhancing the expression and activity of specific enzymes that degrade aromatics. Plants release 10-20% of total carbon during photosynthesis through their roots in the soil. Such root exudates are rich in biodegradable organic molecules that stimulate microbial growth. Plants provide nutrients necessary for the microbes to thrive, while microbes provide a healthier soil environment. Aromatic compounds in root exudates such as phenol have been shown to induce dioxygenase enzymes which initiate the biodegradation process. We have made an attempt to show that the enzymes involved in the metabolism of phenolic compounds in the soil bacteria isolated from the contaminated site are induced by the root exudates and the specific activities of the enzymes in the isolate is remarkably high compared to other microorganisms. Hence, bioremediation plays an increasingly important role as a result of new and emerging techniques and processes.</p>
B0011	<p>Degree of Pollution in Water and Sediments of As, Cd, Cr, Cu, Pb and Zn in Valsequillo Dam, Puebla City, México S. S. Morales-García, M. P. Jonathan, P. F. Rodríguez-Espinosa CMP+L – IPN</p> <p><i>Abstract</i>—The present study is to determine the concentration of metals, As in water and sediments in an semi-rural area with influence urban-industrial output in the south of</p>

	metropolitan area of Puebla City, Mexico at the Valsequillo Dam. The concentration of 7 trace elements (As, Cd, Cr, Cu, Pb, Ni and Zn) was determined in 11 water and sediment samples. The concentration pattern in water indicates low concentrations and is virtually observed in water. However, the sediments indicate high concentrations of these elements; which is confirmed by the higher values of Geoaccumulation Index (Igeo).
B0017	<p>Enhancement of Microbial Activity and Changes of Heavy Metal Distribution in Coastal sediment using Biostimulant Ball</p> <p>Bakthavachallam Subha, Young-Chae Song, Jung-Hui Woo Korea Maritime and Ocean University</p> <p><i>Abstract</i>—The coastal sediment nearby urban area is highly contaminated with organic matter and heavy metals due to ship transportation, industries, agricultural, and urban sources. The contaminated sediments can exert toxic effects on the benthic community and causing ecological risk to environment and eventually affected human health. This study investigated the effectiveness of slow release biostimulant ball (BSB) on enhancement of the stabilization of organic matter and heavy metals. The slow release BSB containing 1kg of uncontaminated dredged sediment mixed with 0.5M sulfate, 1M nitrate, 0.5M acetate and polysulfone (PS) coated BSB were prepared for this study. Different sizes of BSB varied from 1 to 5cm, distances between BSBs placed in the sediment from 1 to 10cm were used to estimate the changes of physicochemical parameters, heavy metal distribution in 15 days and 1 month time interval were performed. Pyrosequencing technique is used to determine the sediment microbial diversity and composition of benthic bacterial communities. The result showed that the application of different BSB sizes and the distances with variation of time interval were effectively reduced the physicochemical parameters such as CODMn, TS, VS and sulphate, and the heavy metal fractionation also changed by the variations of bioavailability and prospective mobility in the heavy metals. Exchangeable and metal oxide forms of heavy metals were changed in all analysed sample and stabilised forms of organic and residual also increased. Sequential extracted heavy metals (SEM)/acid volatile sulphide (AVS) concentration result also effectively changed with different BSB application. Slow release BSB which enhance the microbial activity, especially SRB such as desulfobacteraceae, desulfovibrio and desulfobacter sp. nearly 11.5% observed from sediment sample, which are metabolising the organic matter under anaerobic condition and it converted sulphate to sulphide. The sulphide bound to heavy metals and produced metal stabilised form. This result reveals that BSB application is effective for enhancement of organic pollutant stabilizations and reduction of the risk of heavy metals in coastal sediment.</p>

3:40pm-4:00pm

Coffee Break



Afternoon, August 7, 2014 (Thursday)**SESSION-3 (ICCCE 2014)****Venue: Royal Room 1**

Session Chair: Hong-Wen Wang

Time: 4:00pm-6:30pm

H0001	<p>Kinetic estimation for hydrodesulfurization of gas condensate on cobalt-molybdenum catalysts Porgar S. Aein jamshid. M National University of Sciences & Technology</p> <p><i>Abstract</i>—A mathematical modeling is performed to recover helium from fuel gas using polymeric membrane. This study implements a numerical model used in gas separation for hollow fiber membrane modules. Helium recovery from fuel gas is a process of great importance, but there is not yet simple and fast model applied to recover helium from multicomponent gas mixture. The numerical technique presented in this study shows reliable investigation of helium permeation with minimal effort in a membrane module. The presented model has been validated against available data from the literature. The results obtained by using presented model show good similarity with literature data. The model is extended to multistage membrane separation with different variation in permeate pressure. To our knowledge, this is first dependable numerical study for the recovery of helium from multicomponent gas mixture using countercurrent flow pattern and multistage membrane permeation. Operating conditions and membrane system structures are easy to optimize using this model due to its simplicity and algebraic nature.</p>
H0003	<p>Raman Spectra and Mechanical Properties of Graphene / Polypropylene Nanocomposites Siti Rohana Ahmad, Robert J Young and Ian A Kinloch The University of Manchester</p> <p><i>Abstract</i>—Graphene/Polypropylene nanocomposites were prepared at different filler loading and different average surface diameter 5, 15 and 25 μm of graphene nanoplatelets by using Haake Minilab mixer at 180oC and rotor speed 50rpm. Besides, Haake MiniJet is used to obtain dumbbell shape specimen. The effect of filler loading and average surface area of filler in PP/GnP composites on Raman spectrum and tensile properties were studied. Raman spectrum of graphene particles indicate three major spectrums such as D, G and 2D band. In addition, PP/GnP composites shows the Raman band shift quite strong by increasing GnP loading. In general, increased of graphene nanoplatelets loading have increased the value of modulus of elasticity, whereas tensile strength, elongation at break of composites reduced.</p>
H0004	<p>Synthesis and Application of Nanocarbon Materials Using Plasma Technology Fan Yang and Yongfeng Li China university of petroleum</p> <p><i>Abstract</i>—We report an environmentally friendly approach to the synthesis of ultrasmall monodispersed Au, Ag, Pt, Pd nanoparticles (NPs) and Pd, Au NPs functionalized oxidation carbon nanotubes (Pd-CNTs, Au-CNTs) by gas-liquid ionic palasma (GLIP) method.</p>

	<p>Furthermore, the synthesized nanocarbon hybrid materials were characterized by Transmission electron microscopy (TEM) and X-ray diffraction (XRD). The synthesized Pd-CNTs can be applicable for the catalyst in the Suzuki reaction, showing the good reactivity, stability and recyclability, and the Au-CNTs catalyst exhibited much more remarkable catalytic activity in the oxidation of various organosilanes by using water as the solvent compared with other organic solvents (for example THF, ethyl acetate, and acetone), which is very important for organic synthesis from both the standpoint of practical reasons and an economic perspective.</p>
H0006	<p>Influence of the Preparation Methods on the Character of the Co-Mo/USY Catalyst Khoirina Dwi Nugrahaningtyas, Yuniawan Hidayat, Patiha, Nina Prihastuti, Brigita Yelvi Perwiraningtyas and Riza Umami Nur Khasanah Sebelas Maret University</p> <p><i>Abstract</i>—In this research, the non-sulfide catalysts Co-Mo/USY have been prepared by three different methods. Co-impregnation and sequential impregnation method is performed. A variation of concentration of Co metal precursor is made. Phase of synthesized materials and their composition were characterized with X-ray diffraction. Effect of substitution of cobalt and molybdenum together on the metal content and acidity were also investigated.</p>
H0007	<p>Synthesis 3,4-dimethoxybenzyl-2,4-dihydroxyphenyl ketone from Eugenol Matsjeh S., Anwar C., Sholikhah E.N., Alimuddin A.A. Gadjah mada University</p> <p><i>Abstract</i>—The main content of clove oil is eugenol, amounting to 80-90%. The aims this study to utilize eugenol from clove leave oil as raw material in the synthesis of 3,4-dimethoxybenzyl-2',4'-dihydroxyphenyl ketone with 3,4-dimethoxybenzylcyanide as intermediate compound. Converting eugenol into 3, 4-dimethoxybenzyl cyanide via several stages of reactions. Methylation of eugenol using dimethylsulphate and NaOH as catalyst was produced methyleugenol as much as 89.78% with a purity of 93.6%. Isomerization of methyleugenol using alkaline potassium tertiary butoxide (t-BuOK) in the medium dimethyl sulfoxide (DMSO) was resulted in 87.24 % yield methylisoeugenol with a purity of 88.89%. Methylisoeugenol was oxydated using potassium dichromate (K₂Cr₂O₇) in a phase transfer catalyst system (PTC) by Polysorbate 80 into a 3,4- dimethoxybenzaldehyde as much as 85.36 % with a purity 83.46 %. Reduction of 3,4-dimethoxybenzaldehyde using sodium borohidrat (NaBH₄) was produced 3,4- dimethoxybenzylalcohol as much as 98 % with a purity 100 % level. The 3,4-dimethoxybenzylalcohol was halogenated using SOCl₂ was produced 3,4-dimethoxybenzylchloride which reacted further with sodium cyanide to produce 3,4-dimethoxybenzylcyanide as much as 89.5 % with a purity 99.24%. The acylation reaction of acid 3,4-dimethoxyphenylacetic acid with resorcinol to 3,4-dimethoxybenzyl-2,4-dihydroxyphenyl ketone obtained is a white a solid product having a melting point of 171-172OC. Rendamen generated from this experiment by 76%.</p>
H0008	<p>Effect of Particle Loading, Temperature and Surface Treatment on Moisture Absorption of CFB Fly Ash Reinforced Thermoset Composite Sakura Onishi University of the Philippines-Diliman</p>

	<p><i>Abstract</i>—Coal combustion is widely used in the Philippines and is a major contributor to power generation due to its low cost; however, it produces wastes such as emissions and fly ash (FA). Traditional fuel combustion uses pulverized coal (PC) boilers while modern technology involves the use of circulated fluidized bed (CFB) boilers which produce less emissions and are more efficient. However, the fly ash produced from CFB combustion has limited application to the construction industry as opposed to PC FA which is used as an additive to the cement industry. In this study, CFB FA is used as filler and the matrix is orthophthalic unsaturated polyester resin. Moisture absorption study is conducted on the composite by immersing in water and constant weighing of samples at specified time intervals. Percent weight gain is reported. Particle loading and sorption temperatures are varied and their effects are observed. With the increase in particle loading, absorbed moisture increases while diffusivity decreases. Increase in temperature leads to an increase in moisture absorption and diffusivity. The CFB FA is also treated using coconut oil which is composed of saturated fatty acids (majority of which is lauric oil). Coconut oil serves as a non-coupling type surface modifier. Untreated and treated fly ash samples are characterized by X-Ray Fluorescence (XRF), Scanning Electron Microscopy (SEM) and Fourier Transform Infrared Spectroscopy (FTIR). The effect of treatment to composite moisture absorption at 80oC (different particle loading) is observed and it is found to decrease moisture absorption.</p>
H0011	<p>Optimization of Subcritical Ethanol Extraction for Xanthone from Mangosteen Pericarp Nuttawan Yoswathana and Mohammad Naghi Eshtiaghi Mahidol University</p> <p><i>Abstract</i>—Mangosteen pericarp has been used for long time as traditional medicine. One of main active ingredient in mangosteen pericarp is xanthone. Xanthone has remarkable effects on cardiovascular, antiviral, and anti-inflammatory. Subcritical ethanol extraction (Sc-ethanol) was employed to extract xanthone from dried mangosteen pericarp and compared with maceration and soxhlet extraction. The Sc-ethanol was applied by various temperature (80, 120 and 160oC), ethanol concentration (50, 72.5 and 95%) and extraction time (10, 20 and 30 min.) for 1:20 of sample to solvent ratio. The Box-Behnken design was applied to investigate the optimum condition of Sc-ethanol extraction. The optimum conditions from Box-Behnken design to obtain the highest xanthone were determined at the optimum conditions as following; temperature 160oC, extraction time 30 min in 95% ethanol. The results presented that for maceration, soxhlet and Sc-ethanol extractions in 0.5 h, the extracted xanthoness were 28.31, 31.26 and 57.42 mg/g of dried mangosteen pericarp respectively.</p>
H0014	<p>The Antioxidant Activity from Hydroquinone Derivatives by The Synthesis of Cinnamomium Verum J.Presl Bark's Extracted Uthumporn Kankeaw and Ekkalak Masong Maejo University</p> <p><i>Abstract</i>—Hydroquinone is polyphenol compound which was used as antioxidant. In this study, the hydroquinone was synthesized via aldol condensation between 1, 4-cyclohexanedione and cinnamaldehyde which was extracted from the bark of Cinnamomum verum J. Presl by stream distillation and using LiCl as a catalyst in pyridine. The hydroquinone derivatives showed the dark brown crystal with Rf 0.50 (hexane: ethyl</p>

	<p>acetate: methanol 5: 4: 1). These products were characterized by FT-IR spectroscopy which showed spectrum at 3300 - 3500 cm⁻¹ (O-H stretching), 3025 cm⁻¹ (C-H stretching of aromatic), 1660 cm⁻¹ (C=C stretching of alkene) and 1450, 1502 cm⁻¹ (C=C stretching of aromatic), respectively. The characterization by ¹H-NMR spectroscopy expressed ¹H-NMR (ppm): 9.70 (d, 2H, OH), 6.35-7.56 (m, 8H, aromatic protons) and 3.50 (d, 2H, -CH₂-), respectively. The synthesized product was tested the antioxidant activity by using DPPH radical scavenging assay and the IC₅₀ was done by spectrophotometric assay method compared with standard gallic acid. The antioxidant activity revealed that IC₅₀ were 14.15 ppm.</p>
H0015	<p>Neural Network-based Model for Joint Prediction of the Newtonian and NonNewtonian Viscosities of Black Liquor Sunday Alabi and Chris Williamson University of Uyo</p> <p><i>Abstract</i>—Most of the existing models for describing black liquor (BL) viscosity behaviours are applicable over limited ranges of process conditions, whereas BL exhibits varied viscosity behaviours, Newtonian and nonNewtonian, over a wide range of process conditions. These limited-range models, resulting from different bases, may suffer predictions continuity over such wide ranges of conditions. In this paper, attempt was made to jointly model the Newtonian and nonNewtonian viscosity behaviours of literature liquor using artificial neural network (ANN) paradigm. A generalized multilayer feedforward network with 7 hidden neurons and 1 output neuron, having R²=1.0 and maximum absolute relative error of ~8% between the actual and predicted data was obtained. Although a model with a higher accuracy is desirable, the proposed single network seems to be a reasonable alternative to the use of the limited-range multiple models for the purposes of describing black liquor viscosity behaviour over a wide range of practical conditions.</p>
H0017	<p>Experimental studies on Soxhlet extraction of Crotalaria Juncea oil using cylindrical and annular packed beds Ratna Dutta, Ujjaini Sarkar and Alakananda Mukherjee Jadavpur University</p> <p><i>Abstract</i>—An innovative method for the extraction of vegetable oils, from Crotalaria Juncea seeds, was developed, using suitable solvent in a modified Soxhlet apparatus. The present study describes the general extraction mechanism in modified Soxhlet apparatus and change of mass transfer extent within fixed duration with the change of the shape of packed bed used as a seed holder. Regular cylindrical and annular shaped seed holders were used along with irregular (elliptical) shaped seed holder. Maximization of mass transfer parameter in the up flow regime gave considerable increase in the yield of oil production. Use of annular seed holder gives maximum driving force for the up flow regime and higher mass transfer area, hence improved yield.</p>
H0018	<p>Effect of Surface Treatment and Particle Loading on the Mechanical Properties of CFB Fly Ash Reinforced Thermoset Composite Joy Erika Reyes University of the Philippines – Diliman</p>

	<p><i>Abstract</i>—Circulating fluidized bed (CFB) boilers, a relatively new and more environment-friendly technology, produce fly ash with limited use on the construction industry. This study focused on the use of CFB fly ash as a filler material in thermoset composites. CFB fly ash was treated with coconut oil using the procedure used by Yao et al. (2013). The fly ash was applied to orthophthalic unsaturated polyester resin at different particle loading. The untreated and treated fly ash were characterized by scanning electron microscopy (SEM), Fourier transform infrared spectroscopy (FTIR), and X-ray fluorescence (XRF). Tensile and flexural properties of composites with varying fly ash loading were measured using universal testing machine (UTM). The tensile and flexural modulus increased while the tensile and flexural decreased with increasing particle loading. Improvement in the mechanical properties of the composites with treated fly ash relative to the ones with the untreated was observed. This is caused by enhanced particle-matrix adhesion and improved particle dispersion. Moisture absorption caused a decline in the flexural properties of the composites. Water acted as a plasticizer so the matrix weakened upon immersion.</p>
H0020	<p>Adsorptive Recovery of Au(III) from Aqueous Solution using Modified Bagasse Biosorbent Theeraporn Rubcumintara Mahidol University</p> <p><i>Abstract</i>—The recovery of Au (III) from aqueous chloride solutions onto modified bagasse biosorbent was investigated. The parameters for biosorbent preparation as well as gold recovery were studied in detail. It was found that 99.8 % of sugarcane bagasse could be modified as biosorbent having better physical properties for adsorption. The solution pH, sorbent dosage, initial Au (III) concentration and temperature were the studied variables that affect the efficiency of gold recovery as well as adsorption behavior. The efficiency of 99% for Au (III) recovery was obtained under the following conditions: 25 mg sorbent, 25 ml of 25-500 mg/L Au (III), pH 2, 150 rpm, 4 h and 25°C. The 99% of gold recovery still obtained in only 1 h or less with the increasing of dosage or temperature. The gold adsorption in this study was best fitted with Langmuir isotherm model and the maximum capacity for gold loading was determined to be 1497.5 mg/g or 7.6 mmol/g. The adsorption kinetics was also evaluated in terms of the pseudo first-order and pseudo second-order kinetic models. The high activation energy of 45.8 KJ/mol was estimated which represents a chemisorption process. The adsorption mechanism in this study is clarified to be the oxidation of hydroxyl to carbonyl in biosorbent and reduction of trivalent gold ions to metallic gold simultaneously on biosorbent surface. The results from ORP measurement, FT-IR and EDS spectra including SEM images were the supported evidence for this adsorption mechanism. The modified bagasse biosorbent therefore has potential in gold recovery process.</p>
H0023	<p>Phase-field simulation of polymer crystallization during cooling stage Xiaodong Wang and Jie Ouyang Northwestern Polytechnical University</p> <p><i>Abstract</i>—The phase-field method has been developed to simulate the crystal growth of semi-crystalline polymer during cooling stage by considering the effect of temperature on the nucleation density. It assumes that the nucleation mechanism is heterogeneous, and the relationship between the nucleation density and the temperature is described by an empirical function. The crystal growth after nucleation is modeled by a modified phase-field method</p>

	<p>which uses a non-conserved crystal order parameter to indicate whether the material is solid or liquid. By using the proposed model, the influence of cooling rate on the crystallization morphologies and crystallization kinetics has been investigated.</p>
H0024	<p>Rapid hydrogen generation from aluminum-water system using synthesized aluminum hydroxide catalyst Ming-Ssu Chin and Hong-Wen Wang Chung-Yuan Christian University</p> <p><i>Abstract</i>—Catalytic effect of Al (OH)₃ on the hydrogen generation from Al/water system is evaluated. The Al (OH)₃ powders are synthesized from various molar ratios of Al(NO₃)₃ : NaOH = 1:3 ~ 1:5. It was found that the Al (OH)₃ catalyst derived from the ratio Al (NO₃)₃ : NaOH = 1:3.5~1:4 in an ice bath exhibits the best catalytic effect and exerts the highest hydrogen generation rate. Over 95% yield of hydrogen from a 3 g Al/50 ml water system (with 15 g Al (OH)₃ and pH=12) can be generated within 100 s. That is, by using specially synthesized Al (OH)₃ catalyst at a Al:Al (OH)₃:H₂O=3:15:50 weight ratio, very rapid hydrogen generation rate (~667 ml/g Al min), without using any alloying elements or extreme corrosive condition, can be realized.</p>
H0026	<p>SiO₂ Reinforcement of Mechanical Properties for Ebonite from Natural Rubber Nattawat Winya and Narupon Pittayaprasertkul Defence Technology Institute (Public Organisation)</p> <p><i>Abstract</i>—To reinforce the mechanical properties of the rubber compounds, the silica was added. In this work, we measured the tensile strength and hardness of the compounds, in which the amounts of sulphur and silica were varied from 45 to 60 phr and 5 to 15 phr, respectively. The experimental results showed that the addition of 10 phr silica provides the maximum tensile strength and hardness. However for the amount of silica higher than 10 phr, the tensile strength tended to decrease. We also observe that the amount of sulphur 60 phr with 10 phr silica gives the maximum hardness (73 shore D).</p>

6:50pm	Dinner
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August 8, 2014 (Friday)

One day tour



**Please note that one day tour is for who registered for it.
(Please note that the departure time will be 9:00am, please kindly arrive at the hotel before 9:00am,
we will depart on time. Thank you for your cooperation!)
Welcome to register for one day tour.**

Conferences ending, thanks !

Conference venue

Hotel Royal

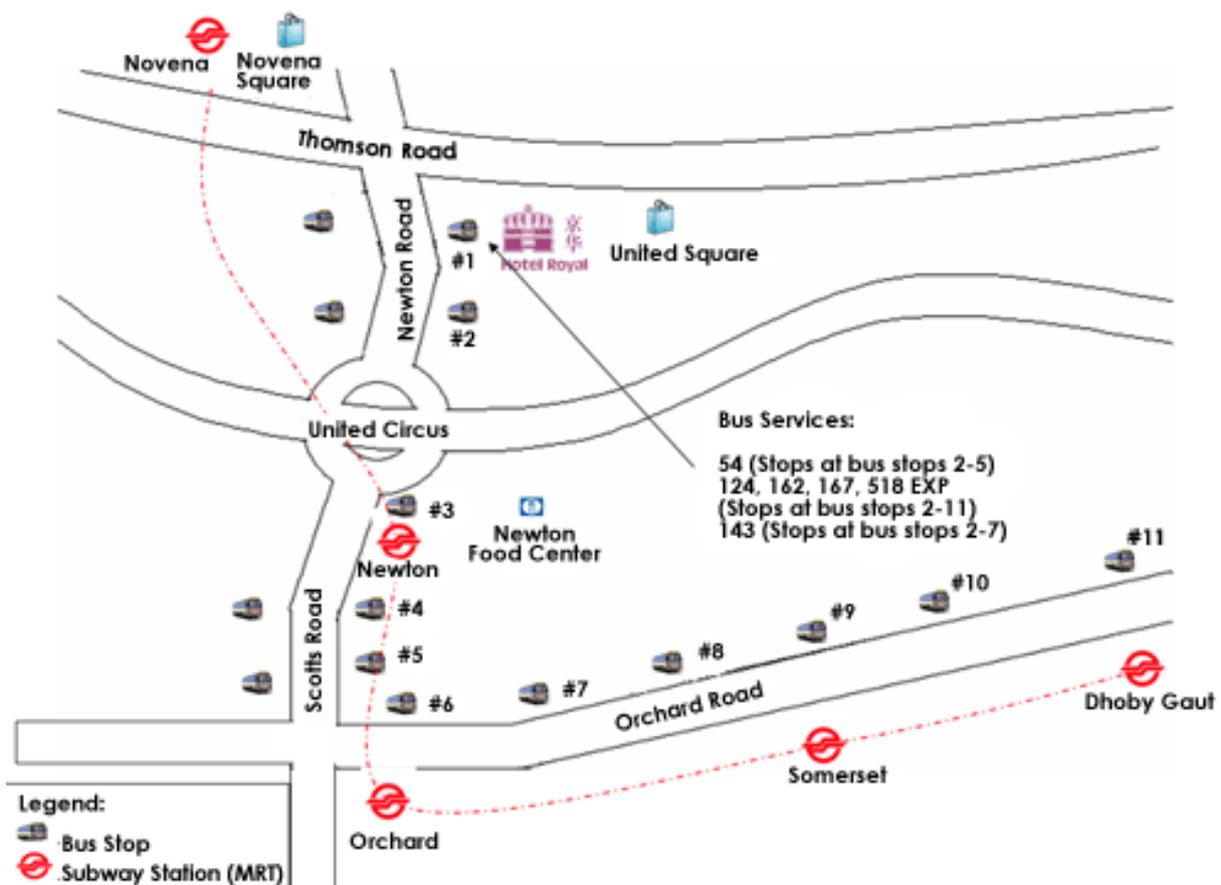
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Contact Method: Please download the [Reservation Form](#) and send the filled form to Benjamin@hotelroyal.com.sg to order a room.

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5 minute drive to Orchard Road, shopping and entertainment paradise of Singapore. Within walking distance to 2 MRT stations (subway/underground, especially Novena MRT). Stone's throw from Newton Food Centre, where you can get excellent local food at very reasonable prices. Easy access to the National University of Singapore, Nanyang Technological University and Singapore Management University. Minutes away from Little India in Serangoon Road.

APCBEEES FORTHCOMING CONFERENCES

<http://www.cbees.org/events/>

DATE	NAME		PUBLICATION
Oct 29-30, 2014 California, USA	ICBEC 2014	2014 5th International Conference on Biology, Environment and Chemistry (ICBEC 2014) www.icbec.org/	Volume of Journal (IPCBEE, ISSN: 2010-4618)
	ICPBS 2014	2014 2nd International Conference on Pharmaceutical and Biological Sciences (ICPBS 2014) www.icpbs.com/	Journal of Medical and Bioengineering (JOMB, ISSN: 2301-3796)
	ICSEA 2014	2014 2nd International Conference on Sustainable Environment and Agriculture (ICSEA 2014) www.icsea.org/	Volume of Journal (IPCBEE, ISSN: 2010-4618)
Nov 12-13, 2014 Auckland, New Zealand	ICFAS 2014	2014 2nd International Conference on Food and Agricultural Sciences (ICFAS 2014) http://www.icfas.org/	Volume of Journal (IPCBEE, ISSN: 2010-4618)
	ICMEB 2014	2014 2nd International Conference on Medical, Environmental and Bio-technology (ICMEB 2014) http://www.icmeb.org/	Journal of Medical and Bioengineering (JOMB, ISSN: 2301-3796)
	ICEPP 2014	2014 2nd International Conference on Environment Pollution and Prevention (ICEPP 2014) http://www.icepp.org/	International Journal of Environmental Science and Development (IJESD, ISSN:2010-0264)
Nov 29-30, 2014 Mauritius	ICCEN 2014	2014 3rd International Conference on Civil Engineering (ICCEN 2014) www.iccen.org/	Volume of Journal (IPCBEE, ISSN: 2010-4618)
	ICECB 2014	2014 3rd International Conference on Environment, Chemistry and Biology (ICECB 2014) www.icecb.org/	Volume of Journal (IPCBEE, ISSN: 2010-4618)
	ICFSH 2014	2014 International Conference on Food Sciences and Health (ICFSH 2014) www.icfsh.org/	Journal of Advanced Agricultural Technologies (JOAAT ISSN: 2301-3737)
Dec. 13-14, 2014, Kuala Lumpur, Malaysia	ICESR 2014	2014 International Conference on Environmental Systems Research (ICESR 2014) www.icesr.org	APCBEE Procedia (Journal under Elsevier, ISSN: 2212-6708)
	ICLSE 2014	2014 3rd International Conference on Life Science and Engineering (ICLSE 2014) www.iclse.org	Journal of Life Sciences and Technologies (JOLST, ISSN: 2301-3672)

2014 APCBEES SINGAPORE CONFERENCES

	ICFB 2014	2014 3rd International Conference on Future Bioengineering (ICFB 2014) www.icfb.org	Volume of Journal (IPCBEES, ISSN: 2010-4618)
Dec. 27-28, 2014, Phuket, Thailand	ICABT 2014	2014 2nd International Conference on Agriculture and Biotechnology (ICABT 2014) www.icabt.org	Volume of Journal (IPCBEES, ISSN: 2010-4618)
	ICESB 2014	2014 4th International Conference on Environment Science and Biotechnology (ICESB 2014) www.icesb.org	APCBEE Procedia (Journal under Elsevier, ISSN: 2212-6708)
	ICCSE 2014	2014 3rd International Conference on Chemical Science and Engineering (ICCSE 2014) www.iccse.org	International Journal of Chemical Engineering and Applications (IJCEA, ISSN:2010-0221)
Jan. 10-11, 15, 2014, Dubai, UAE	ICEBE 2015	The aim objective of the 2015 International Conference on Environment and Bio-Engineering http://www.icebe.org/	APCBEE Procedia (Journal under Elsevier, ISSN: 2212-6708)
	ICPPE 2015	2015 2nd International Conference on Petroleum and Petrochemical Engineering http://www.icppe.org/	International Journal of Environmental Science and Development (IJESD, ISSN:2010-0264)
	ICGCE 2015	2015 2nd International Conference on Geological and Civil Engineering http://www.icgce.org/	Volume of Journal (IPCBEES, ISSN: 2010-4618)
Jan. 24-25, 2015, Taipei, Taiwan	ICFEE 2015	2015 5th International Conference on Future Environment and Energy http://www.icfee.org/	Journal of Clean Energy Technologies (JOCET, ISSN: 1793-821X)
	ICBBB 2015	2015 5th International Conference on Bioscience, Biochemistry and Bioinformatics http://www.icbbb.org/	Volume of Journal (IPCBEES, ISSN: 2010-4618)
	ICCCH 2015	2015 4th International Conference on Climate Change and Humanity http://www.iccch.org/	APCBEE Procedia (Journal under Elsevier, ISSN: 2212-6708)
Feb. 08-09, 2015, Rangoon, Burma	ICOG E 2015	2015 International Conference on Geological Engineering http://www.icoge.org/	International Journal of Geological Engineering (IJGE, ISSN: 2301-3818)
	ICERE 2015	2015 International Conference on Environment and Renewable Energy http://www.icere.org/	Journal of Environmental Science and Development (IJESD, ISSN:2010-0264)
	ICFES 2015	2015 International Conference on Food and Environmental Sciences http://www.icfes.org/	International Journal of Food Engineering (IJFE, ISSN: 2301-3664)
Feb. 14-15, 2015, Amsterdam, Netherlands	ICESD 2015	2015 6th International Conference on Environmental Science and Development http://www.icesd.org/	Journal of Environmental Science and Development (IJESD, ISSN:2010-0264)

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	ICCCP 2015	2015 5th International Conference on Chemistry and Chemical Process http://www.cbees.org/events/	International Journal of Chemical Engineering and Applications (IJCEA, ISSN:2010-0221)
	ICCGE 2015	2015 4th International Conference on Clean and Green Energy http://www.iccge.org/	Journal of Clean Energy Technologies (JOCET, ISSN: 1793-821X)
Mar. 10-11, 2015, Seoul, South Korea	ICFEB 2015	2015 6th International Conference on Food Engineering and Biotechnology http://www.icfeb.org/	International Journal of Food Engineering (IJFE, ISSN: 2301-3664); Journal of Medical and Bioengineering (JOMB, ISSN: 2301-3796)
	ICBET 2015	2015 5th International Conference on Biomedical Engineering and Technology http://www.icbet.org/	Volume of Journal (IPCBE, ISSN: 2010-4618)
	ICEII 2015	2015 5th International Conference on Environment and Industrial Innovation http://www.iceii.org/	International Journal of Innovation, Management and Technology (IJIMT, ISSN: 2010-0248); International Journal of Environmental Science and Development (IJESD, ISSN:2010-0264)
Mar. 19-20, 2015, Florence, Italy	ICCBS 2015	2015 2nd International Conference on Chemical and Biological Sciences http://www.iccbs.org/	International Journal of Chemical Engineering and Applications (IJCEA, ISSN:2010-0221); International Journal of Bioscience, Biochemistry and Bioinformatics (IJBBB, ISSN: 2010-3638)
	ICCUE 2015	2015 2nd International Conference on Civil and Urban Engineering http://www.iccue.org/	International Journal of Engineering and Technology (IJET, ISSN:1793-8236)
	ICFSN 2015	2015 2nd International Conference on Food Security and Nutrition http://www.icfsn.org/	Volume of Journal (IPCBE, ISSN: 2010-4618)

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Presentation Tracking Contents

SESSION-1 (ICEAE 2014, ICCCE 2014, ICGES 2014) Venue: Royal Room 1 Session Chair: Prof. Khaled M. Bali Time: 10:30am-12:20pm			SESSION-2 (ICEAE 2014, ICCCE 2014, ICGES 2014) Venue: Royal Room 1 Session Chair: Prof. Chan Jin Park Time: 1:30pm-3:40pm		
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SESSION-3 (ICCCE 2014) Venue: Royal Room 1 Session Chair: Hong-Wen Wang Time: 4:00pm-6:30pm			<p style="text-align: center;">Attention Please:</p> <ol style="list-style-type: none"> 1. Each presenter has about ten minutes (including question and answer time) for answering the question, please control your presentation time. 2. Please kindly prepare your PPT or poster according to your research and the time regulation before the conference and take it to the conference site. 3. Please arrive at the conference room (Royal Room 1) when your session begins. 4. Hoping you have a good time during the conference. 		
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