

# 2014 CBEES PENANG MALAYSIA CONFERENCES SCHEDULE

2014 4th International Conference on Environment and Industrial Innovation (ICEII 2014)  
2014 5th International Conference on Food Engineering and Biotechnology (ICFEB 2014)  
2014 4th International Conference on Biomedical Engineering and Technology (ICBET 2014)

**Penang, Malaysia**

**The Gurney Resort Hotel & Residences Penang, Malaysia**

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**March 12-14, 2014**

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# **Welcome to CBEES Conferences in Penang, Malaysia, March 12-14, 2014**

## **Instructions for Oral Presentations *Only on March 13, 2014.***

### **Devices Provided by the Conference Organizer:**

Laptops (with MS-Office & Adobe Reader)

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 Session: about 8 Minutes of Presentation 2 Minutes of Q&A

Keynote Speech: 25 Minutes of Presentation 5 Minutes of Q&A

## **The poster presentation *only on March 13, 2014.***

You should take the poster presentation to our conference specialist.

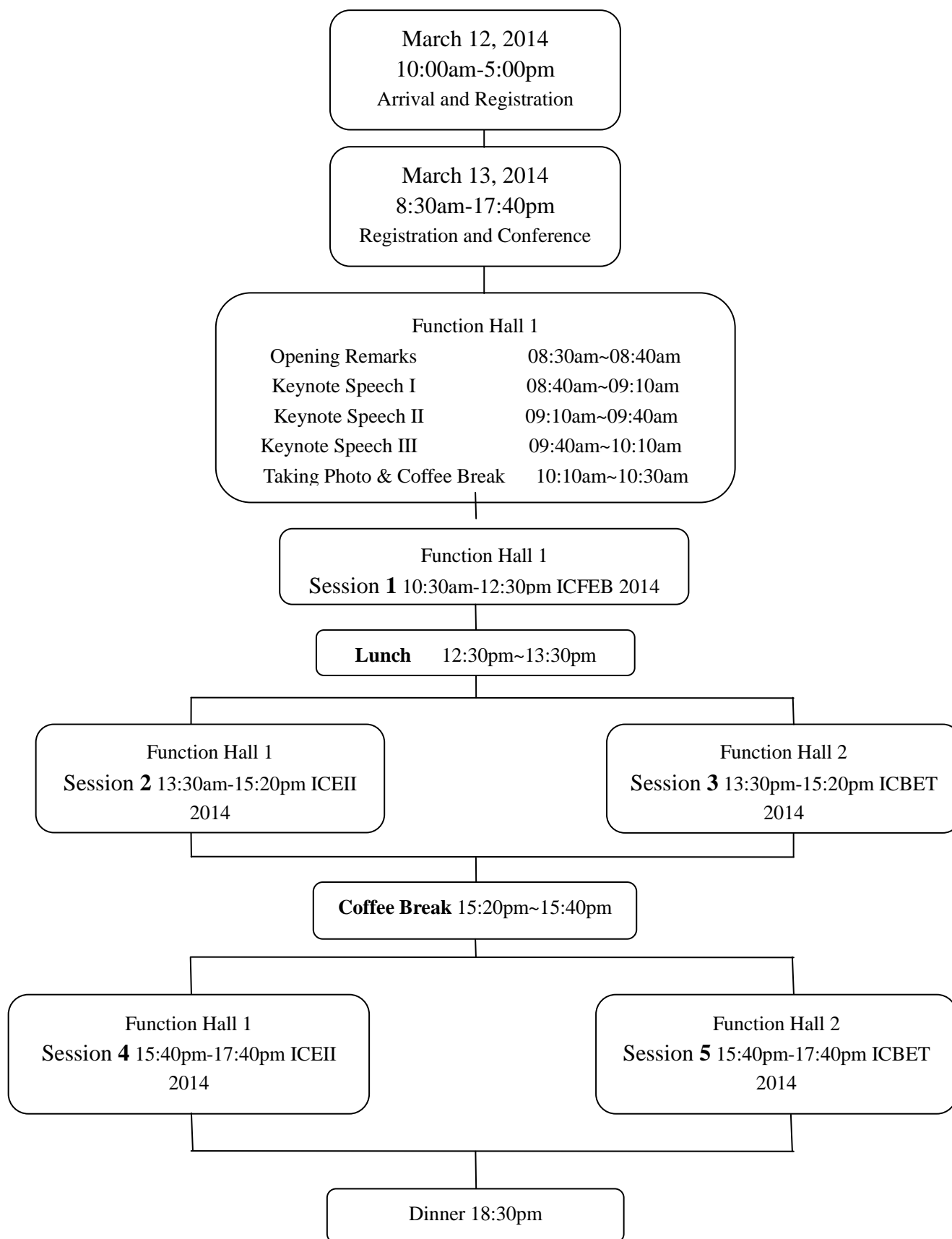
### **Conference website and Secretariat Contact:**

ICEII 2014: [www.iceii.org](http://www.iceii.org) [iceii@cbees.org](mailto:iceii@cbees.org)

ICFEB 2014: [www.icfeb.org](http://www.icfeb.org) [icfeb@cbees.org](mailto:icfeb@cbees.org)

ICBET 2014: [www.icbet.org](http://www.icbet.org) [icbet@cbees.org](mailto:icbet@cbees.org)

# Conference Program for March 12-13, 2014



## Please pay attention:

- (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 session. The Certificate for Excellent Papers will be awarded after each session ends in the venue on March 13, 2014.
- (4) If you want to take notes, please turn to the last page of the program.




**Day 1: —————→ March 12, 2014 (Wednesday) {Registration day}**

Lobby on 2<sup>nd</sup> Floor

<b>10: 00am – 12: 30pm</b>	Arrival and onsite Registration only
<b>1: 30pm – 5: 00pm</b>	Certificate for Participation can be collected at the registration counter

**Day 2: —————→ March 13, 2014 (Thursday) {Presentation day}**

Venue: Function Hall 1

<b>08:30am- 08:40am</b>	<b>Opening Remarks</b> Prof. Byoung Ryong Jeong Gyeongsang National University, Korea	
<b>08:40am-09:10am</b>	<b>Keynote Speaker I</b> Dr. Hj Ismail Abustan Professor of Water Engineering School of Civil Engineering, Universiti Sains Malaysia. The title of his presentation is “River Bank Filtration: Abstraction of Potable Water using Artificial Barrier.”	
<b>09:10am – 09:40am</b>	<b>Keynote Speaker II</b> Prof. Byoung Ryong Jeong Gyeongsang National University, Korea The title of his presentation is “The value of horticultural plants in our living”	
<b>09:40am – 10:10am</b>	<b>Keynote Speaker III</b> Associate Prof. Lazim Abdullah School of Informatics and Applied Mathematics, University Malaysia Terengganu, Malaysia The title of his presentation is “Some Fuzzy Set Based Methods for Health Sciences: An Overview of Applications.”	
<b>10:10am-10:30am</b>	<b>Taking Photo and Coffee Break</b>	

**Morning, March 13, 2014****SESSION – 1 (ICFEB 2014)**

Venue: Function Hall 1

Session Chair: Prof. Byoung Ryong Jeong

**Time: 10:30am – 12:30pm for 11 presentations**

N3012	<p>16s rRNA gene sequencing and analysis of marine bacterium for Biomedical Applications C. Chellaram, R. Sivakumar, <b>G. Murugaboopathi</b>, T. P. Anand, A. A. John, M. M. Praveen</p> <p>Abstract—A marine epibiotic bacterial strain A4 was isolated from the coral <i>Subergorgia suberosa</i> from Tuticorin coast, Gulf of Mannar region, south east coast of India. Phylogenetic identification based on comparative sequence analysis of 16S rRNA gene indicated that the stain A4 fell under the genera <i>Marinobacterium</i>. The initial screening using agar overlay method the <i>Marinobacterium</i> strain A4 was found to exhibit broad spectral activity against <i>Escherichia coli</i> and <i>Candida albicans</i>. The highest zones of 8mm and 9mm were noted against the strain <i>Escherichia coli</i> and <i>Candida albicans</i> respectively. The culture broth was ethanol precipitated, and the activity was noted in the precipitate (crude extract). This present study highlights the importance of epibiotic bacteria associated with corals as a potential source for the discovery of novel antimicrobial and other natural products.</p>
N3014	<p>Determination of Antioxidant Activity for Seven Types of Macroalgae <b>A.W. Sarini</b>, H. Nor' Aishah and N. Mohd Zaini</p> <p>Abstract—The present study was conducted to evaluate the antioxidant activity of seven types of macroalgae extract from Malaysia. The extract was prepared with methanol respectively. 1,1-diphenyl-2-picrylhydrazyl (DPPH) assay and reducing power were used to study their antioxidant activity while total phenolic content was measured using Folic-Ciocalteu method. The macroalgae extracts were compared with commercial antioxidant, butylated hydroxyanisole (BHA). Total phenolic content of macroalgae extracts were expressed in Gallic acid equivalent, mg/L. <i>Caulerpa racemosa</i> showed the highest total phenolic content with the value of 19.711 mgGAE/L <math>\pm</math> 0.2546. In DPPH free radical scavenging activity assay, <i>Turbinaria conoides</i> showed the highest scavenging activity in 50 mg/ml extract concentration with the value of 73.57 % <math>\pm</math> 0.5739 compared to another macroalgae extracts. The IC50 value of <i>Turbinaria conoides</i> extracts is 2.46 mg/ml. Low IC50 value will indicates the strong ability of the macroalgae extract to act as a DPPH scavenger. <i>Caulerpa lentillifera</i> showed the highest absorbance reading in 50 mg/ml extract concentration with the value of 0.603 <math>\pm</math> 0.0015 in reducing power assay. Increased absorbance of the reaction mixture indicates greater reducing power.</p>
N2009	<p>Electrochemical Urea Biosensor: unique polyaniline grafted polymer matrix for Urease Immobilization Joyati Das and <b>Priyabrata Sarkar</b></p>

	<p>Abstract—Urea, [CO (NH<sub>2</sub>)<sub>2</sub>] is an end product of nitrogen metabolism and is widely distributed in nature. Its analysis is of considerable interest in clinical, agricultural and food chemistry. In this study, we report a construction and analysis of biosensor using polyaniline (PANI) grafted polymer matrix. We used this unique PANI grafted polymer matrix for urease immobilization on the working electrode of a three-electrode electrochemical cell. The resulting biomatrix was characterized with scanning electron microscopy (SEM), cyclic voltammetry (CV), differential pulse voltammetry (DPV) and electrochemical impedance spectroscopy (EIS). The porous structure of the PANI hydrogel favored high density immobilization of the enzyme and the penetration of water-soluble molecules. This helped catalyze redox reaction and hence the detection of urea in the nanomolar concentrations. The sensor could be used for detection of urea in environmental, food and medical diagnostics.</p>
N2010	<p>Development of a Novel Biosensor for Detection of Fish Freshness  <b>Sarani Sen and Priyabrata Sarkar</b></p> <p>Abstract—The development of a sensor for purine derivatives such as xanthine (3,7-dihydro-purine-2,6-dione) and hypoxanthine is of medical and biological importance. The level of xanthine and hypoxanthine in food are generally used as index for evaluating meat or fish freshness. We proposed to develop a xanthine biosensor based on the fabrication of commercial xanthine oxidase enzyme onto the novel nanobiocomposite material. Thus the electrochemical sensing could take place without the need of external electron-transfer mediators. A supportive polymeric matrix of poly(o-phenylenediamine) has been introduced to entrap the enzyme onto the glassy carbon electrode surface and gold nanoparticles (Au-np) helped enhance the enzyme activity without altering its native structure. Carboxylated multi wall carbon nanotube (f-MWCNT) has been electrodeposited to increase the conductivity and sensitivity of the sensor. The modified electrode surface has been characterized by field emission surface electron microscopy (FESEM), atomic force microscopy (AFM), electrochemical impedance spectroscopy (EIS) etc. Cyclic voltammogram [CV, Fig 1(A)] showed that xanthine was oxidized at the potential of 650 to 800mV onto the electrode surface depending on the pH of reaction mixture, scan rate and xanthine concentration. Differential pulse voltametric [DPV, Fig 1 (B)] study showed that the newly developed nanobiocomposite [Fig 1 (C)] could be useful for detection of xanthine in the range of 1-35 <math>\mu</math>M with regression coefficient of 0.994. The biosensor lost its activity 10% from its initial activity after use of 100 times over a period of 2 months. Spoilage of fish could be monitored by registering the concentration of xanthine with storage time.</p>
N3007	<p>Genetics Polymorphism In BF2 Gene Between Red Jungle Fowl And Different Poultry Species  <b>Sanjeev Kumar Shukla</b>, Jose Mathew, Satyendra kumar, Deepak Sharma</p> <p>Abstract—We have amplified, cloned and sequenced the complete CDS of BF2 gene in red jungle fowl using chicken specific primers. Complete CDS was comprised of 1033 bp and coded for 21 amino acids of signal peptide and 323 amino acids of mature peptide, which was comprised of <math>\alpha</math>1, <math>\alpha</math>2 and <math>\alpha</math>3 domains, transmembrane domain, cytoplasmic domain I and cytoplasmic domain III, while the cytoplasmic domain II was absent in comparison to the chicken BF2 mature peptide. Among the extracellular domains, <math>\alpha</math>1 and <math>\alpha</math>2 domains were</p>

	<p>highly polymorphic (27.27 % and 26.37 %) as compared to <math>\alpha 3</math> domain (8.79 %) for amino acid sequences. Signal peptide as well as trans-membrane domain also exhibited sizable polymorphism of 14.28 % and 11.11 %, respectively. RJF <math>\alpha 1</math>, <math>\alpha 2</math> and <math>\alpha 3</math> domains showed the overall conservation of structure of the PBR region. Phylogenetic trees, based on nucleotide as well as amino acid sequence variability revealed very high closeness between RJF and B21 haplotype.</p>
N0001	<p>Effects of Bio-based Ingredients in the Development and Quality of Food Wrapper from Jackfruit (<i>Artocarpus heterophyllus</i> Lam.) Seed Flour  <b>Mylene Anwar</b></p> <p>Abstract—The use of edible food wrappers with antimicrobial properties is becoming popular nowadays. However, due to some complexities in its production and components, making it expensive, its use is often limited only to consumers who have the capacity to purchase at a relatively higher value. This can be answered by developing food wrapper using locally available bio-based ingredients known to exhibit antimicrobial properties. This study was conducted to develop food wrapper utilizing jackfruit seed flour and to assess its quality as affected by levels of malunggay leaf extract, cassava starch and garlic slurry as bio-based ingredients. Level combination of 120 % malunggay leaf extract, 80 % garlic slurry and 40 g cassava starch is the optimum level combination that satisfies the optimum formulation requirement based on product's general acceptability, production cost and nutritional value. Aroma and general acceptability of food wrapper was significantly affected by malunggay leaf extract levels and the texture acceptability of the product by cassava starch levels. The food wrapper showed no cracks when subjected to folding test and has a water and oil absorption capacity of 18.36 % and 10.76 %, respectively. It has a microbial load of <math>7 \times 10^1</math> cfu/g after 35 days storage at chilling condition and bacterial pathogens (<i>Salmonella</i> and <i>E. coli</i>) were not detected in the product. Overall consumer preference of 81% indicates that it has a strong potential to compete as a low cost healthy alternative with the existing food wrappers in the market.</p>
N2008	<p>JATROPHA CURCAS OIL CHARACTERIZATION AND ITS SIGNIFICANT FOR FEEDSTOCK SELECTION IN BIODIESEL PRODUCTION  Nassereldin Ahmed Kabbashi, <b>Nurudeen Ishola Mohammed</b>, Md Zahangir Alam and Mohammed Elwathig Mirghani</p> <p>Abstract—Over time, the quest for alternative fuel devoid of environmental degradation has intensified research on biodiesel synthesis from diverse feedstock. Biodiesel is an environmental friendly alternative liquid fuel that can be used in any diesel engine with little or no engine modification. There has been kindled interest in vegetable oils consideration for making biodiesel on account of its less polluting nature and benefits of its renewability compared to fossil diesel fuel. Once biodiesel is accorded the needed support and incentive, it stands to offer enormous benefits for the environment and the local population in terms of employment opportunity as well as provision of modern energy carriers for the use of rural communities. Moreover, non-edible oil such as jatropha curcas oil has experienced ongoing inquiry due to food-energy feud of some edible oils utilized as feedstock in biodiesel synthesis. In producing biodiesel which can be economically viable, it is imperative that the characteristic features of the feedstock are determined in order that</p>

	<p>all the available alternative approaches to produce the fuel are weighted before there can be any consideration for a particular method. In this paper, three jatropha curcas oil species were characterized and the implication of the various characteristic features in choosing the feedstocks for consideration in biodiesel synthesis are evaluated and discussed.</p>
N2006	<p>Strength Parameters of Packaged Roma Tomatoes at Peak Point under Compressive Loading <b>F.A. Babarinsa</b> and M. T. Ige</p> <p>Abstract—Compression test was conducted to investigate the peak stress and deformation induced in packaged Roma tomatoes under compressive loading and the effects of ripeness stage, vibration level and type of container on the two strength parameters. Tomatoes of three ripeness stages: unripe (5.6 Brix%), half-ripe (3.9 Brix%) and full-ripe (3.2 Brix%), were packed in plastic crate and raffia basket. Using a laboratory vibrator, the fruit bulks were subjected to three levels of vibration: non-vibrated, low vibration (frequency 3.7 Hz) and high vibration (frequency 6.7 Hz). These were then compressed in a Universal Testing Machine at a loading rate of 2.50mm/min and deformation and stress at peak point in the fruit bulk were measured. Level of vibration significantly (<math>P=0.001</math>) reduced maximum deformation and the corresponding stress at peak point. Stage of ripeness, however, showed no significant effects on both deformation and stress at peak. Rather, it induced minimal overall differences in stress, ranging from <math>8.123 \text{ E-}03 \text{ N/mm}^2</math> to <math>9.956\text{E-}03 \text{ N/mm}^2</math>. Effects of container types on stress were significant (<math>P=0.001</math>) but were not significant on deformation. Average peak deformation of the fruit ranged from 43.688 N to 50183N while peak stress ranged from <math>5.917\text{E-}03 \text{ N/mm}^2</math> to <math>6.936\text{E-}02 \text{ N/mm}^2</math>. The three levels of vibration exhibited stress values ranging from <math>1.274\text{E-}02 \text{ N/mm}^2</math> to <math>8.988\text{E-}03 \text{ N/mm}^2</math>.</p>
N0006	<p>Anti-inflammatory activities of cellulose nanofibers made from adlay and seaweed in an inflammatory bowel-disease model <b>Kazuo Azuma</b>, Shinsuke Ifuku , Tomohiro Osaki, Ichiro Arifuku, Yoshiharu Okamoto</p> <p>Abstract—Inflammatory bowel disease (IBD) is one of the common diseases all over the world. In this study, we investigated the anti-inflammatory effects of cellulose nanofibers made from adlay (A-CNF) and seaweed (S-CNF) on colon inflammation using the mouse model of IBD. A-CNF and S-CNF improved the histological tissue injury in mice. A-CNF and S-CNF also suppressed activation of nuclear factor-kappa B in the colon. Furthermore, A-CNF and S-CNF suppressed myeloperoxidase activities of inflammatory cells such as leukocytes. On the other hand, cellulose nanofibers made from wood did not improve the histological tissue injury and colon inflammation in mice. These results revealed that A-CNF and S-CNF have suppressive effects on colon inflammation in an experimental IBD mouse model. Furthermore, our results indicate that A-CNF and S-CNF may be a potential source of dietary fiber for patients with IBD.</p>
N0007	<p>Suppressive effects of onion peel extract tea in experimental obese mice <b>Yoshiharu Okamoto</b>, Kazuo Azuma, Tonohiro Osaki, Takeshi Tsuka, Tomohiro Imagawa, Norihiko Itoh and Mayumi Watanabe</p> <p>Abstract—In this study, it was examined the effects of onion peel tea (OPT) in a high-fat-diet-induced obese mouse model. Mice were fed a high-fat diet for 3 weeks, then a</p>



	normal diet with or without OPT for 28 days. OPT suppressed the increase in body weight and level of epididymal fat tissue; it also significantly reduced the serum concentrations of total-cholesterol on day 14 and that of glucose and leptin on day 28. Our results indicate that OPT has anti-obesity effects in an experimental high-fat-diet-induced obese mouse model.
N3002	<p>Monitoring Mango Fruit Ripening after Harvest using Electronic Nose (zNose™) Technique Farhad Gholizadeh Nouri, Zhiyuan Chen and <b>Mehdi Maqbool</b></p> <p><i>Abstract</i>—Over the past few years, electronic nose technology is offering a non-destructive method to sense aroma, which can be used to determine fruit ripening stages after harvesting. The objective of this study was to monitor mango fruit ripening after harvest using electronic nose (zNose™). Data acquisition was started using an electronic nose for a total of one hundred locally grown mangoes cv. Chokanan. The fruits were divided into two different groups, unripe and ripe mangoes. Concentration of volatiles was measured using electronic nose for each of the two groups during storage. However, to be able to classify the mangoes into three classes, namely unripe, ripening and ripe, the experiment was carried out with the unripe samples for three more days, every 48 hrs from the starting day. Besides, observation of new volatiles from the unripe mangoes as they were ripening indicated trend of volatiles during mango ripening, proving the efficacy of electronic nose for the formation of climacteric crops profiles in terms of volatiles liberated during ripening.</p>

## 12:30pm-13:30pm —Lunch

### SESSION – 2 (ICEII 2014)

Venue: Function Hall 1

Session Chair: Dr. Hj Ismail Abustan

**Time: 13:30pm – 15:20pm for 9 presentations**

H0003	<p>Comparison of Enzymes Production of Bacteria from Landfill Soil and Leachate: A Case Study- Jabor Landfill Kuantan. Pahang, Malaysia. <b>Nailah Sa'adah</b>, W.M.F. Wan ishak, Essam A. Makky</p> <p><i>Abstract</i>—Jabor landfill commonly known as Kuantan landfill receives more than 500 tons per day waste with a composition of 60% of domestic waste and 40% of industrial waste. Landfill system always produce leachate. This waste contains many types of bacteria which potential to degrade the waste compound. Samples were taken from different places, landfill soil and leachate. Bacteria found in landfill soil were 19 different species of bacteria which are three Gram positive and 16 Gram negative bacteria. Bacteria were found in leachate tank were found to be 18 different species of bacteria. Those are five Gram positive and 13 Gram negative bacteria. Almost all of the bacteria in the soil and landfill leachate are able to</p>
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	<p>produce amylase and protease enzymes, but only a few bacteria produce the lipase enzyme. The best bacteria are <i>Bacillus amyloliquefaciens</i>, <i>Bacillus licheniformis</i>, <i>Bacillus subtilis</i>, <i>Bacillus ruris</i> and <i>Kocuria varians</i>.</p>
H0004	<p>Dual Gradient Drilling in Energy Efficient and Safe Manner  <b>A. Kartik</b>, Abhay Sharma, and Arti Jain</p> <p><i>Abstract</i>—At present the deep sea drilling utilizes conventional drilling fluids and enormous number of casings which significantly affects the fluid density. The well productivity is directly affected by the inculcation/leakage of mud in low producing zones. The cost of deep sea water exploration rapidly increases and at the same time imposes technical boundaries on the depths of the well that can be reached thereby affecting the productivity. Dual Gradient Drilling (DGD) is the establishment of multiple pressure gradients within the selected sections of the annulus for managing the annular pressure profile. DGD is a particular type of managed pressure drilling. In this paper we discuss the process of DGD in detail using energy efficient methods and the various advantages which this technology has to offer keeping in mind the health, safety and environment. In a nutshell DGD is an area which implemented properly using appropriate methods can help in reaping maximum benefits of Off-Shore Drilling.</p>
H0005	<p>A Strategy for Reliability-based Multidisciplinary Design Optimization of Wind Turbine using BLISS and PMA  <b>S. A. Mousavi</b> and Fairuz I. Romli</p> <p><i>Abstract</i>—Performance of wind turbines can be negatively affected by uncertainties. Uncertainty-based multi-disciplinary design optimization (UMDO) techniques have been successfully applied in the aerospace industry and given the similarities to wind turbine design problem, application of UMDO techniques is an opportunity to improve wind turbine design. However, the major challenges of UMDO, namely computational complexity and organizational complexity caused by both time-consuming disciplinary analysis models and UMDO algorithms, still greatly hamper its usage in wind engineering. In recent years, there is a surge of research aiming at solving these problems. The purpose of this paper is to review these approaches and with the gathered information, a strategy with bi-level integrated system synthesis (BLISS) and performance measurement approach (PMA) for a reliability-based multidisciplinary design optimization of a wind turbine is proposed.</p>
H0007	<p>Basic design of a fluidized bed reactor for wastewater treatment using Fenton oxidation  <b>Farhana Fahim Tisa</b>, Abdul Aziz Abdul Raman, Wan Mohd Ashri Wan Daud</p> <p><i>Abstract</i>—Fluidized bed reactor (FBR) can be an efficient alternative solution in advanced water treatment processes. Fenton oxidation is popular among other advanced oxidation processes. FBR-Fenton process can reduce production of sludge in water treatment and also offers lower hydraulic retention time compared to other biological and chemical processes. This research work is an attempt to develop basic steps to design this FBR. A practical design protocol of the feature for treating phenolic water was developed. Detailed design parameter studies which include different correlations for calculating the required design parameters. The design calculations have been done based on literature and some collective</p>

	<p>assumptions. From this work it can be summarized that, calculated flow rate for working fluid was found to be 1.4 l /min or more for complete fluidization, where the settling velocity of the particle was found to be 0.0365 m/s and the calculated Reynolds number implied that, the fluidization to be a transition fluidization.</p>
H0009	<p>Experimental Measurement Design of Required Operating Torque for Hinged Door  <b>Shih-Bin Wang</b>, Chih-Fu Wu, Kai-Chieh Lin, Shin-Chung Jain</p> <p><i>Abstract</i>—The lacks of operating standards and measurement methods make the universal design of the door difficult to achieve. Thus, in this study, a force measurement system for hinged door operation has been developed, and a series of operating force measurement for hinged door were carried out with and without door closer. Specially, a quarter arc guiding track was designed to confirm that the door required operating torque could be measured successfully. The results showed that as door closers were applied, the operating forces increased greatly. There were two characteristic measuring signals composed of the initial force and the maximum force existed significantly. The use of the door closer was proved to increase the required operating torque greatly, which even caused inconvenience for users. Regardless of whether use a door closer or not, the consideration of door operating torque in the universal design was proved to be decisive.</p>
H0010	<p>Ampicillin Removal by Polyvinylidene Difluoride (PVDF), Polyethersulfone (PES) and Nylon for Membrane Bioreactor Application  <b>Ruby S. Labinghisa</b> and Analiza P. Rollon</p> <p><i>Abstract</i>—Micropollutants comprising of pharmaceutically active compounds (PhACs) are usually not degraded or removed in conventional wastewater treatment systems and are persistent in aquatic environment. This study determined the rejection of ampicillin by hydrophobic and hydrophilic membranes, the effects of operational parameters such as flow rate (1.4 and 2.2 mL/min), influent concentration (40, 70 and 100 ppb) and the extent of biodegradation and adsorption of ampicillin in batch membrane bioreactor with and without nitrification. Ampicillin (AMP) removal was higher in the bioreactor where nitrification occurred and at lower concentration and flow rates. The results showed that membrane bioreactor (MBR), with combined biological degradation and membrane filtration is a viable system for ampicillin removal. Besides biodegradation in the bioreactor, the cake layer deposited over the membrane surfaces played an important role in AMP rejection. A big part of the removal by the membrane system was attributed to the sieving and adsorption onto the cake layer.</p>
H0012	<p>Knowledge and Awareness of Clinical Waste Management among Medical Practitioners in Hospital Batu Pahat, Johor  <b>Siti Nurshahida Binti Nazli</b>, Subramaniam A/L Karuppanan, and Dasimah Omar</p> <p><i>Abstract</i>—The study is a descriptive study administered using questionnaires conducted to identify the level of knowledge and awareness among medical practitioners towards clinical waste management in hospital. Data were analyzed using statistical analysis tools such as Mann-Whitney Test and Chi-square Test. Study found that the level of knowledge and awareness among respondents are high. However, there were some weaknesses identified. Half of the respondents (50%) had experienced sharp injuries. Inadequate training and low</p>

	<p>knowledge in some respondents were identified that lead to improper disposing of clinical waste in general waste bins and vice versa. Statistical analysis showed that there is significant difference between the incidence of needle stick injury with receiving training (p-value&lt;0.005). Respondents that do not receive information were not aware on the correct procedures of disposing clinical waste. Proper training is crucial as to increase and maintain high knowledge and awareness of clinical waste management in hospitals.</p>
H0015	<p>Numerical Analysis of Water Vortex Formation for the Water Vortex Power Plant  <b>Tze Cheng Kueh</b>, Shiao Lin Beh, Dirk Rilling, Yongson Ooi</p> <p><i>Abstract</i>—The behavior of the water vortex is interested in designation of turbine blade for Water Vortex Power Plant (WVPP). This study uses Xflow, a commercialize CFD code base on Lagrangian approach, which provides the details of water vortex formation without much difficulty as discretization of flow domain is not required at all. The boundary conditions of the CFD models are applied based on the experiment setup. Two conditions were investigated, with two different holes size for water discharge. The result in first condition shows the vortex height agree each other in experiment and CFD. For second condition, the final vortex height of the CFD model is different from the experiment result. As the discharge hole is getting larger, more turbulent flow has set in and causing more errors in the CFD model in predicting the water vortex formation. However, the CFD model can be improved by better turbulent modeling.</p>
H1001	<p>Biosorption of Chromium (VI) Ion from Tannery Waste Water Using Two Novel Agricultural By-Products  <b>Abdulsalam, S.</b>, Mohammed, J., Deji E. Olubiyo and Ibrahim I. Tenimu</p> <p><i>Abstract</i>—This study was carried out to investigate the use of two novel agricultural by-products namely: oil-free Moringa oleifera cake and sweet potatoes peels for the removal of Cr (VI) ion from a typical tannery wastewater. Biosorbents were produced from these two agricultural by-products, surfaces of these biosorbents were modified using 1N NaOH and 6N HCl, subsequently the modified and unmodified biosorbents were used for the removal of Cr (VI) ion from tannery wastewater using the batch process technique. Results obtained showed that the acid modified biosorbents gave the best results with removal efficiencies of 59 and 74% for oil-free Moringa oleifera cake and sweet potatoes peels respectively at pH of 7.0. Kinetics investigation revealed that both agricultural by-products followed the pseudo-first order kinetics. From the results obtained, oil-free Moringa oleifera cake and sweet potatoes peels were effective biosorbent for the removal of Cr (VI) ion from tannery waste water.</p>

**SESSION – 3 (ICBET 2014)**

Venue: Function Hall 2

Session Chair: Prof. C. CHELLARAM

**Time: 13:30pm – 15:20pm for 10 presentations**

G0007	Modeling Health Related Quality of Life among Cancer Patients Using an Integrated
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	<p>Inference System and Linear Regression  <b>Lazim Abdullah</b> and Jia Yu Low</p> <p><i>Abstract</i>—Health Related Quality of Life (HRQL) is one of the increasing subjects used for assessing health condition among patients who suffer from specific diseases or ailment. It has been assumed that identification of the variables is able to mirror the one’s overall health conditions. However, devising the extent of contribution of multiple variables towards overall health conditions is not straight forward as the arbitrary nature of HRQL variables. This paper aims to model the relationship between HRQL variables using an integrated model of inference system and linear regression. An experiment was conducted to measure the strength of the relationship between the variables and health indices among cancer patients. To model this relationship, thirty outpatients with cancer were recruited from a government funded hospital in Kuala Terengganu, Malaysia. Linguistic data were collected via guided interview and fed into the fuzzy inference system to yield HRQL indices. Multi linear regressions were then undertaken to establish the relationship between the variables and HRQL indices. The model shows that the variable of emotion was identified as the highest risk factor for cancer patients. The employment of the integrated model, fuzzy inference system and multi linear regressions were successfully identified the strength of the relationship between the multi variables of HRQL and the health status.</p>
G0009	<p>Human-Computer Interface of Low-cost Abductor Digits Minimi Monitoring System using sEMG  Vivekanandan Sundaram, Emmanuel Ds, Lokeshkumar Chinthala, and <b>Devanand Manokaran</b></p> <p><i>Abstract</i>—The affordability of the medical diagnostics is going high over time. To overcome this scenario people are looking for inexpensive, reliable and effective healthcare technologies that are user-friendly and could be used in home without physicians help. This paper focuses on the design and development of low cost Abductor digits minimi (ADM) muscle monitoring system using surface electromyography (sEMG) that detects the electrical pulses from muscle and transmitted wirelessly. Telemedicine is one of the rapidly developing field’s nowadays; hence remote monitoring plays a vital role in faster diagnosis by which continuous monitoring is carried out using ZigBee – wireless technique. The EMG data obtained in the receiver end is analyzed using MATLAB software.</p>
G0010	<p>Intestinal Parasitic Infection and Assessment of Risk Factors in Northwestern, Nigeria: A Community Based Study  <b>Mohammed K</b>, Ikeh IE, Aziah Ismail, Julia Omar, and Mohamed Rusli Abdullah</p> <p><i>Abstract</i>—Study was aimed to determine the prevalence and assessment of risk factors associated with intensity of intestinal parasitic infections in Sokoto, Nigeria. Parasitological examination was carried out on stool samples from 500 participants using formol ether concentration methods whose age ranges between 5- 30 years and above. Finding shows that 271 [54.2%] were positive for intestinal parasitic infections. Males recorded higher prevalence than the females with 85.4%, and 14.6% respectively. Predominant intestinal parasites identified in this study are Entamoeba coli, Hookworms, Entamoeba histolytica, and Ascaris lumbricoides with 17.0%, 6.6%, 6.2% and 5.0% prevalence, respectively. Intestinal</p>

	<p>parasites continue to remain a serious public health problem in North-western Nigeria. Low level of education, occupational status seems to be among significant risk factors for these infections. Creating awareness, level of sanitation, water supply and deworming programme among school children will reduce prevalence and intensity of parasitic infections among the study community.</p>
G0011	<p>Comparison of Smooth and Rough Chitosan Fibers for Cellular Growth Investigations <b>Paulomi Ghosh</b>, Reshmi Dey, and Santanu Dhara</p> <p><i>Abstract</i>—Cellular adhesion to artificial matrices depends on material as well as scaffold fabrication techniques. Fibrous scaffolds have been reported to enhance cellular activity as they mimic the extracellular matrix of the cells. Also, fiber based scaffolds provide large surface area for nutrient/waste exchange. In this work, chitosan fibers were produced in alkaline bath via pH induced precipitation. Another set of chitosan fibers was prepared by emulsification with coconut oil in order to introduce roughness to the fibers. The chemical characterization of the fibers was carried out using FTIR. Compared with pure chitosan fibres that show a smooth surface, the emulsified fibers exhibited significant roughness. The differential ability of the chitosan based fibers to promote proliferation of MG63 osteoblast like adherent cell lines were investigated in terms of degree of roughness of the fibers.</p>
G0015	<p>Reconstruction of Parallel and Fan Beam Projections for Biomedical Diagnosis <b>S. Prasath</b>, M. Marieswaran, and G. Murugaboopathi</p> <p><i>Abstract</i>—Computed Tomography (CT) is a medical imaging technique which produces cross sectional images of human tissues representing their x-ray attenuation coefficients. The attenuation coefficients are recorded as projections for a given cross sectional slice of the body. Reconstruction of those projections yields the 2D image of the required slice. Depending on the mode of acquisition of projections, geometry of X-ray source and detectors, arrangement of detectors, there are many types of CT. The reconstruction algorithm for each type is different. In this paper, we created a set of phantom (cross sections of thoracic region), and acquired projections for them .Both conventional and spiral projections are acquired. Reconstruction of these projections is done and the final cross sectional images are compared for conventional CT and spiral CT. Matlab R2009a is used for simulation of phantoms, acquisition of projections and reconstruction of it and Image 1.44 is used for quantitative analysis.</p>
G0034	<p>Influence of Disc Degeneration on the Facet Joint Contact Forces in Lumbar Scoliosis: A Finite Element Study Saisai Yin, Qiang Chen, Ping Huang, Xuhua Lu, and <b>Zhiyong Li</b></p> <p><i>Abstract</i>—Adult degenerative lumbar scoliosis usually occurs in people aged over 45 years. Although its etiology is still unknown, it is well-accepted that the spinal disorder starts with the degeneration of the intervertebral disc. In this study, the influence of the disc degeneration on the facet joint contact force was investigated in three loading cases, i.e., flexion/extension, lateral-bending and axial-rotation cases. First, a 3D finite element model of normal lumbar spine was validated, and further it was modified to simulate the degenerative scoliosis of lumbar spine by decreasing the disc height on one side and simultaneously altering its material properties. For all loading cases, the facet joint forces in the degenerated segment are</p>

	<p>much greater than the others. The present study can be helpful to understand the hyperostosis of the facet joints and pain in the lower back, and further to clinical application.</p>
G0019	<p><b>Gait Analysis Using Virtual Body Sensor Networks for Biomedical Applications</b>  <b>V. Parthasarathy, P. Sharmila, G. Murugaboopathi, S. Hemalatha, and A. Prabhu</b></p> <p><i>Abstract</i>—In BSNs Signal processing usually consists of multiple levels of data abstraction, with raw sensor data to data which is calculated from each processing steps that includes feature extraction and classification. Here we present a multi-layer task model based on the concept of Virtual Sensors in order to improve design reusability and architecture modularity. Virtual sensor networks (VSNs) is an emerging form of collaborative wireless sensor networks. Virtual Sensors are abstractions of components of BSN systems that involve sensor sampling and tasks processing and issues data upon external requests. The model of virtual sensor implementation depends on SPINE2, which is an open source domain-specific framework that is developed to support distributed sensing operations and processing of signal for wireless sensor networks and enables code efficiency, reusability and application interoperability. This proposed model is applied in the framework of gait analysis through wearable sensors. According to SPINE2-based Virtual Sensor architecture a gait analysis system is developed and it is experimentally evaluated. The results obtained confirm that great value can be achieved to design and implement BSN applications through the Virtual Sensor approach at the same time maintaining high efficiency and accuracy.</p>
G0020	<p><b>Comparative Molecular Simulation Method for Ang2/Aptamers with in Vitro Studies</b>  <b>Jangam Vikram Kumar, Wen-Yih Chen, Jeffrey J. P. Tsai, and Wen-Pin Hu</b></p> <p><i>Abstract</i>—Many researchers have reported about angiopoietin-2 (Ang2), which plays vital aspect of tumor Angiogenesis. Literature studies confirm that aptamers generated by in vitro selection strategy (systematic evolution of ligands by exponential enrichment, SELEX) has the ability to bind and inhibit Ang2 in vitro. A comparative simulation was performed between aptamers and Ang2 in computational environment using Discovery Studio 3.5. ZDOCK which uses Pairwise Shape Complementary as scoring function was performed for simulation, along with ZRANK which assess accurately reranking the rigid body docking results from ZDOCK. From this approach, our computational results showed consistent to in vitro results, thus providing ZDOCK with ZRANK as an alternative method for computational selection of best binding aptamers. This study also presents the binding interface between Ang2/aptamers which can be informative in the future study.</p>
G0031	<p><b>MRI-based Strain Analysis of Left Ventricle</b>  <b>Yan Gan, Qiang Chen, Shijun Zhang, Shenghong Ju, and Zhiyong Li</b></p> <p><i>Abstract</i>—The aim of this study is to estimate the left ventricle (LV) myocardial strain based on cardiac cine magnetic resonance imaging and to evaluate the efficiency of the proposed method. The method uses a hierarchical transformation model, which is a combination of an affine transformation and a B-spline free-form deformation transformation. Combining the original hierarchical algorithm with a variant design of iterative closest point algorithm, we introduced LV contour information to enhance the registration accuracy. The computational results of a normal volunteer and a diabetic patient were compared. The results demonstrated that the proposed method is applicable to estimate regional LV myocardial strain during a</p>

	cardiac cycle and to quantify the analysis of the LV function.
G0032	<p>Mitochondrial Dysfunction Induced Lipolysis and Intracellular Lipid Accumulation in 3T3-L1 Adipocytes  <b>Mohamad Hafizi Abu Bakar</b>, Wan Najihah Wan Hassan, Mohamad Roji Sarmidi, and Harisun Yaakob</p> <p><i>Abstract</i>—Adipose tissue is one of the important peripheral tissues that regulate the whole-body homeostasis. Metabolic imbalance of energy productions and impaired oxidative phosphorylation in this target tissue may lead to mitochondrial dysfunction. However, it is currently unknown, what is the effect of mitochondrial dysfunctions in adipocytes on the cellular lipolysis activities and intracellular lipid accumulations. In this study, we determined the direct effects of mitochondrial dysfunction on the lipolysis activity and relative distribution of lipids in the cell. The induction of mitochondrial dysfunctions in adipocytes was performed with the treatment of two common mitochondrial respiratory inhibitors, which are Antimycin A (Complex III) and Oligomycin (ATP synthase) on 3T3-L1 adipocytes. We found that in the presence and absence of insulin, both respiratory inhibitors significantly reduced intracellular ATP concentrations within the cell. Furthermore, both drug treatments resulted in the significant elevation of free fatty acids and glycerol release into the media compared to control. The treated cells were also found to exhibit an irregular intracellular accumulation of lipid droplets. Our result demonstrated that lipolysis activity, and abnormal intracellular lipid accumulations were up-regulated in the event of mitochondrial dysfunctions in adipocytes, indicating further research are required for studying mechanisms underlying these metabolic impairments.</p>

## 15:20pm- 15:40pm —Coffee Break

**Afternoon, March 13, 2014**

**SESSION – 4 (ICEII 2014)**

Venue: Function Hall 1

Session Chair:

**Time: 15:40pm – 17:40pm for 9 presentations**

H1002	<p>The Radar-Rainfall Relationship for Northern Region of Peninsular Malaysia  <b>Mahyun A.W</b>, Abdullah. R, Abustan. I, Adam. M. K. M and Nur Atiqah A.A</p> <p><i>Abstract</i>—Rain gauge and weather radar is a tool to measure rainfall depth. But, weather radar cannot measure the rainfall depth directly as oppose to rain gauge. Therefore, an empirical relationship between reflectivity (Z) and rainfall rate (R), called the Z-R relationship (<math>Z=AR^b</math>), is commonly used to assess the rainfall depth using radar. Using the optimization technique, new relationship for northern of Peninsular Malaysia was developed.</p>
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	<p>Using the daily rainfall data, calibration process has been performed by varying the value of A and fixed the exponential b to 1.6. The calibration process done, new climatological Z-R relationship, <math>Z=40R^{1.6}</math> indicates the closeness between radar rainfall and gauge rainfall. To justify the new relationship, validation process has been performed using the calibrated equation which shows the value of Mean Error, Absolute Mean Error, Root Mean Square Error and Bias within the acceptable statistical indicators with the values of 2.65, 3.29, 3.81, and 0.85 respectively</p>
H1004	<p><b>Sustainable Drainage System For Road Networking</b>  <b>Owuama C. Ozioma, Uja. E., and Kingsley C. O.</b></p> <p><i>Abstract</i>—In built up flat areas flood control is often a challenge. Drainage systems involving open concrete or pipe drains on roads pose significant problems arising from blockade due to anthropogenic factors and sluggish water flow due to very low invert grade. These consequently lead to unfriendly living environment. The sustainability of such drains for effective performance is grossly in doubt. An alternative and sustainable drainage system is a trenchless drain comprising absorption unit and grass cover. The technology provides a cheap, aesthetic and effective method of disposing road surface runoff with minimal distress to users and minimal damage to the environment.</p>
H1006	<p><b>ORGANOCHLORINE AND ORGANOPHOSPHORUS PESTICIDE RESIDUES IN FISH SAMPLES FROM LAKE CHAD, BAGA, NORTH EASTERN NIGERIA</b>  <b>J. C. AKAN, F. I. ABDULRAHMAN and Z. M. CHELLUBE</b></p> <p><i>Abstract</i>—The aimed of this study was to determine the levels of some organochlorine (o, p-DDE, p, p'-DDD, o, p'-DDD, p, p'-DDT, p, p'-DDT, <math>\alpha</math>-BHC, <math>\gamma</math>-BHC, lindane, Endosulfan sulphate, dieldrin and aldrin and organophosphorus (Dichlorvos, Diazinon, Chlorpyrifos, fenitrothion and Fenitrothion) pesticide residues in the gills, liver, stomach, kidney and flesh of four fish species (Tilapia zilli, Clarias anguillaris Hetrotis niloticus and Oreochromis niloticus) between the periods of September 2010 to October, 2011. Samples were collected from Kwantan turare in Lake Chad, Baga, Borno State, Nigeria. Extraction of the fish samples and de-fattening of the fish sample extracts were performed using standard procedures. Analysis of the fish samples for pesticide residues were carried out using Shimadzu GC/MS (GC – 17A), equipped with fluorescence detector. Large differences in the levels of pesticide residues were observed between tissues within each fish. The concentrations of all the organophosphorus pesticides were higher in the organs of Oreochromis niloticus, while Hetrotis niloticus shows the lowest. For organochlorine pesticides, the organs of Tilapia zilli showed the highest concentrations, while Hetrotis niloticus shows the lowest. The highest pesticide therefore be concluded that the concentrations of pesticide in the four fishSpecies study did exceed the permissible limits set by FAO and FEPA.</p>
H1008	<p><b>Effect of Carbon to Nitrogen Ratio of Food Waste on Biogas Methane Production in a Batch Mesophilic Anaerobic Digester</b>  <b>Musa I Tanimu, Tinia I Mohd Ghazi, Razif M Harun, Azni Idris</b></p> <p><i>Abstract</i>—Food waste mixture at carbon to nitrogen (C/N) ratio 17 was combined with meat, fruits and vegetable wastes to increase its C/N ratio to 26 and 30 before anaerobic digestion.</p>

	<p>Results showed that biogas methane yield obtained during the digestion increased from 0.352L/gVS, 0.447L/gVS and finally to a maximum yield of 0.679 L/gVS at C/N ratio of 17, 26 and 30, respectively. A maximum food waste treatment efficiency of 85% was obtained at C/N ratio 30. Generally, increase in C/N ratio through co-digestion resulted in a more stable pH and better methanogenic activity due to enhanced buffering effect of the digestion medium.</p>
H1010	<p>Microbial Community and Population Dynamics Analysis of Anaerobic Fermentation of Vegetable Waste under Different pH  <b>Hailing Ma</b>, Mingyue Zheng, Mingxia Zheng, Guochen Zhang, Kaijun Wang</p> <p><i>Abstract</i>—The advantage bacterium group of acidogenic and methanogenic processes by PCR-denaturing gradient gel electrophoresis (DGGE) under different pH values(4.1~4.3 and 5.9~6.1) was studied . 16S rDNA of bacteria and methanogenic archaea amplified with two universal primers (341F-GC /109F-GC and 518R). PCR amplicons were separated by denaturing gradient gel electrophoresis (DGGE) using the DGGE Decode system. Parts of the separated DNA were sequenced after purification from DGGE gel. The sequences of several 16S rDNA DGGE fragments were determined and some possible bacteria were confirmed in comparison in GeneBank (NCBI).The results showed that the acidogenic phase of fruits and vegetables during the fermentation process display different type: ethanol-type and butyrate-type fermentation and the predominant bacterium act differently. The predominant organism groups of methanogenic processes within the reactor performed differently, too. These results indicated that the change in the product formation was mainly caused by the change of the dominant microbial populations under different pH conditions.</p>
H1007	<p>THE BIODIVERSITY OF THE GULF OF MANNAR IS AFFECTED BY UNCONTROLLED AND ILLEGAL FISHING PRACTICES  <b>Dr. R. Uma Maheswari</b></p> <p><i>Abstract</i>—India has rich biological diversity and one of the 12 diverse counters of the world, with only 2.5% of land area, India accounts for 7.8% of the recorded species at global level. India is also rich in traditional and indigenous knowledge both coded as well as informal. Among 5 the Asian countries, India is perhaps the only country that has a long record of inventories of coastal and marine biodiversity dating back to at least two centuries. Much of the world's wealth of biodiversity is found in highly diverse marine and coastal habitats. Fishing is the major activity in the Gulf of Mannar and nearly 225 fishing village are located along the Gulf of Mannar coast. Several types of net operated in this region cause over exploitation of marine resources especially finfishes and shellfishes. Overfishing has led to over-exploitation of some marine species, which has in turn led to a progressive change in the composition of the global catch to species of lower economic value. While over fishing could be a major reason for declining in fish stocks, increase in sea temperature, decrease in freshwater flow into the sea and decrease in rainfall have had an equally adverse impact.</p>
H3006	<p>Distribution of Stomach Food Content of Fish Species Collected From Industrial Waste Water Effluents A Case Study of Jakara Dam. Kano, Nigeria  <b>I. Badamasi</b></p> <p><i>Abstract</i>—Industrially polluted Jakara dam water sample was analyzed; surface water</p>

	<p>temperature ranges 19.3<sup>0C</sup>- 27.8<sup>0C</sup>, pH 6.3-8.4, electrical conductivity 87.5–117.3 us·cm<sup>-1</sup>, chloride concentration was 0.5–1.4 mg·L<sup>-1</sup>, dissolved oxygen 3.7- 5.0 mg·L<sup>-1</sup>, BOD<sub>5</sub> 2.1-3.1 mg·L<sup>-1</sup>, Lead 0.02-0.05 mg L<sup>-1</sup>, Zinc 0.02-0.21 mg L<sup>-1</sup>, turbidity 19.8-90.0 FAU, transparency 100-368mm, and total dissolved solids 43.3-58.6 mg L<sup>-1</sup>. Lead and Zinc were above the average concentration desirable limit. Species relative abundance recorded using gills and cast net sampling gears; <i>S. gallilaeus</i> (32%), <i>O. niloticus</i> (32.9%), <i>T. zilli</i> (26.3%), and <i>C. gariepinus</i> (8.8%). 300 samples of <i>S. gallilaeus</i> examined, 214 (71.3%) had food items in their stomach. <i>T. zilli</i> samples recorded 246 which includes 190 (77.2%) with food items whereas 56 (22.8%) had empty stomach. 308 <i>O. niloticus</i> stomach examined, 240 (79.9%) were identified with food items in stomach. <i>C. gariepinus</i> were 82 with 70 (97.2%) consisting of various food items. Plant materials, insects, insect larvae and smaller fishes were the predominant food items identified</p>
H3009	<p>Neural Network application In Fixed Bed Column Adsorption  <b>M. M Nourouzi, S. Keshani and L. Chuah Abdullah</b></p> <p><i>Abstract</i>—Adsorption experiments were carried out in fixed bed column. Neural network (NN) was used to describe the fixed bed adsorption of POME pigment by resin. The general breakthrough models such as Thomas and Yoon–Nelson models resulted in poor fitness with experimental data (<math>R^2 &lt; 0.8</math>). A wavelet neural network model (WNN) was developed to model the breakthrough curves in fixed bed column for multicomponent system and WNN model successfully described the adsorption process (<math>R^2 = 1</math>). At the initial stages, BDST model showed good agreement with the experimental data but diverged at higher <math>C_b/C_0</math> ratio (<math>&gt; 0.11</math>).</p>
H3012	<p>Application of Solar Energy and Reversible Solid Oxide Fuel Cell in a Co-generation System  <b>R. K. Akikur, K. R. Ullah, H.W. Ping, R. Saidur</b></p> <p><i>Abstract</i>—The sustainable energy sources have been concentrated over the last few decades. The solar energy and solid oxide fuel (SOFC) technology will be the promising possibility to tackle the energy poverty and environment pollution. Hence, the solar energy coupling with fuel cell technology can be a green energy solution for the next generation. In this study, a co-generation system is presented using the solar energy and reversible solid oxide fuel cell (RSOFC). The solar energy is used for power supply and steam electrolysis and the solid oxide fuel cell is used for hydrogen production from steam electrolysis as well as electricity and heat from generated hydrogen fuel (H<sub>2</sub>).</p>

### Afternoon, March 13, 2014

**SESSION – 5 (ICBET 2014)**

Venue: Function Hall 2

Session Chair: Associate Prof. Lazim Abdullah

**Time: 15:40pm – 17:40pm for 11 presentations**

G0016	<p>Bioactive Efficacy of Epibiotic Bacteria Isolated from Sea Fan Corals, Gulf of Mannar, South Eastern India</p> <p><b>C. Chellaram</b>, T. P. Anand, A. A. John, M. M. Praveen, and S. Krithika</p> <p><i>Abstract</i>—Aim of this work is to investigate the bioactive efficacy of epibiotic bacteria isolated from surface of the gorgonian octocorals, <i>Subergorgia suberosa</i> and <i>Junceella juncea</i> (Pallas, 1766) from Tuticorin coastal waters. A total of 128 bacterial strains were isolated and their antagonistic effect was tested against selected six human pathogens. It was noticed that 21 isolates were found to be antagonistic effect. The strain JJ-109 showing higher degree of inhibition against <i>Candida albicans</i> (5mm) and <i>Escherichia coli</i> (4mm). The molecular identification of the strain JJ-109 was carried out through 16s rRNA. After the sequencing and phylogenetic construction and it could be concluded that name of the strain is <i>Kocuria marina</i> KMM 3905. Thus, the epibiotic bacteria attached to the surface of these corals may yield a vast array of new compounds with novel activities that will provide new drugs in the fight against a number of pathogens currently resistant to conventional antibiotic therapies.</p>
G0035	<p>Material Quantification Using Spectral Computed Tomography</p> <p><b>R. Zainon</b>, J. P. Ronaldson, A. P. Butler, and P. H. Butler</p> <p><i>Abstract</i>—The aim of this work is to evaluate a linear algebra technique for materials quantification using spectral Computed Tomography (CT). The MARS spectral micro-CT system incorporating Medipix3 was used to acquire spectroscopic CT data from phantoms containing (i) calcium chloride solutions of various concentrations and (ii) sunflower oil and discrete solutions of iodine, ferric nitrate and calcium chloride. These data were used to establish the linearity of the system and to calibrate the spectroscopic response for different materials of interest. The validity of the proposed materials analysis method was determined by analysis of the information entropy and degrees of freedom associated with the inverse calibration matrix. It is concluded that materials analysis is viable using the proposed linear algebra method for some of the materials of interest and the efficacy of the method is improved with the use of appropriate volume constraints. However the method may not be able to independently distinguish iron, calcium, oil and water without additional data and/or constraints.</p>
G0038	<p>Signal Improvement in Imaging Type Two-Dimensional Fourier Spectroscopy For Wild-Field Internal Non-Destructive Inspection</p> <p><b>Pradeep K. W. Abeygunawardhana</b>, Masaru Fujiwara, Satoru Suzuki, Akira Nishiyama, and Ichirou Ishimaru</p> <p><i>Abstract</i>—Imaging type two-dimensional Fourier spectroscopy is the wave front-division interferometer which limits the measurement depth into focal plane. This method has shown the potential in many areas such as measurement of biological substances and non-destructive inspections. Presence of noise in the signal may affect the end result of test. This paper proposes the algorithm for improving spectral data by finding low noisy point and filtering them. Cross correlation with median noisy signal is used to find the best signal to be considered. Experiment was conducted for testing fingerprint, alcohol measurement and measurement of ink. Proposed algorithm was conducted for the data obtained from ink measurement.</p>

G0039	<p><b>Self-Assembly of 3D Keratinospheroids on the Liquid Crystal Substrate</b>  <b>Chin Fhong Soon, Kok Tung Thong, and Kian Sek Tee</b></p> <p>Abstract—The conventional two dimensional (2D) culture technique used for producing monolayer of cells on the polystyrene dish is widely used in the life sciences laboratory. However, the 2D cell culture technique is producing organization of cells that are far from the nature tissue. Three dimensional (3D) cell culture offers many advantages over the 2D culture by establishment of cell polarity in the micro-environment mimics those in the in-vivo system. The aim of this work is to apply liquid crystals to culture 3D human keratinocytes (keratinospheroids). Liquid crystal substrate was coated on a petri dish using a squeegee coater at approximately 200 <math>\mu\text{m}</math> followed by an addition of high density cell suspensions. The liquid crystal based 3D micro-tissue culture is a scaffoldless technique which promoted the self-assembling of keratinospheroid with a mean diameter of <math>114 \pm 20 \mu\text{m}</math> (mean <math>\pm</math> SE). Without replenishment of media, keratinospheroids reached the dormant phase after 4 days of culture. The preparation of liquid crystal substrate for culturing 3D microtissues of keratinocytes is fairly simple and highly reproducible compared with other scaffold based technique.</p>
G2004	<p><b>Isolation and Anticomplement Activity of Polysaccharides from Asphodelus tenuifolius Cavan (Liliaceae)</b>  <b>Boual Zakaria, Ben Aoun Fatima, Kemassi Abdellah, Michaud Phillipe, and Ould El Hadj Mohamed Didi</b></p> <p>Abstract—The water-soluble polysaccharides isolated from <i>Asphodelus tenuifolius</i> Cavan. (Liliaceae) aerial parts by water extraction and isopropanol precipitation, were fractionated into a neutral polysaccharide (NF) and an acidic one (AF) by anion-exchange chromatography. These fractions were evaluated for their anti-complement activity. High-performance anion-exchange chromatography with pulsed amperometric detection (HPAEC-PAD) analysis showed that a large sub-fraction NF mainly constituted glucose (43.6%), mannose (36.0%) and galactose (18.5%). A trace of arabinose (2.0%) and xylose (1.3%) were also detected. AF composed glucose (38%), galactose (31.5%), glucuronic acid (28.6%) and xylose (2.0%). The polysaccharide fractions were investigated in vitro for their anti-complement activity against the complement system, as compared to heparin, a known complement fixing agent. NF showed a highly active compound with 50% inhibitory concentration (IC<sub>50</sub>) value of <math>0.23 \pm 0.03 \text{ mg/ml}</math>, whereas AF fraction was the less active.</p>
G2005	<p><b>Analysis of the Novel 3-Parameter Model for Microwave Antennas in Lossy Medium</b>  <b>Michael Fernando, Krishna Busawon, and David Smith</b></p> <p>Abstract—For several years, microwave engineers have dreamed of using non-ionising electromagnetic waves in medical imaging applications. The most important factor in medical imaging applications is the ability of the system to work in different dielectric media. Microwave antennas, must be capable of working efficiently in these environments. A novel mathematical model is developed to predict the characteristics of a Monopole. The new model reduces the computational time for predicting the antenna characteristics in comparison with the traditional integral equation method. The new technique has also been developed to take account of the conductivity property of the surrounding medium. This</p>

	helps to predict the antenna fields and input impedance in different dielectric media. Results are obtained in dielectric media of high & low conductivities.
G3008	<p>A Reliable System for Non-Contact ECG Measurement with Minimal Power Line Disturbance  <b>Ahammed Muneer. K. V.</b></p> <p>Abstract—A noncontact ECG measurement scheme has many advantages over a conventional ECG measurement system. But, one of the main problems of noncontact ECG signal is its susceptibility to power line disturbances, caused by powered electronic equipments or power line wires. In this paper, a scheme for non-contact ECG measurement was first developed and its sensitivity to power line interference got suppressed using a novel signal conditioning method. After designing the suitable capacitive electrodes, the signal from the active electrodes are amplified, filtered and finally displayed in a Virtual Instrument developed in a LabVIEW environment. The simulation of the overall scheme for the suppression of power frequency disturbance has been carried out and the result shows a significant improvement in the SNR.</p>
G3009	<p>Atmospheric Plasma Treatment as Biocidal Agent  <b>Noor Albatyiah Nordin, SK Zaaba, Khairunizam Wan, AB Shahrman, and Tetsuya Akitsu</b></p> <p>Abstract—This paper reports on the result of atmospheric plasma treatment as biocidal agent using hollow tube plasma plume. The research studied on the effectiveness of plasma plume as biocidal agent. The plasma jet was generated in a hollow quartz tube with helium gas flowing freely into the surrounding air. The result of the experiment was considered based on the duration of plasma exposure and the type of bacteria. Samples of bacteria which are Escherichia coli (E. coli) ATCC25922, Pseudomonas Aeruginosa (P.aeruginosa) ATCC27853, and Staphylococcus Areus (S.areus) ATCC25923 were treated with plasma. After that, the treated sample was incubated for 24 hours in 37 °C then the results were observed and analyzed. From the result we can conclude that the plasma plume can considered as a biocidal agent for bacteria inactivation. Result also showed that exposure time varies with type of bacteria.</p>
G3010	<p>The Biochemical Changes in Patients with Chronic Renal Failure  <b>Khalidah Salih Merzah and Suhad Falih Hasson</b></p> <p>Abstract—This study was conducted in AL-Zahraa general hospital in Al-kut city/ Iraq. To assess serum urea, creatinine, lipid profile (cholesterol, TG, DHL and LDL) and thyroid hormones (FT3, FT4 and TSH) in chronic renal failure (CRF) patients it included 50 patients, 29 were males and 21 were females and their age range from 20 to 60 years. The control groups were 30; who were free from signs and symptoms of renal disease, lipid disorders, and thyroid hormones disorders, 20 were males and 10 were females, and their ages range from 22 to 66 years. The study shows that the Serum urea and creatinine concentrations in CRF patients were found to be significantly high compared with control group (<math>P &lt; 0.001</math>), Serum triglycerides concentrations in CRF patients were found to be normal or no significantly increase compared with control group (<math>P &gt; 0.05</math>), Serum cholesterol, HDL and LDL concentrations in CRF patients were found to be no significantly lower compared with control group, Serum FT3, FT4 and TSH concentrations in CRF patients were found to be no</p>

	<p>significantly lower compared with control group and No significant relationship between lipid profiles concentrations changes and thyroid hormones concentrations changes were found.</p>
G3011	<p>Effect of Diet Energy on some Reproduction Indices and Hormones at Different Phase of Estrus Cycle in Holstein Heifers  <b>Akbar Pirestani</b> and Abbas Enamei Maybodi</p> <p><i>Abstract</i>—The aim of study was determination of effects diet energy on estrogen, progesterone hormones and some reproduction indices in Holstein heifers. Sixty heifers of average bodyweight <math>320 \pm 20</math> kg were randomly divided to the two groups including: control (NRC recommendation) and high energy (HE) diet (10% higher than NRC recommendation). Heifers were fed initially 12 monthly, and used high energy diet during to 30 days. They were inseminated after observation of second heat. Blood samples were collected at the end of the feeding period in each phase of estrous cycle for the determination of estrogen and progesterone hormones concentrations to confirmed heifers pregnancy time. Also, it was evaluated reproduction indices such as service/conception rate and interval first heat to pregnancy rate. The result shows the estrogen hormone was increase in each phase of estrus in HE compare to control groups but no significantly. The progesterone hormone was significantly high of diestrus phase in HE compare to control groups. Also, lower service per conception rate and interval first heat to pregnancy rate was related to HE group but no significantly. It was concluded that high energy diet has beneficial effect on estrogen and progesterone hormones, and reproduction indices in Holstein heifers.</p>
G0033	<p>Efficacy of Glucose-Insulin Model for Sepsis Patients  <b>Athirah A. Razak</b>, Normy N. Razak, Fatanah M. Suhaimi, and Ummu Jamaluddin</p> <p><i>Abstract</i>—This paper compares the efficacy of two glucose-insulin models in terms of model fit error, both per-patient and by cohort analysis using data from sepsis patients. Patient cohort was taken from 20 septic patients admitted in the intensive care unit of Christchurch Hospital, New Zealand. Both models, previously validated from critically ill patients with various medical conditions returned a low fitting error when sepsis data alone is used. Better result was obtained from the ICING glucose-insulin model of Lin et al, with 0.28% per-patient and 1.15% by cohort in percentage of model fit error. A lower model fit error provides a better avenue for in-silico virtual trial protocols for the management of glycaemic control within sepsis patients.</p>
<b>G0008 Poster</b>	<p>Automatic Noise Removal in MR Images Using Bilateral Filtering Associated with Artificial Neural Networks  Yu-Ju Lin and <b>Herng-Hua Chang</b></p> <p><i>Abstract</i>—Noise removal in magnetic resonance (MR) images is important and essential for a wide variety of subsequent processing applications. Among the abundant denoising algorithms, the bilateral filter has been widely used in many image preprocessing procedures. However, it requires laborious tuning of parameters to obtain optimal filtering results, which is tedious and time-consuming. To address this problem, this paper is in an attempt to automate the bilateral filter based on an artificial neural network. Seven most significant attributes among 60 image attributes are used as the network input arguments. The BrainWeb</p>

	<p>image data with various scenarios of noise level, intensity non-uniformity, and slice thickness were adopted to evaluate this new system. Experimental results indicated that our automatic bilateral filter accurately predicted the denoising parameters and effectively removed the noise in MR images.</p>
<b>G0012 Poster</b>	<p>Skull Stripping in MR Images Using an Adaptive Deformable Model with Dynamic Brain Intensity Detection  <b>Yu-Sheng Chen and Herng-Hua Chang</b></p> <p><i>Abstract</i>—Skull stripping is an important preprocessing step in many medical image applications. Deformable models are powerful as they provide robust abilities to deform contours under the guidance of geometric properties. In particular, the charged fluid model has been shown its superiority over many existing deformable models. This paper is in an attempt to propose a new skull stripping algorithm based on the charged fluid model. To improve the segmentation accuracy, a new image balancing coefficient of using the local intensity difference along the normal line of the evolving curve is introduced. Stimulated by the concept of the Mumford-Shah model, the other balancing coefficient obtained from a global intensity difference between the interior and exterior of the evolving contour is also introduced to automate the segmentation process. We have adopted the BrainWeb and internet brain segmentation repository (IBSR) image datasets to evaluate this new algorithm. Experimental results indicated that our method produced high segmentation accuracy across a wide variety of brain magnetic resonance (MR) images, which is promising in many MR image processing applications.</p>
<b>G3003 Poster</b>	<p>Different Roles of Resveratrol in Regulating Light-induced RGC-5 Cell Behavior on ECIS Platform  <b>Devasier Bennet, Jasmine Pramila Devadhasan, and Sanghyo Kim</b></p> <p><i>Abstract</i>—In stress-induced products, light radiation causes dysfunction and death of RGC-5 cells, leading to retinal degeneration. We utilized resveratrol for regulating light-induced cell behavior. Monitors light-induced stress requires advanced sensitive methods for continuous monitoring. The present study, we investigated light-induced cellular dysfunction, and addressed the cell viability using an unprecedented, setup with real-time in vitro tool. Furthermore, the effects of resveratrol on light-induced damage and mechanisms were monitored, by bioimpedance (ECIS) system. ECIS measurement was used to assess cell proliferation, migration and attachment for the light-induced response of resveratrol treated cells. After exposure to light from 4 to 24 hours, 5-10 % to 20-25 % of the RGC-5 cells underwent death, through apoptosis or mitotic death. During light exposure, cells elevated noxious factors, which facilitated the cell demise. Our results revealed that resveratrol could prevent the elevation of free radical, calcium gating, nitric oxide synthase, and increased tumor necrosis factor-<math>\alpha</math>, which could diminish RGC-5 cell damage induced by light radiation. In summary, ECIS might be an effective way to study photo-toxicity with protective drugs. Also the proposed system identifies the photo-toxic effects in RGC-5 and provides high throughput drug screening for photo-oxidative damage during early stages of drug discovery.</p>
<b>G3004 Poster</b>	<p>An Innovative Method of Whole Blood Glucose Monitoring Using CMOS Image Sensor  <b>Jasmine Pramila Devadhasan, Devasier Bennet, and Sanghyo Kim</b></p>



	<p><i>Abstract</i>—Complementary metal oxide semi-conductor (CMOS) image sensors have been used previously in the analysis of biological samples. This work presents the detection of various concentration of mouse blood glucose (110-586 mg/dL) using a CMOS image sensor. Amine functionalized silica (AFSiO<sub>2</sub>) nanoparticles adsorbed poly (ethylene terephthalate) (PET) film chips were used for the immobilization of enzymes, which were then used for the assay of glucose. The oxidized glucose then produces a green colour according to the concentration and is analyzed by the CMOS image sensor as a photon detection technique; photons were detected by a photodiode in the CMOS image sensor and converted to digital numbers by an analog to digital converter. The photon number decreases with increasing glucose concentration. Combination of these two components, such as CMOS image sensor and PET film chip, constitutes a compact, accurate, low cost, precise, digital output, highly sensitive, specific, and optical glucose-sensing approach makes a promising sensor for point-of-care applications. The photophysical analyses such as FT-IR, XRD, DLS, UV-spectral analysis, and FE-SEM images were carried out successfully, and the results support the reliability and sensitivity of CMOS image sensor-based glucose sensing.</p>

**18:30pm ----- Dinner**

## Conference Venue

### The Gurney Resort Hotel & Residences Penang, Malaysia

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Conveniently located in the heart of Georgetown, our discerning guests may access to the famous Batu Ferringhi, Fort Cornwallis, Penang Hill and Kek Lok Si with all modes of transportation available in the Penang Island. As the evening unwind, the night scene in this Pearl of the Orient came alive with colorful lightings around the bustling hawker centers, providing an exceptional dining experience with the mouth-watering local delights. Surrounded by fun and food, The Gurney Resort Hotel & Residences Penang by SGI is perfect for families looking for a getaway.

## Upcoming Conferences Information:

### Welcome to Our More upcoming conferences in 2014:

DATE	NAME		PAPER WILL BE PUBLISHED BY
June 19-20, 2014 Copenhagen, Demark	<b>ICNFS 2014</b>	<u>2014 3rd International Conference on Nutrition and Food Sciences(ICNFS 2014)</u> <a href="http://www.icnfs.org/">www.icnfs.org/</a>	Volume of Journal ( IPCBEE, ISSN: 2010-4618)
	<b>ICBBS 2014</b>	<u>2014 3rd International Conference on Bioinformatics and Biomedical Science (ICBBS 2014)</u> <a href="http://www.icbbs.org/">www.icbbs.org/</a>	International Journal of Bioscience, Biochemistry and Bioinformatics (IJBBB, ISSN: 2010-3638)
	<b>ICEEG 2014</b>	<u>2014 International Conference on Environmental and Engineering Geoscience (ICEEG 2014)</u> <a href="http://www.iceeg.org/">www.iceeg.org/</a>	Journal of Environmental Science and Development (IJESD, ISSN:2010-0264)
July 04-05, 2014 Nottingham, UK	<b>ICEEA 2014</b>	<u>2014 5th International Conference on Environmental Engineering and Applications (ICEEA 2014)</u> <a href="http://www.iceea.org/">www.iceea.org/</a>	Journal of Clean Energy Technologies ( JOCET (ISSN: 1793-821X)
	<b>ICEBB 2014</b>	<u>2014 4th International Conference on Environmental, Biomedical and Biotechnology (ICEBB 2014)</u> <a href="http://www.icebb.org/">www.icebb.org/</a>	International Journal of Bioscience, Biochemistry and Bioinformatics (IJBBB, ISSN: 2010-3638)
	<b>ICBFE 2014</b>	<u>2014 3rd International Conference on Biotechnology and Food Engineering (ICBFE 2014)</u> <a href="http://www.icbfe.org/">www.icbfe.org/</a>	Journal of Medical and Bioengineering (JOMB, ISSN: 2301-3796)
July 29-30, 2014 Hong Kong	<b>ICFNT 2014</b>	<u>2014 International Conference on Food and Nutrition Technology (ICFNT 2014)</u> <a href="http://www.icfnt.org/">www.icfnt.org/</a>	Volume of Journal ( IPCBEE, ISSN: 2010-4618)
	<b>ICABC 2014</b>	<u>2014 International Conference on Advances in Biology and Chemistry (ICABC 2014)</u> <a href="http://www.icabc.org/">www.icabc.org/</a>	International Journal of Chemical Engineering and Applications (IJCEA, ISSN:2010-0221)
	<b>ICENR 2014</b>	<u>2014 International Conference on Environment and Natural Resources (ICENR 2014)</u> <a href="http://www.icenr.net/">www.icenr.net/</a>	Journal of Environmental Science and Development (IJESD, ISSN:2010-0264)
August 06-08, 2014 Singapore	<b>ICEAE 2014</b>	<u>2014 4th International Conference on Environmental and Agriculture Engineering (ICEAE 2014)</u> <a href="http://www.iceae.org/">www.iceae.org/</a>	Journal of Advanced Agricultural Technologies (JOAAT ISSN: 2301-3737)
	<b>ICCCE 2014</b>	<u>2014 5th International Conference on Chemistry and Chemical Engineering (ICCCE 2014)</u> <a href="http://www.iccce.org/">www.iccce.org/</a>	International Journal of Chemical Engineering and Applications (IJCEA, ISSN:2010-0221)

2014 APCBEES PENANG MALAYSIA CONFERENCES

	<b>ICGES 2014</b>	<u>2014 3rd International Conference on Geological and Environmental Sciences (ICGES 2014)</u> <a href="http://www.icges.org/">www.icges.org/</a>	Volume of Journal ( IPCBEE, ISSN: 2010-4618)
Sep 27-28, 2014 Bali, Indonesia	<b>ICREE 2014</b>	<u>2014 2nd International Conference on Renewable Energy and Environment (ICREE 2014)</u> <a href="http://www.icree.net/">www.icree.net/</a>	Journal of Clean Energy Technologies (JOCET, ISSN: 1793-821X)
	<b>ICCAE 2014</b>	<u>2014 2nd International Conference on Civil and Architecture Engineering (ICCAE 2014)</u> <a href="http://www.iccae.net/">www.iccae.net/</a>	Volume of Journal ( IPCBEE, ISSN: 2010-4618)
	<b>ICBMS 2014</b>	<u>2014 2nd International Conference on Biological and Medical Sciences (ICBMS 2014)</u> <a href="http://www.icbms.org/">www.icbms.org/</a>	Journal of Medical and Bioengineering (JOMB, ISSN: 2301-3796)
Oct 29-30, 2014 California, USA	<b>ICBEC 2014</b>	<u>2014 5th International Conference on Biology, Environment and Chemistry (ICBEC 2014)</u> <a href="http://www.icbec.org/">www.icbec.org/</a>	Volume of Journal ( IPCBEE, ISSN: 2010-4618)
	<b>ICPBS 2014</b>	<u>2014 2nd International Conference on Pharmaceutical and Biological Sciences (ICPBS 2014)</u> <a href="http://www.icpbs.com/">www.icpbs.com/</a>	Journal of Medical and Bioengineering (JOMB, ISSN: 2301-3796)
	<b>ICSEA 2014</b>	<u>2014 2nd International Conference on Sustainable Environment and Agriculture (ICSEA 2014)</u> <a href="http://www.icsea.org/">www.icsea.org/</a>	Volume of Journal ( IPCBEE, ISSN: 2010-4618)
Nov 29-30, 2014 Mauritius	<b>ICCEN 2014</b>	<u>2014 3rd International Conference on Civil Engineering (ICCEN 2014)</u> <a href="http://www.iccen.org/">www.iccen.org/</a>	Volume of Journal ( IPCBEE, ISSN: 2010-4618)
	<b>ICECB 2014</b>	<u>2014 3rd International Conference on Environment, Chemistry and Biology (ICECB 2014)</u> <a href="http://www.icecb.org/">www.icecb.org/</a>	Volume of Journal ( IPCBEE, ISSN: 2010-4618)
	<b>ICFSH 2014</b>	<u>2014 International Conference on Food Sciences and Health (ICFSH 2014)</u> <a href="http://www.icfsh.org/">www.icfsh.org/</a>	Journal of Advanced Agricultural Technologies (JOAAT ISSN: 2301-3737)
Dec 29-30, 2014	<b>ICESB 2014</b>	<u>2014 4th International Conference Environment Science and Biotechnology (ICESB 2014)</u> <a href="http://www.icesb.org/">www.icesb.org/</a>	International Journal of Environmental Science and Development (IJESD, ISSN:2010-0264)

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