2013 SCIEI&CBEES Thailand CONFERENCES SCHEDULE

The 2013 3rd International Conference on Power and Energy Engineering (ICPEE2013)
2013 2nd International Conference on Wireless Networks (ICWN 2013)
2013 2nd International Conference on Electronics Engineering and Informatics (ICEEI 2013)
2013 International Center for Research and Enlightenment (ICREE 2013)
2013 International Conference on Civil and Architecture Engineering (ICCAE 2013)
2013 International Conference on Biological and Medical Sciences (ICBMS 2013)

Cape Panwa Hotel

27, 27/2, Mu 8, Sakdidej Road,
Cape Panwa, Phuket 83000, Thailand
September 21-22, 2013

Sponsored by

ANNOUNCEMENT

***ICPEE 2013 conference papers will be published into Journal of Automation and Control Engineering (JOACE, ISSN: 2301-3702). Authors can get the Journal onsite.**

***ICWN 2013 will be published in the Journal of Advances in Computer Networks (JACN) (ISSN:1793-8244). Authors can get the Journal onsite.**

***ICEEI 2013 will be published in the International Journal of Electrical Energy (IJOEE) (ISSN:2301-3656). Authors can get the Journal onsite.**

*** The best presentation will be selected and announced at the end of each session. The award certificate will be presented at the end of each session.**

*** If you haven't submitted a formal photo in your registration form please provide one at the earliest possible (preferable size is 1x1 inch).**

SCIEI Publication committee

INSTRUCTIONS FOR ORAL PRESENTATIONS

- **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 10 minutes earlier before each Session)

Duration of each Presentation (Tentatively):

Regular Oral Session: about 10 Minutes of Presentation, including Q&A

- **Dress code**

Please wear formal clothes or national representative of clothing.

Conference Chair & Keynote Speaker

Sayed Chhattan Shah
Vehicle and Defense IT Convergence Research Division, Electronics and Telecommunications Research Institute
218 Gajeong-ro, Yuseong-gu, Daejeon, 305-700, KOREA

About Sayed Chhattan Shah:

Sayed Chhattan Shah is a Senior Researcher at the Electronics and Telecommunications Research Institute in Daejeon, South Korea. His current research interests include parallel and distributed computing systems, ad hoc computational Grids and mobile ad hoc networks. He received his Ph.D. in Computer Science from Korea University in 2012 and his M.S. in Computer Science from National University of Computer and Emerging Sciences in 2008. Prior to pursuing higher education, Shah has served in the National Engineering and Scientific Commission as an engineer. He has also held positions at Dongguk University, Hamdard University, ISRA University, and Hamdard ITS. Dr. Shah is an Associate Editor for the Journal of Telecommunications Systems and on the editorial board for the Computer Communication and Collaboration Journal. He is a member of IEEE, IEEE Communications Society, Korea GNSS Society, and International Association of Engineers, and has been on the program committees of various international conferences.

Keynote Address: Mobile Grid and Cloud Computing: Opportunities and Challenges

Abstract

Computational Grids and Clusters have been extensively deployed and widely used to solve complex and challenging proble ms in science and engineering areas, such as drug design, earthquake simulation and climate modeling. These systems consist of powerful computing nodes connected through high-performance communication networks. Due to recent advances in mobile computing and communication technologies, it has become feasible to use mobile nodes as a contributing entity to Grid. In liter ature, several approaches have been proposed to integrate mobile nodes with Grid and Cloud computing systems, but in these approaches mobile nodes are mostly used as terminals either to submit jobs or access services. The approaches in which mobile nodes can share computing resources are restricted to infrastructure-based communication systems, such as cellular network, and therefore cannot be used in mobile ad hoc environments.This talk will discuss research that focuses on the development of distributed computing infrastructure for sharing computing resources in mobile ad hoc environment and a next generation of mo bile and distributed computing systems where mobile nodes would be able to share computing resources with pre-existing netw ork infrastructure-based computing systems such as Grids and Clouds.

Keynote Speaker

Prof. Sezai Ercisli
Ataturk University Agricultural faculty Dept. Horticulture, Turkey

Keynote Address: Horticultural crops and human health

Onsite Registration- September 21th (Saturday)

Date	September 21th (Saturday)
Time	10:00a.m-17:00p.m
Venue	Cape Panwa Hotel in front of Tamarind Bay
Staff	Teresa Zhang ,Tracy Yang , Kuang Qiu, Amy Hu
Add & Tel	27, 27/2, Mu 8, Sakdidej Road, Cape Panwa, Phuket 83000, Thailand. Tel:(66) 0-7639-1123-5
Note	*Collecting conference materials **Delegates will get the certificate at the registration desk. ***The organizer won't provide accommodation, and we suggest you make an early reservation.

Oral Presentation-OVERVIEW September 22th (Sunday)

Venue Tamarind Bay	September 22 9:00a.m-9:05a.m	Opening Remarks **Sayed Chhattan Shah** **the Electronics and Telecommunications Research Institute in Daejeon, South Korea**	
	September 22 9:05a.m-9:50a.m	Plenary Speech 1 **Sayed Chhattan Shah** **Mobile Grid and Cloud Computing: Opportunities and Challenges**	
	September 22 9:50a.m-10:40a.m	Plenary Speech 2 **Prof. Sezai Ercisli** **Ataturk University Agricultural faculty Dept. Horticulture, Turkey** **Horticultural crops and human health**	
	September 22 10:40a.m-11:00a.m	Coffee Break & Group Photo	
Venue Tamarind Bay I	September 22 11:00-19:30	11:00-12:30	Session 1- ICPEE presentation-8
		12:30-13:30	Lunch—Café Andaman
		13:30-15:30	Session 2- ICWN presentation-10
		15:30-15:50	Coffee Break
		15:50-18:30	Session 3- ICPEE and ICREE presentation-17
		18:30-19:30	Dinner- Café Andaman
Venue Tamarind Bay II	September 22 11:00-19:30	11:00-12:30	Session 4- ICPEE presentation-8
		12:30-13:30	Lunch—Café Andaman
		13:30-15:30	Session 5- ICEEI presentation-11
		15:30-15:50	Coffee Break
		15:50-18:30	Session 6- ICBMS and ICCAE presentation-18
		18:30-19:30	Dinner- Café Andaman

September 22th (Sunday Morning)

Invite Speech

Venue: Tamarind Bay / Cape Panwa Hotel

Chair: **Sayed Chhattan Shah**

The Electronics and Telecommunications Research Institute in Daejeon, South Korea

Time: 9:00 a.m-11:00 a.m

9:00a.m-9:50a.m	Opening Remarks and Plenary Speech 1  **Sayed Chhattan Shah** **the Electronics and Telecommunications Research Institute in Daejeon, South Korea** **Mobile Grid and Cloud Computing: Opportunities and Challenges**
9:50a.m-10:40a.m	Plenary Speech 2  **Prof. Sezai Ercisli** **Ataturk University Agricultural faculty Dept. Horticulture, Turkey** **Keynote Address: Horticultural crops and human health**
10:40a.m-11:00a.m	**Coffee Break & Group Photo**

September 22th (Sunday Afternoon)

Oral Presentation-Schedule

SESSION – 1-ICPEE 2013

Venue: Tamarind Bay I / Cape Panwa Hotel

Session Chair: **Prof. Rade Ciric**

Time: 11:00a.m-12:30p.m

11:00a.m-12:30p.m	
E012 **Ms. Saher UMER** 	System Design and Analysis for Maximum Consuming Power Control in Smart House Saher UMER, Mineo KANEKO, Yasuo TAN and Azman Osman LIM Japan Advanced Institute of Science and Technology (JAIST),Ishikawa, Japan **Abstract** The efficiency, reliability, and stability of the smart house is expected to be significantly improved via home energy management system (HEMS), and smart meter (SM) is the most essential part of the energy system used to connect individual home appliance to the energy management system. As more and more home appliances and consumer electronics are deployed, the power consumption in smart house (1) tends to grow and (2) leads an increase in the risk of power blackout. In this paper, we propose a system design for controlling maximum consuming power and preventing home blackout. Proposed system consists of SM and home appliances, and we assume that SMwill provide access to the power generated and consumed of the appliance, but with a time delay. Then, we analyze the resulting designto illustrate the impact of SM, for two important properties of the smart house, preventing power blackoutand maintaining power system stability. We also present the simulation results which show the appliance power consumptionbehavior when the available power is limited. Simulation results also help us in applying stability test with stable/unstable and overshoot/non-overshoot regions.
E1006 **Asst. Prof. Elmer R. Magsino** 	Predicting Converter Utilization Convergence under Various Dynamic Loading Conditions of Paralleled Converters Elmer R. Magsino, Jessica C. Cabiles and Mark Ryan S. To Electronics and Communications Engineering Department, Gokongwei College of Engineering, De La Salle University - Manila, Taft Avenue, Philippines **Abstract** In this paper, converter utilization equalization under various dynamic loading conditions experienced by parallel buck converters were observed. Equalization of converter utilization is ensured by using fuzzy logic control while output voltage regulation and current sharing between converters is maintained by employing sliding mode control. This research work has also contributed the derivation of the working equation in determining the converter's utilization point of equalization even in dynamic loading. Simulation results have confirmed that the value solved from the working equations are correct and equal to the value of the utilizations each of the converters converged under a given dynamic load.
E1005	Equalizing Converter Utilization Using a Fuzzy Decision Mechanism based on Input

Asst. Prof. Elmer R. Magsino 	Voltage Perturbation and Time of Usage Elmer R. Magsino, Jessica C. Cabiles and Mark Ryan S. To Electronics and Communications Engineering Department, Gokongwei College of Engineering, De La Salle University - Manila, Taft Avenue, Philippines **Abstract** In this paper, fuzzy logic was used to provide the information on the probability of turning ON of four parallel converters using the converter utilization parameter and the input voltage perturbation. Each converter is designed having equal values of inductances and capacitances but with different parasitic resistances and was modelled using MATLAB/Simulink environment. Based on the output probabilities, the appropriate converter/s to turn ON will be turned ON by an enable circuit written in MATLAB code resulting to a well-balanced utilization of all converters. The specified input voltage of each converter is set to be 20 volts with different variances. Since each converter utilizes different supply voltages, the supply voltage is fed to a Gaussian noise realized through a random generator block to provide the variance around 20 volts. The voltage and current errors of each converter were sampled and fed into a discrete controller to regulate its output voltage. Between active converters sharing the load, the average current sharing/ democratic sharing method was used. In this paper, it was found that the fuzzy logic controller can be used to control parallel digital converters to properly balance converter utilization. Simulation results are presented including the static and dynamic loading responses.
E008 **Ms. Parimita Mohanty** 	Role of Power Converters in Distributed solar Power Generation Parimita Mohanty The Energy Research Institute (TERI), India Habitat Center, Lodhi Road, New Delhi;110003 **Abstract** All the RE systems require specific power electronic converters to convert the power generated into useful power that can be directly interconnected with the utility grid and/ or can be used for specific consumer applications locally. The roles of these power converters become very critical, particularly when it is used in one of the most expensive energy generating sources such as solar PV. Since power converter/inverter are the interface of the distributed power system, any premature failure of such system will make the entire system defunct and thus need to be selected appropriately. These power converters need to be selected and designed optimally in order to provide maximum energy efficiency, ensuring reliability and safety of the overall solar PV system, required for different applications. This paper focuses on classification of inverters and present how an best fit inverter can be selected for a particular distributed solar PV applications based on its control scheme, PV array configurations, operational and safety features etc. The paper also covers the review of inverters and brings out few findings on the performance of various existing inverters available in the market based on a systematic analysis done by the author.
E1007 **Prof. Rade Ciric**	Techno-Economic Analysis of Biogas Powered Cogeneration Rade Ciric, Zoran Kuzmanovic Higher Education Technical School of Professional Studies Skolska 1, 21000 Novi Sad, SERBIA **Abstract** Climate change, mainly caused by increased greenhouse gases, and reduced

	fossil fuel reserves, has launched a more intensive use of renewable energy on a global scale. One example of application of the renewable energy is the use of biogas which is produced from livestock manure at the farmyards. The most important goal of building a biogas plant is the environment protection. In addition, it is possible to realize the positive socio-economic effects, promote rural development and make better use of human and material resources at the local level. However, the construction of cogeneration heat and power plant is a complex technical, organizational and investment venture. The objective of this paper is to present a feasibility analysis of biogas power plants for combined heat and power generation including different aspects such as available biomass resources, heat and electricity producing, verification of the requirements for connecting power plant to the grid, as well as analysis of the economic viability.
E016 **Jeyagopi Raman** 	Mitigation of Voltage Sags by Dynamic Voltage Restorer Jeyagopi Raman and Arwinder Singh Jigiris Faculty of Engineering, INTI International University, Nilai, Negeri Sembilan, Malaysia **Abstract** Voltage sag is the most severe type of power quality disturbance faced by many commercial and industrial customers. The proliferation of voltage sag load equipment used in industrial plants may cause tremendous economic and financial losses up to millions of dollars attributed to a single disruption. Therefore, it is very important to mitigate the impact of voltage sags on sensitive equipment. In this paper, Dynamic Voltage Restorer (DVR) is used to mitigate the voltage sag during fault condition. DVR is considered to be the most efficient and effective mitigation device. The method to calculate the DVR devices for the fault calculation, were consider in this paper, as well as the control strategy. The mitigation technique was applied to an IEEE 30-buses electrical network to illustrate its application. The results show that the mitigation technique is able to mitigate voltage sag. Analyses of the voltage sag magnitude had shown the different with and without DVR for the network system.
E3012 **Reggie C. Gustilo** 	Optimization of a Small Scale Dual-Axis Solar Tracking System Using nanoWatt Technology Jay Robert B. del Rosario, Reggie C. Gustilo and Elmer P. Dadios College of Engineering, De La Salle University Taft, Manila 1004 PHILIPPINES **Abstract** **Abstract**—The solar module will be positioned first in North, East, West or South. Then, the PV array will automatically search and stop at the highest current gained by the solar cell. This will occur every 30 minutes from 0600H up to 1800H. In these positions the values of current, voltage and power were measured. The design focuses on different applications in a small farm setting with fan, incubator, aquarium pump motor and lightning. In essence, highlighted are the technical concepts of solar energy for electricity generation.
E3001 **Asst. Prof.Jose B. Lazaro**	Surface Electromyography Signal for Control of Myoelectric Prosthesis of The Upper-Limb Using Independent Component Analysis Jose B. Lazaro Jr., Donabel D. Abuan, Noel B. Linsangan, Ayra G. Panganiban Mapúa Institute of Technology, Intramuros, Manila, Philippines De La Salle University, Manila, Philippines **Abstract** An electromyography signal that was taken from the surface of the stump-muscle

	of an amputee is used to control over the myoelectric prosthesis. We present a method of acquiring these signals over the surface of the skin by using a surface-EMG electrode connected to it. In this study, a five fingered prosthetic hand, actuated by five motors, one motor for each finger was used to simulate some of the hand action movements and assess its capability of giving control over each hand action movement. The study was concerned with the signal acquisition that controls the myoelectric prosthesis. ICA was applied to separate mutually independent components that are the result of surface electromyography signals which provided a promising method in the classification of hand action movement based on each level of muscle contraction. The study determined the pattern of each hand action based on the correlation between estimated percent Muscle Voluntary Contraction (%MVC) vs. degree of movement of the motor, and the correlation between the motor frequencies vs. the degree of movement of the motor.
12:30p.m-13:30p.m Lunch—Café Andaman	

SESSION – 2-ICWN 2013

Venue: Tamarind Bay I / Cape Panwa Hotel

Session Chair: **Prof. Masashi Sugano**

Time: 13:30 p.m-15:30 p.m

13:30p.m-15:30p.m	
W004 **Assoc. Prof. Song-Kyoo Kim** 	Cloud Server Management Method with Random Remote Backups Song-Kyoo Kim Asian Institute of Management **Abstract** A Cloud service provides the use of computing resources (hardware and software) that are delivered as a service over a network. The name comes from the use of a cloud-shaped symbol as an abstraction for the complex infrastructure it contains in system diagrams. Cloud computing entrusts remote services with a user's data, software and computation. This paper is dealing with the stochastic Cloud server management method which is focused on reliability. The (remote) backup cloud servers are hooked up by the long-haul network and replace broken main cloud severs immediately. If the Cloud servers are represented as "machines" this system can be solved by using the stochastic maintenance model with main unreliable and random auxiliary spare (remote backup) machines, subject to random breakdowns, repairs and two replacement policies: one for busy and another - for idle or vacation periods. When the repair facility is not available because of the given conditions, auxiliary machines are being used for backups. Unlike existing models, the availability of auxiliary machines is changed for activations of the system. Analytically tractable results are obtained by using a duality principle, semi-regenerative analysis, and multi-variate marked renewal processes. The results are demonstrated in the framework of optimized Cloud server allocation problems with unreliable backup servers.
W006 **Assoc. Prof. Min-Te Sun**	Distributed Compressive Data Aggregation in Large-Scale Wireless Sensor Networks Tsung-Yi Tsai,Wei-Chi Lan,Chunlei Liu,and Min-Te Sun the Department of Computer Science and Information Engineering, National Central University **Abstract**

	As wireless sensor networks are used extensively in environment and habitat monitoring, the large volume of data transmission can increase the workload of the sensor nodes and reduce their useful lifetime. The compressive sampling techniques have been proposed to reduce the volume of data transmission when the data is sparse in certain domain. While finding the optimal routing path that minimizes data traffic is an NP-complete problem, a near-optimal routing protocol in the literature requires omniscient knowledge of the entire network and thus incurs extensive message exchanges in real applications. In this paper, we propose a distributed algorithm that uses local minimization to dynamically construct a routing path to reduce the data traffic for compressive sampling based aggregation. This algorithm does not require the omniscient knowledge of the global network topology and incurs much lower overhead than the near optimal solution, and therefore, is more suitable for practical applications.
W1009 **Assoc. Prof. Xiaomin Wang**	Data Evacuation for Wireless Sensor Networks in Disaster Areas Xiaomin Wang, Ming Liu, Bang Liu the School of Computer Science and Engineering, University of Electronic Science and Technology of China **Abstract** With the increasing incidence of disasters, wireless sensor networks (WSNs) have been widely proposed to provide information for post-disaster relief operations. However, the normal assumption in pervious schemes that the deployed sensor networks can tolerate the damage caused by disasters is invalid. In reality, many significant data are blocked and eventually lost when the connectivity and coverage of WSNs are destroyed. In this paper, we demonstrate Data Evacuation (DE), a system which takes advantage of the survival time of the WSN to transmit critical data to sensor nodes in the safe area.
W016 **Prof. Masashi Sugano** 	Evaluation of Data Collection Capability in a Large-Scale Smart Metering System Based on Receiver-Driven Multihop Communication Masashi Sugano, Taichi Shimizu, Naoki Wakamiya the School of Knowledge and Information System, Osaka Prefecture University, Habikino-shi, 5838555 Osaka, Japan **Abstract** We consider a large-scale smart metering system based on intermittent receiver driven transmission and potential-based routing, both of which have been developed for wireless sensor networks. In this paper, we evaluate the performance of such a system by simulations and show that it is possible to collect 99% of data within 10 minutes in a system of 1600 nodes
W1015 **Ms.SIBANI.P.SENJI** 	RFID based system for navigation of tourists SIBANI.P.SENJI , NETHRA PRIYADARSHINI.J. **Abstract** The main problem that tourists face in India is related to navigation .since they are not able to communicate properly because of varied languages present in India .They do not use the public transport system too. The system suggested in this paper is to guide such visitors from other country and also people from other states in the country. RFID-based public transport ticketing systems rely on widespread networks of RFID readers that locate the user within the transport network in real time to be able to verify whether he can travel at that time with the ticket he holds. This paper presents a system that uses that same RFID-based location information to give the user navigation indications depending on his current location, provided that the user has indicated beforehand the places he intends to visit. This system is designed to be cost effective.
W015 **Prof. Saymon Castro de Souza**	A rule-base approach for WSN application development in a cloud environment Saymon Castro de Souza, José Gonçalves Pereira Filho, and Eugênio Fraga Spessimille

	the Federal Institute of Espirito Santo, Brazil **Abstract** The development of applications for wireless sensor networks can be a challenging task, requiring the developer to be knowledgeable of low-level issues from sensor platform, operating system, and programming language together with knowledge of the application domain. One consequence of this scenario is that the WSN programmer receives an overload of demands of development, due to the low participation of the domain expert in the direct definition of rules, events and high-level requirements of the application. This fact can be explained, in part, due to the absence of mechanisms to promote the participation of the domain expert in the process of developing the application. This somewhat complicates the process of universalization of applications based on wireless sensor networks. This paper presents an architecture to face this issue. The proposed solution is based on the integration of rule-based system with sensor-cloud computing environment.
W018 **Mr.Tan Soo Fun** 	Review of Mobile Macro-Payment Schemes Tan Soo Fun, Leau Yu Beng, Mohd Norhisham Razali the School of Engineering and Information Technology, Universiti Malaysia Sabah, 88400 Malaysia **Abstract** The increasing development of wireless networks and the widespread popularity of handheld devices such as Personal Digital Assistants (PDAs), mobile phones and wireless tablets represents an incredible opportunity to enable mobile devices as a universal payment method, involving in daily financial transactions. Unfortunately, designing a secure mobile payment schemes is more challenging than wired payment protocol due to the constraints of wireless network and mobile devices. The existing Public Key Infrastructure (PKI) based electronic payment protocol such as Secure Electronic Protocol (SET) and Internet Payment Protocol (iKP) cannot be directly adopted in wireless environment. Over the past ten years, a numerous of mobile macro-payment schemes have been proposed to solve the challenges of these constraints. As a result, this paper aims to summarizes the work of researches over the past ten years and four significant macro-payment schemes: KSL protocol, Anonymous protocol, Private Protocol and Secure Agent-based Protocol have been selected and further discussed. This paper gives a readers an overall idea of mobile macro-payment schemes and notably recommends both academic and industry researchers to complement each other, adopt the standardized and shared development.
W019 **Prof.Neng-Chung Wang** 	Grid-Based Data Aggregation for Wireless Sensor Networks Neng-Chung Wang, Yung-Kuei Chiang, Chih-Hung Hsieh, and Young-Long Chen the Department of Computer Science and Information Engineering, National United University, Miaoli 360, Taiwan, ROC **Abstract** In a wireless sensor network (WSN), a huge number of sensor nodes with limited battery power are generally deployed over a severe field to gather data. It is impractical to recharge or replace the batteries of the sensor nodes in such a severe environment. Therefore, an energy efficient protocol is essential to maximize the lifetimes of nodes. In this paper, we propose a grid-based data aggregation scheme (GBDAS) for WSNs. We partition the whole sensor field into a 2-D logical grid of cells. In each cell, the node with the most residual energy takes turn to be the cell head, responsible for aggregating its own data with the data sensed by the other sensor nodes of the cell, and then transmitting it out. In order to reduce the data transmissions to the base station (BS), we further link each cell head to form a chain. In the chain, the cell head with the most residual energy is designated in turn as the chain leader. Aggregated data moves from head to head along the chain, and finally the chain leader transmits to the BS. In GBDAS, only the cell heads need to transmit data toward the BS. Therefore, the data transmissions to the BS substantially decrease. Besides, the cell heads and chain leader are designated in turn according to the energy level so that the energy

	depletion of nodes is evenly distributed. Simulation shows that GBDAS outperforms Direct and PEGASIS.
W021 **Prof.Young-Long Chen** 	Applications for improving geographic routing paths in wireless sensor networks Young-Long Chen, Wei-Jun Ding, Yung-Chi Chang and Neng-Chung Wang the Department of Computer Science and Information Engineering, National Taichung University of Science and Technology, Taichung 404, Taiwan **Abstract** This paper proposes the Geographic Multicast Fermat Point (GMFP) architecture with an Inside Relay Node (IRN). We use Fermat Point architecture to find the relay Fermat Point node to reduce the distance between received nodes. We also use the Energy-Efficient Beaconless Geographic Routing (EBGR) method to effectively find the optimal relay node position and reduce energy consumption between source nodes and Fermat Points, so that packets are forwarded for all relay nodes. Simulation results show that total energy consumption of GMFP architecture with an IRN outperforms that of GMFP architecture, thereby extending the system lifetime.
W017 **Dr.Azita Laily Yusof** 	Handover Adaptations for Load Balancing Scheme in Macrocell/Femtocell LTE Network Azita Laily Yusof, Nurul Husna Md Yusoh, Norsuzila Ya'acob, Mohd Tarmizi Ali the University of Technology MARA, 40450 Shah Alam, Selangor, Malaysia (e-mail: laily012001@yahoo.com). **Abstract** In the purpose of offering extensively higher data rates, higher systems throughput and lower latency, the femtocell systems in 3GPP LTE system has premeditate. In a large number of femtocells, there are too many prehandover and unnecessary handover processes frequently among femtocells may occur. Also, call failure due to handover may increase when the mobile moves from one serving cell to another cell. High number of switching load will occur due to the ping-pong effect. Handover procedures for existing networks are needed to support the macrocell/femtocell integrated network. This paper proposes a modified handover procedure between macrocell and femtocell network. A handover algorithm is proposed based on Received Signal Strength (RSS) and speed of the UE to improve the handovers between the macrocell and femtocell in LTE network. The result shows that the unnecessary handover and handover failure can be optimized using modified handover in this macrocell and femtocell integrated network. Thus, the deployment of femtocell can increase the handover performance as well as offloading the macrocell traffic.
15:30p.m-15:50p.m coffee break	

SESSION – 3-ICPEE and ICREE 2013

Venue: Tamarind Bay I/ Cape Panwa Hotel

Session Chair: **Mark Lorenze Torregoza**

Time: 15:50p.m-18:30p.m

15:50 p.m-18:30 p.m	
E3014 **Mr.M. Effendy Ya'acob**	Real Time Monitoring and Analysis of Tropical Impact on PV Performance Based on LabVIEW Architecture M. Effendy Ya'acob, Hashim Hizam, M. Amran M. Radzi Department of Electrical & Electronics, Faculty of Engineering, Universiti Putra Malaysia **Abstract**

	This paper presents a systematic, real-time and synchronized monitoring system for a 6-parameter tropical environmental elements and the energy performance of 3 types of Photovoltaic (PV) generator systems with the total generation capacity of 10kW. Based on recent studies, PV technology and application is economically viable to be adopted in tropical countries like Malaysia where it receives more than 6 hours of direct sunlight each day throughout the year. The task aims to feasibly integrate all 6 climatic parameters of Radiation, Temperature, Wind, Humidity, Light Intensity, and Rain using graphical LabVIEW software and cRIO as means of Data Acquisition and Real Time Monitoring (DART) system. This approach creates a unique platform interface for Solar PV Monitoring Station (SPMS) to capture measurement from multiple sources and analyze visually in real-time and synchronize mode which is the crucial aspect for rapid fluctuating data flow. This information will be the source of reference in designing a complete PV generator system cited in the tropics. The detail hardware integration, data flow process and SPMS system are further discussed.
E3010 **Mr.Salah Salem Ali Humadi**	Devise simplified equation to calculate the percentage of wasted heat with exhaust gases, and to calculate the coefficient of the overall efficiency of the boiler that burns heavy fuel oil Salah Salem Ali Efficiency And Test Senior Engineer Al-HISWA Thermal Power Station -Aden **Abstract** This research had come as a result of practical demand that is finding simple and quick solution formula, with great accuracy to count the heat loss with exhaust gases (q2) in the boiler, and also count the total efficiency (ηg) of the boiler , so that it to be facilitated the specialist researcher to find out (ηg) immediately without going to the long equations. The research methods depended on reducing from the unknown values, and on reducing the modulus basis of nearest fixed values. The main characteristic of the extracted equation to find out the heat loss with exhaust gases (q2) is that it has 3 unknown values and one constant only. The extracted equation had been tested and compare its results with the reference test after installation the boiler of AL-HISWA POWER STATION by the manufacturing authority by hand account method, or and also with the tests after the over haul maintenance which had been done by computer program. And the comparison results were excellent, so that the error rate in finding out (q2) is -1.91% only, and maximum error rate of finding out (ηg) is (-0.1%), and sometimes the error was zero.
E004 **Dr.Takashi Takeuchi** 	Evaluation of Wireless Communication Performance in a Li-ion Battery System Takashi Takeuchi,Takahide Terada Central Research Laboratory, Hitachi, Ltd., Kokubunji, Tokyo, Japan **Abstract** Communication performance of a wireless Li (lithium)-ion battery system was evaluated. The evaluation results showed that in the metal chassis storing the battery modules, the reliability of wireless communication is degraded under the influence of reflection of radio waves. Moreover, it was revealed that the characteristic of radio-wave propagation in the battery chassis becomes a Rayleigh distribution. We evaluated the communication performance by using ZigBee radio modems, and we indicated that a packet-error rate of 1.33×10-5 can be achieved by choosing the frequency channel appropriately, even though the radio modem is inside of closed metal chassis.
E3007 **Mr. Salman Hassan**	Hydrogen production via ultrasound-aided alkaline water electrolysis Salman Hassan Zadeh

Zadeh	University of Birmingham,Department of Chemical Engineering, Birmingham, UK **Abstract** Clean energy is a necessity in today's world bearing in mind the undesirable effects of fossil fuel consumption and contributory industries on climate change and human health. The renewable energy resources are introduced as an alternative choice to fossil-based fuels benefiting from abundance, reliability, cleanness in addition to the fact that they are environmentally friendly. Hydrogen as a clean energy carrier is a great candidate for a safer and cleaner future. Alkaline water electrolysis among various hydrogen production methods is a promising technology to produce pure and clean hydrogen. This technology is optimized when coupled with an ultrasonic field resulting in an enhancement in the rate of hydrogen production. The literature studies point out an improvement in mass transfer and 10%-25% energy saving when using the ultrasound. This research work continues the previous study done in this area by investigating the effects of the ultrasound on a conventional water electrolysis cell, furthermore other important parameters were subject of change namely as electrode active surface area and electrolyte solution. The hydrogen generation was measured using a digital hydrogen flowmeter. The average production efficiency of the electrolysis cell was 78%. It was determined that the ultrasound improved the production efficiency by 4.5% and energy efficiency by 1.3%. The act of the ultrasound resulted in bubble removal from the surface of the electrode and the electrolyte solution therefore prepared the electrode surface for the electrochemical reactions thus enhanced the hydrogen generation.
E3003 **Assoc. Prof Gerald Arada** 	Development of a Power Monitoring System for Backup Lead-Acid Batteries Gerald P. Arada, Elmer R. Magsino Electronics and Communications Engineering Department Gokongwei College of Engineering De La Salle University, Taft Avenue, Manila, Philippines **Abstract** In this paper, a power monitoring system intended for verifying backup lead-acid batteries parameters such as voltage level, battery temperature and charge capacity is developed. Such system is capable of doing the following: 1) switching between available bad and good conditioned lead-acid batteries without interrupting power service, 2) automatic charging of lead-acid batteries, 3) integrate a power/demand analyzer for determining appropriate power rating before switching lead-acid batteries. The setup experiment consists of five 6V (4Ah for 10 hours) and five 12V (5Ah for 10 hours) lead acid batteries which can be configured in different series or parallel connections and various lighting loads. Experiments show successful switching between batteries without power interruption, lead-acid parameter monitoring and automatic charging.
E023 **Mr.Jay Kalinani** 	A Primary Energy Conversion System and Design Analysis of a Tokamak Experimental Fusion Reactor Jay V. Kalinani Nuclear Science and Engineering, SRM University Katankullathur, Chennai, TN – 603202, India **Abstract** Major efforts are underway to define the objectives of a Tokamak Experimental Fusion Reactor (TEFR). A tokamak is a toroidal chamber that uses a strong toroidal magnetic field to contain high temperature plasma within the torus. Charged particles cannot easily move across strong magnetic fields, and if the fields are closed into nested surface, then deuterium and tritium ions trapped in this way and colliding with sufficient energy to overcome their repulsive Coulomb potential, will fuse and liberate energy. The ultimate goal of this study is to establish the scientific and engineering basis for a detailed reactor design. This paper will concentrate on the TEFR primary energy conversion system (PECS). The PECS includes all the components that lie between the plasma and the toroidal field coil.
E3009	External Flashover of Generator Circuit Breaker in Coastal Power Plants having Air

Mr.Bishnu Prasanna Nanda  **Mr. Pramod Kumar Saxena** 	Insulated Switchyard: Journals of the Engineering and Technology Publishing Bishnu Prasanna Nanda, Pramod Kumar Saxena Adani Power Training and Research Institute, Ahmedabad, India **Abstract** The breaker flashover can be either internal or external. External flashover is mainly due to deposition on the external surface of the contact housings. In case of Power Stations in coastal areas, salt deposition takes place because of saline atmospheric pollution. Breaker flashover is an abnormal condition and may result in severe damage to capital equipment like Generator and Generator Transformer. Additionally it may also result in explosion of Circuit Breakers which can damage nearby equipment in Switchyard and put Substation personnel at risk. Numerical relays used for Generator Protection have the feature to detect breaker flashover condition and quickly isolate the equipment. This paper describes such problems at Mundra Thermal Power Plant in western coast of India and also dwells upon the causes, protection philosophy, preventive measures and recommendations
E4010 **Mr.Dawid Janas** 	Improved Performance of Ultra-Fast Carbon Nanotube Film Heaters Dawid Janas, Krzysztof K. Koziol University of Cambridge/Department of Materials Science and Metallurgy, Cambridge, UK **Abstract** With current level of development, mankind is about to face many energy-related problems unless we find ways for more efficient power generation and transmission. In this paper, we depicted the operation of high-performance carbon nanotube film heaters, which show a clear advantage over traditionally employed materials. The material was synthesized by a facile one-step method and used as resistive heating element. The results have shown very effective conversion of electric power into heat. To improve the homogeneity of the heaters electrical resistance, we explored a selection of volatile solvents. Such a pretreatment step prior to heaters use caused densification of the material and favorable changes to the electrothermal behavior.
E4011 **Assoc. Prof.Mark Lorenze Torregoza** 	Effects of Quantization on Digital Buck Converter Switch Mode Power Supply Mark Lorenze Torregoza, Elmer Magsino, Jessica Magsino Electronics and Communications Engineering Department,Gokongwei College of Engineering,De La Salle University - Manila, Taft Avenue, Philippines **Abstract** The development of power supplies has evolved from using linear or series regulator to switch mode power supplies (SMPS). Nowadays, SMPS have employed the use of digital controllers such as microcontrollers and digital signal processors (DSP's) to provide compensation, housekeeping, fan control, communication, etc. The main advantages of using a digital controller are: insensitivity to environment and component tolerances, repeatability, predictability, flexibility and size reduction of power supply units (PSUs). These are very much appealing to the designer's viewpoint; however, these come with disadvantages such as limitation in bandwidth due to sampling rate, peripheral's speed and high prototyping cost.In this paper, we observe one of the existing problems revolving around the use of digital controllers in SMPS, i.e. quantization.
E007 **Jirawadee Polprasert**	Stochastic Weight Trade-Off Particle Swarm Optimization for Optimal Power Flow Luong Dinh Le, Jirawadee Polprasert, Weerakorn Ongsakul, Dieu Ngoc Vo, and Dung Anh Le Energy Field of Study, School of Environment, Resources and Development Asian Institute of Technology, Pathumtnani 12120, Thailand

	Abstract This paper proposes a stochastic weight trade-off particle swarm optimization (SWT-PSO) method solving optimal power flow (OPF) problem. The proposed SWT-PSO is a new improvement of PSO method using a stochastic weight trade-off for enhancing search its search ability. The proposed method has been tested on the IEEE 30 bus and 57 bus systems and the obtained results are compared to those from other methods such as conventional PSO, genetic algorithm (GA), ant colony optimization (ACO), evolutionary programming (EP), and differential evolution (DE) methods. The numerical results have indicated that the proposed SWT-PSO method is better than the others in terms of total fuel costs, total loss and computational times. Therefore, the proposed SWT-PSO method can bee a favorable method for solving OPF problem.
E019 **Assistant Professor.Abhishek Kumar** 	Performance Comparison of Control Algorithms for Load Compensation using D-STATCOM under Abnormal Source Voltage Abhishek Kumar, Vinay Kumar Dwivedi, Santanu Maity and Mohit Bajaj Department of Electrical & Electronics Engineering, NIT, Arunachal Pradesh, India-791112 **Abstract** Distribution Static Compensator (D-STATCOM) is a custom power device which compensates reactive power and mitigates unbalances caused by various loads in distribution system when it is operated in current control mode. When D-STATCOM is used for load comprehensive compensation, the precision in detecting the compensation current required by the system is very important for compensation effects. There are many detection methods at present. This paper evaluates and analyses three different conventional and extensively used methods of determining the compensating current for a D-STATCOM under abnormal voltage conditions i.e. asymmetric and distorted source voltages and makes comparison of the performance of each one. The algorithms compared are instantaneous reactive power theory (IPRT), synchronous reference frame theory (SRF) and I-cosϕ algorithm. All three algorithms are simulated under MATLAB environment using Simulink. The theoretical analysis and simulated results illustrate the performance and correctness of these algorithms under asymmetric and distorted source voltages. Finally, the comparison of simulated results has been done to show the accuracy in detecting the harmonics and effectiveness of compensation under abnormal voltage conditions..
ICREE2013	
E0004 **Assistant Prof. Lakshmi Narasamma N** 	A new active soft switching technique for pulse width modulated full bridge DC-DC converters. Naga Brahmendra Yadav Gorla and Lakshmi Narasamma N Indian Institute of Technology, Madras Chennai **Abstract** A new active soft switching circuit for Zero Voltage Switched Pulse Width Modulated (ZVS-PWM) full bridge converter is presented in this paper. The proposed circuit has two auxiliary circuit cells (Auxiliary circuit cell-1, Auxiliary circuit cell-2), one for each ground referred active switch. Auxiliary circuit cell consists of an active switch, a diode, a resonant inductor and a capacitor, and a coupled winding derived from main power transformer. Auxiliary circuit when gated properly creates zero voltage across the main switch during its turn-on. Winding coupled to the power transformer helps in resetting auxiliary inductor current to zero and hence turn-off of auxiliary switch is lossless. Operation of proposed circuit with necessary mathematical expressions are presented. Circuit simulation results of the proposed active soft switched ZVS-PWM full bridge converter are presented.
E0013 **Ph. D Adzuieen Nordin**	Carbon DioxideEmission Analysis of Chilled Water Production by Using Gas Turbine Exhaust Heat Adzuieen Nordin and Mohd Amin Abd Majid UNIVERSITI TEKNOLOGI PETRONAS MALAYSIA

Abstract

Carbon dioxide from exhaust heat emission is one of the major contributorsto the environmental pollutant in power generation plants. This problem could be addressed if the emitted exhaust heat is recovered. In cogeneration plant, the exhaust heat from the gas turbine is used to generate steam usingHeat Recovery Steam Generator. The steam from Heat Recovery Steam Generator is then used for chilled water generation in Steam Absorption Chillers by absorption process. This study analyzed the total estimated amount of CO2 released to the environment due to chilled water production by using gas turbine exhaust heat. University Teknologi PetronasMalaysia cogeneration system is used as a case study. The energy balance principlewas adopted for the analysis. Results indicate that approximately 44% of CO2is avoided from being released to the environment by this process.

E0019

Lecturer

Mujahid Tabassum

Integration of Solar and Wind Power to a Borneo-wide Power Grid

Salim S. Maaji,Duaa Fatima S. Khan, Manas K.Haldar, Mujahid Tabassum and Prashobh.Karunakaran

Abstract

This paper examines the possible incorporation of solar and wind power in the East Malaysia power grid. Possible sites for solar and wind power generations are considered. Results from the simulation of the renewables integrated with the existing power grid, keeping in view problems like synchronization and faults, are given. It is proposed to replace the centralized supervisory and data acquisition system (SCADA) by a distributed Internet based network. This network runs on MultiprotocolLabel Switching (MPLS) topologyand core and edge routers are connected with Local Area Networks (LAN) at points of generation and distribution connected by fiber optics cables to form a Wide Area Network (WAN). Some results from the simulation of the communication network are given.

E2005

Master

N.

Phobdhamjarenjai

Potential Energy Resources from Dipterocarp Leaf Litter and the Potential in Air Pollution Reduction in Mae Hong Son Province, Thailand

N. Phobdhamjarenjai, S. Chairuangsri, B. Ratanasthien, and S. Chantara

Abstract

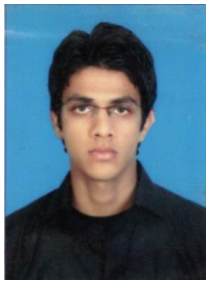
Dense clouds of smoke hang in the air over the Mae Hong Son province caused by intense forest fires is a significant source of air pollution which is the most hazardous to environment and public health, particularly during November to April each year. This study is aimed to exploit the energy potential of leaf litter from various plants in dipterocarp forest of Mae Hong Son Province. Five tree species with high IVI show the energy potential as follows: Shorea obtusa 4,950 Kcal/Kg, Dipterocarpus tuberculatus 4,679Kcal/Kg, Shorea siamensis 4690 Kcal/Kg, Dipterocarpus obtusifolius 4674 Kcal/Kg and Quercus kerrii 5137 Kcal/Kg.

During the fire season there is an average of 449.58 tons of leaf litter per Rai (1600 m2).We can collect these leaves and turn them into fuel which means reducing the percentage of air pollution and the amount of firewood the inhabitants gather for their use up to 86,400 tons per year.

E2015

Master

Ahmed Ali Baig



Estimation of Failure Probability Using Fault Tree Analysis and Fuzzy Logic for CO2 Transmission

Ahmed Ali Baig and Risza Ruzli

Abstract

In this paper a methodology is presented to estimate the probability of failure of CO2 transporting pipeline. The causes of failure are analyzed using Fault Tree Analysis (FTA) and the scope of study is emphasized on the puncture or holiday formations in pipelines due to corrosion eventually leading to leakage of CO2. For new systems the ambiguity in data or unavailability of failure data is one of the key problems encountered. Therefore a methodology is presented in this paper that uses expert's elicitation and converts it into crisp failure data using Fuzzy Logic approach. The combination of FTA with fuzzy logic will help in artificially generating the unavailable data. The puncture scenario of some existing CO2 pipelines is also presented in this paper.

E1009(poster) **Master** **Young-Gyun Seo** 	Application of response surface methodology for enhanced biodiesel production from rice bran Young-Gyun Seo and Dae Sung Lee **Abstract** In this study, rice bran was used as a non-expensive, renewable bioresource for biodiesel production. First a pilot-scale oil mill was developed to produce crude oil from raw rice bran. The pretreatment of the oil was then investigated for the production of high-quality biodiesel in the subsequent processes. Especially, the large amounts of free fatty acids were lowered as they would react with an alkali catalyst to produce soaps that inhibit the reaction. Finally, three key operational parameters-temperature, the amount of catalyst and methanol concentration-were selected and their individual and mutual effects on biodiesel production were investigated in a batch system. A Box-Behnken design and response surface methodology (RSM) were employed to determine the optimum conditions for enhanced biodiesel production. The experimental results showed that the RSM with the Box-Behnken design was a useful tool for achieving a high rate of biodiesel production from rice bran oil.
E024(poster) Onder Turan	Some Exergetic Measures of a JT8D Turbofan Engine Onder Turan, Hakan Aydın, T. Hikmet Karakoc and Adnan Midilli Faculty of Aeronautics and Astronautics Anadolu University, TR-26470 Eskisehir, Turkey **Abstract** In this article, some exergetic measures are calculated for a JT8D turbofan engine at takeoff. Selected exergetic measures in this study are as follows: fuel depletion ration, productivity lack ratio, fuel exergy factor, product exergy factor and improvement potential rates. The engine has low-pressure compressor (LPC) stages, high pressure compressor (HPC) stages, a single HP turbine (HPT), and finally three LPT stages. The exergetic assessment of the JT8D turbofan components provided here should be helpful for designing turbofan engines. Results from this study also evaluate effects of the maximum power setting on the exergetic measures of the engine components commonly used in medium range commercial aircrafts.
E025(poster) T. Hikmet Karakoc	First Law Approach of a Low Bypass Turbofan Engine Onder Turan, Hakan Aydın, T. Hikmet Karakoc and Adnan Midilli Faculty of Aeronautics and Astronautics Anadolu University, TR-26470 Eskisehir, Turkey **Abstract** The scope of this study is analyzed and discussed in detail for better understanding of energetic performance of a low bypass turbofan engine. In this regard, this study presents first law of thermodynamics of the turbofan engine for maximum thrust level. The engine has low-pressure compressor (LPC) stages, high pressure compressor (HPC) stages, a single HP turbine (HPT), and finally three LPT stages. The results show that energy flow approaches a maximum value to be 73.76 MW in the combustor outlet, while minimum energy flow is observed at fan bypass outlet with the value of 5.60 MW. Accordingly, temperature, pressure and mass flow of the engine components are also calculated from Brayton cycle equations. As a consequently, engine energetic parameters, namely specific fuel consumption and engine overall efficiency, are also calculated for the low bypass turbofan engine from this study.
18:30-19:30 Dinner- Café Andaman	

SESSION – 4-ICPEE 2013

Venue: Tamarind Bay II / Cape Panwa Hotel

Session Chair: **Weerasak Somkhunthot**

Time: 11:00a.m-12:30p.m

11:00a.m-12:30p.m	
E035 **Mr. Sirikul Siriteerakul** 	Temperature Distribution in Three Model Houses with Different Roof Geometries Sirikul Siriteerakul, Wiphada Chamnan, and Teera Siriteerakul Department of Mathematics, Faculty of Science, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand **Abstract** Steady-state temperature distribution of three model houses, each with a roof of different shape, are presented in this paper. The governing equation used was a heat conduction equation in two dimensions. The assumption made was that the houses were of closed space with no convection nor radiation. The distributions were determined by using a finite difference method (FDM) and a finite element method (FEM). They showed that different roof geometries yielded different temperature distributions. In particular, the roof with a convex shape let in less heat than the one with a standard (triangular) shape and the one with a concave shape in that order.
E034 **Ms.Satinee Wongkee** 	A field study of experimental of radiant cooling for residential building in a tropical climate S. Wongkee ,S. Chirarattananon and P. Chaiwiwatworakul The Joint Graduate School of Energy and Environment, King Mongkut's University of Technology Thonburi,126 Pracha-Uthit Road, Bangmod, Tungkru, Bangkok 10140 Thailand. **Abstract** This paper presents an experimental study of radiant cooling for building air-conditioning in a tropical climate. To prevent condensation of moisture on the cooling panel, the temperature of chilled water supplied to the panel was limited. This led to the limitations of heat extraction capacity at the panel and its application to only space with low thermal load and low metabolic rate activity of people in the space. In addition to compare energy saving of radiant cooling system and air conditioning which the result of this paper the radiant cooling system can be used to achieve70% for energy saving.
E5002 **Ms.Areerat Dawongsa** 	Thermoelectric Generator Using Local Mineral MnO-Fe2O3-SiO2-BaO-Al2O3-others Areerat Dawongsa, Kitsana Lamsombat, Chartchai Bunyattarkoon and Weerasak Somkhunthot Program of Physics, Department of Science, Faculty of Science and Technology, Loei Rajabhat University, Thailand **Abstract** MnO-Fe2O3-SiO2-BaO-Al2O3-others mineral has been found in Loei Province, Thailand, and was prepared in bulk solid form for determining thermoelectric properties and efficiencies. Charge carrier type and Seebeck coefficient were measured by hot probe method. Electrical resistivity can be estimated from current and voltage characteristics. Steady state technique is used to find thermal conductivity. Power factor and figure of merit were calculated. Results of Determinations at room temperature in air found that a bulk sample (0.30 cm width, 0.40 cm length, 2.00 cm height and 2.63 g/cm3 density) showed n-type material. Seebeck coefficient, electrical resistivity and thermal conductivity were about −10–3 V/K, 103 Ω·m, and 102 W/m·K, respectively. Power factor of ~10–9 W/m·K2 and figure of merit of ~10–11 K–1 were obtained. Making thermoelectric generator coposed of ten bulks, which connected electrically in series but thermally in parallel. Preliminary test indicated that the open circuit voltage increased with increasing temperature difference from 9.3 mV at 9 K up to 66.0 mV at 88 K. While the internal resistance decreased from 14.9 MΩ to 4.5 MΩ. This test demonstrated that a built generator can be generated the electricity. Therefore, it can be used as an important platform for further research and development of thermoelectric technology.

E5003

Asst. Prof.Weerasak Somkhunthot

Thermoelectric Module Using Local Minerals p-Type SiO2-Fe2O3-CaO-SO3-MgO and n-Type Fe2O3-SiO2-Al2O3-MgO

Weerasak Somkhunthot and Khuanrutai Jaisom

Program of Physics, Department of Science, Faculty of Science and Technology, Loei Rajabhat University, Thailand

Abstract

A thermoelectric module using local minerals composed of a pair of p-type SiO2-Fe2O3-CaO-SO3-MgO-others and n-type Fe2O3-SiO2-Al2O3-MgO-others bulks, copper electrodes, and thermal pads. Dimension of both legs were 1.0 cm width and length, and 2.0 cm height. Copper sheets of 1.0 cm width, 3.0 cm length, and 0.05 cm thickness were used to make the electrodes. Mica pads of 1.0 cm width, and 3.0-5.0 cm length, 0.2 cm thickness were used for the thermal translation from the hot and cold sides. For preliminary test, a built module was used for the electrical generation at room temperature in air. It was found that the open circuit voltage increased with increasing temperature difference from 1.3 mV at 6.2 K up to 13.5 mV at 91.8 K. While the internal resistance decreased from 250.2 kΩ to 136.3 kΩ. Results demonstrated that a thermoelectric device can be generated the electricity. Therefore, it can be used as an important platform for further research studies and development of the thermoelectric technology.

E5004

Mr. Watcharin Detkunthong

Thermoelectric Module Using LocalMineralsp-Type SiO2-Fe2O3-CaO-SO3-MgO and n-Type MnO-Fe2O3-SiO2-BaO-Al2O3

Watcharin Detkunthong, Kittiya Panphum, Wichuda Boonpong and Weerasak Somkhunthot

Program of Physics, Department of Science, Faculty of Science and Technology, Loei Rajabhat University, Thailand

Abstract

A thermoelectric module using local minerals composed of a pair of p-type SiO2-Fe2O3-CaO-SO3-MgO-othersandn-typeMnO-Fe2O3-SiO2-BaO-Al2O3-others bulks, copper electrodes, and thermal pads. Dimension of both legs were 1.0 cm width and length, and 2.0 cm height. Copper sheets of 1.0 cm width, 3.0 cm length, and 0.05 cm thickness were used to make the electrodes. Mica pads of 1.0 cm width, and 3.0-5.0 cm length, 0.2 cm thickness were used for the thermal translation from the hot and cold sides. For preliminary test, a built module was used for the electrical generation at room temperature in air. It was found that the open circuit voltage increased with increasing temperature difference from 1.3 mV at 4.4 K up to 31.0 mV at 116.0 K. While the internal resistance decreased from 512.0 kΩ to 265.0 kΩ. Results demonstrated that a thermoelectric device can be generated the electricity. Therefore, it can be used as an important platform for further research studies and development of the thermoelectric technology.

E3011

Asst. Prof.Santosh Dalvi

Acute Assessment of Dynamics, Barriers and Resolutions Governing Household Energy Efficiency: Global Review

Mr. Santosh D Dalvi, Dr. Ashok V Bhonsale, Mr. Ravindra M Datar

Lokmanya Tilak College of EngineeringMechanical Engg, Navi Mumbai, India

Abstract

The article presents the views of energy scholars, researchers about household energy efficiency in global sphere. Past and current trends in the field of energy analysis are investigated. The objective of this paper is to provide brief household energy analysis and rather, it reviews current knowledge on energy analysis and identifies factors affecting the energy requirements and energy use patterns among households. The paper also combines the global barriers of household energy efficiency. We have summarized the recommendations of worldwide energy researchers to enhance the energy efficiency. The paper provide research gap, which will be positively useful for techno social researchers. The results of energy education experiments, energy information system seems to be helpful for governments and policy makers. However US, European, Chinese, Japanese research has been able to measure the influence of behavior on household energy consumption, to date Indian research has been unable to

	do so.
E5005 **Mr.Akhomdeth VONGSAY** 	Sustainable management of small hydropower for rural electrification In Lao PDR by Economic, Social and Environment Blueprint perspective Mr. Akhomdeth VONGSAY , Dr. Xayphone BOUNSOU (advisor) National University of Laos (NUOL), Kunming University of Science and Technology, China4708 Nongbone Road, Vientiane, Lao PD **Abstract** Electric energy generation mostly from hydroelectric power, thermal power, nuclear power and renewable sources is one of the major key factors for economic and social development in the entire developed and developing nation of the world. The Government of Laos (GoL) has declared that the small hydropower (SHP) with the capacity less than 15 MW is Renewable Energy (RE) and it is playing an important role in the rural development area especially On-grid areas and Off-grid areas. The main challenges for the Government of Laos is how to manage the SHP for the sustainable ways in order to contribute for the GoL's golden target for household to have electricity for 90% in the year 2020 and reduce the poverty in rural. Currently, the government has already approved 35 projects with the capacity less than 5 Mw for the rural development. But the main challenges for the projects are the unreliability supply of electricity to rural areas due to the suitable method for managing and operating of the project has not established. In this study the main purpose is to analyze the 12 existing small hydropower projects in Lao PDR (with the capacity less than 5 MW) that was not sustainable then will propose the recommendation of the suitable management tools for sustainable management of small hydropower in rural area of Lao PDR by using the Economic, Social and Ecological blueprint model (ESE model).
E4003 **Sneha Chafle** 	Utilization of vegetable and fruit waste for Bio-energy Generation Sneha Chafle,Vinayaka Parmar,Seemab Biya MGM's Jawaharlal Nehru Engineering College, Aurangabad (M.S.)-431003 Third Year Department of Chemical engineering **Abstract** We have gone through decades of energy crisis, without any adequate policy for conservation of gasoline and other petroleum products. The only solution left is to restrict ourselves to renewable sources of energy and find a substitute for them. Bio-fuels are the future source of energy all around the world. Globally, more than 30% of the loss occurs at the retail and the land consumer levels, of which the post-harvest and processing level wastages account for the major share. The process includes extraction of oil from castor seeds containing about 80% glyceride, followed by production of ethanol from sweet potatoes. Further process includes trans-esterification that shows the highest potential for the production of bio-fuel, the need of the hour for fueling the future. The studies involve the technology of "waste to fuel" with a view to overcome the disposal problems. The present article deals with the studies conducted on vegetable wastes for production of bio-fuel.
12:30-13:30 Lunch—Café Andaman	

SESSION – 5-ICEEI 2013

Venue: Tamarind Bay II / Cape Panwa Hotel

Session Chair:

Time: 13:30p.m-15:30p.m

13:30p.m-15:30p.m	
E0010 **Mr. You-Horng Lin**	Water Detection Method in the Diffusion Layer of Diaper You-Horng Lin, I-Hsing Huang, Ching-Hsing Luo

	National Cheng Kung University, Taiwan **Abstract** Diapers requires good water absorption characteristics, so that users can maintain optimal degree of freshness. To find diapers absorption and diffusion of moisture condition, there must be appropriate detection method to detect moisture. The common methods of measuring textiles moisture diffusion range are Impedance measurement method, capacitive measurement method, chemical substances measurement method, image measurement method. These methods are limited to the amount of surface measurement, and it's hard to be informed of the inner diffusion situation; radiography measurement method can measure the internal diffusion conditions, but requires expensive equipment and space environment for its main drawback. This paper presents the method called Sensing Probe Puncture Through the Diaper Method (SPPTDM) and device that can detect moisture in the diaper diffusion layer. Experimental design and data processing and analysis, the results to prove that the diffusion layer of moisture diffusion rate is greater than the diffusion rate of the surface to prove diapers absorb moisture diffusion is the main diffusion layer.
E20003 **Mr. Derwin Suhartono** 	Expert System in Detecting Coffee Plant Diseases Derwin Suhartono, Wahyu Aditya, Miranty Lestari, Muhammad Yasin Bina Nusantara University, Jakarta, Indonesia **Abstract** Coffee is an important commodity in the world economy. But unfortunately, productivity and quality of those commodities results are still quite low. This is caused by the disease in coffee plants. The research objective is to create an application that can help researchers or observers working in coffee plantation to diagnose diseases of coffee plants. The method used is fuzzy logic-based expert systems, and decision tree using a hierarchical classification. Knowledge about coffee, its symptoms, and its disease is extracted from human expert and then is converted into a decision tree. It will result on the fuzzy logic-based expert systems. From the experiments, accuracy calculation of the system is about 85%. Based on the accuracy, it can be concluded that this application can be a bit much to help researchers or observers of the coffee plants in diagnosing coffee plants diseases earlier.
E004 **Asst. Prof. Yasutaka Igarashi** 	The Synchronous 8th-order Differential Attack on 12 Rounds of The Block Cipher HyRAL Yasutaka Igarashi, Naoki Shibayama, Toshinobu Kaneko, Seiji Fukushima, and Tomohiro Hachino Kagoshima University, Kagoshima, Japan **Abstract** We study the synchronous 8th-order differential attack on the 128-bit block cipher HyRAL proposed by Hirata of Laurel Intelligent Systems in 2010. HyRAL supports 128, 192, 256 bits of secret keys. We found the new synchronous 8th-order differential characteristics of HyRAL in the 8th round of data-mixing part. Exploiting the characteristics we show that 12 rounds of HyRAL can be attacked with 212.9 blocks of chosen plain text and 2233.7 times of data encryption. We have reduced data complexity to 1/28 and reduced computational complexity to 1/213 compared to the conventional attack.
E005 **Asst. Prof. Yasutaka Igarashi** 	The Improved 96th-Order Differential Attack on 11 Rounds of The Block Cipher CLEFIA Yasutaka Igarashi, Toshinobu Kaneko, Seiji Fukushima, and Tomohiro Hachino Kagoshima University, Kagoshima, Japan **Abstract** CLEFIA is a 128-bit block cipher proposed by Shirai of SONY et al. in 2007. Its key size is 128, 192, or 256 bits. The number of the round of data processing part depends on a key size, viz. it is 18, 22, or 26 rounds for 128, 192, or 256 bits of a key size, respectively. Such a characteristic of CLEFIA have been known that the 96th-order differential of 64 bits out of 128 bits of the 8th-round's output is zero. With this characteristic, we reported the 96th-order differential attack on 11 rounds of CLEFIA that

	requires 298.3 blocks of plain text and 2159 times of data encryption. In this paper, we reduce this number of the times of the encryption, (viz. computational complexity) by applying a partial sum technique proposed by Ferguson et al. With the technique, we sequentially derive a modulo 2 occurrence distribution of intermediate data of cryptanalysis. We also reduce the complexity by introducing a nested structure of iterative computations to the attack algorithm. As a result we reduce the complexity to 2106.6, which is 1/252.4 of the conventional complexity.
E0015 **Assoc. Prof Lei Wang** 	Defending Against the Buffer Overflows: a Static Approach Using Proof-Carrying Code Lei Wang and Ping Wang School of Computer Science and Engineering, Beihang University, Beijing, China **Abstract** Buffer overflow has been one of the most outstanding attacks in the last ten years. This kind of vulnerability may compromise the system security by various means. Existing solutions to this problem have focused on the execution environment of the malicious program rather than the hypostasis of buffer overflow and most of them try to detect buffer overflows dynamically. This paper presents the effort of applying a static analysis approach against the programs exploiting buffer overflow and the method adopted is named Proof-Carrying Code (PCC). This paper shows that: (1) it is possible to defend against most of the buffer overflow vulnerabilities with proper use of PCC; and (2) the method is well prepared to handle the coming-up variants of the buffer overflow problems.
E40007 **Prof. Boonserm Kijsirikul** 	Incremental Feature Construction for Deep Learning using Sparse Auto-Encoder Mongkol Udommitrak, Boonserm Kijsirikul Chulalongkorn University, Bangkok, Thailand **Abstract** A sparse auto-encoder is one of effective algorithms for learning features from unlabeled data in deep neural-network learning. In conventional sparse auto-encoder training, for each layer of a deep neural-network, all feature units are simultaneously constructed at the beginning and after being trained, several similar/ redundant features are obtained at the end of the learning process. In this paper, we propose a novel alternative method for learning features of each layer of the network; our method incrementally constructs features by adding primitive/simple features first and then gradually learns finer/more complicated features. We believe that using our proposed method, more variety of features can be obtained that will lead to the performance of the network. We run experiments on the MNIST data set. The experimental results show that sparse auto-encoders using our in-cremental feature construction provides better accuracy than a sparse auto-encoder using the conventional feature construction. Moreover, the shapes of our obtained features contain both primitive strokes/lines as well as finer curves/more complicated shapes which comprise the digits, as expected.
E40006 **Assoc. Prof.Sartid Vongpradhip** 	A Technique to Add Error Detection of QR Code Decoding by Using Micro QR Code Tanee Wiputtikul and Sartid Vongpradhip Chulalongkorn University, Bangkok, Thailand **Abstract** This paper introduced method for error detection of the information in QR Code by using Micro QR Code, by creating a grayscale QR Code. Image processing technique is used before decoding. Image processing offer ability of fixing error and restore module that have been damage such as tear, stain or bend before decoding process. General QR Code have no error detection which help to verify the correctness of information in QR Code. Therefore, the contents of Micro QR Code is generated using MD5 (Message-Digest Algorithm 5) and overlapping onto the three corners of Finder Pattern of standard QR Code. The experiment is conducted on QR Code version 5 and over. The decoding is done by focusing on the region of interest on the overlapped Micro QR Code. After that the binarization is done using multilevel-threshoding to separate the content of the Micro QR Code. The Opening technique is used to remove edges, eliminated noises and compare the decoding data.
E40005	A Leakage Current Induced by Barrier Metal Formation in Power MOSFETs with Trench

Mr. Yong Hun Jeong

Contact Structure

Yong Hun. Jeong, Bui Ngo. Bong, Rebecca Anak. Grie, Sian Han. Chai,and Gee Hong. Tong

X-FAB Sarawak Sdn. Bhd, Malaysia

Abstract

One of important parameter of Power MOSFET is ON resistance (RON) to minimize power loss in power system. To minimize RON, need high cell density process because channel resistance has occupied high proportional for total RON in low voltage Power MOSFET. Trench contact structure is suitable for high density device with narrow contact width. However in this structure case, designer should consider silicide formation due to high aspect ratio profile to prevent high leakage current. In this paper, present optimized Ti/TiN thickness formation to minimize leakage current between Drain and Source. Basically it shows good leakage performance that all removed Ti/TiN layer on the top of ILD by additional etchback or CMP process. And another finding from our study, optimized Ti/TiN formation also shows comparable leakage current with it. Unreacted Ti(+) ion is main contributed factor for high leakage current at P-channel device and higher wafer stress due to thicker TiN layer is another factor.

E0016

Mr. Hamdi Yalın Yalıç

On-Board Driver Assistance System for Lane Departure Warning and Vehicle Detection

Hamdi Yalın Yalıç, Ali Seydi Keçeli, Aydın Kaya

Hacettepe University, Turkey

Abstract

Computer vision and image processing based intelligent transportation systems have become very popular for the last decade. Vehicle manufacturers and automotive industry are interested in vision-based systems. This kind of systems could warn drivers and prevent accidents caused by inattentive driving. This paper introduces a single-board computer system for lane departure warning and vehicle detection. Our system employs the lane departure warning system based on geometrical cues which is implemented widely in the literature. For vehicle detection, we propose a cascade object detector trained by using car rear images. Our main contribution is to implement our system on an embedded single board computer which runs in real time. This system can be mounted into the car with a camera and can be used in practice.

E40008

Dr. Saisunee Jabjone

Artificial Neural networks for forecasting the Rice Yield in Phimai District of Thailand

Saisunee Jabjone and Chatchai Jiamrum

Nakhon Ratchasima Rajabhat University,Thailand

Abstract

This study aimed to find the model for predicting rice yield in Phimai district, Thailand. A classic multilayer feed-forward neural network with back-propagation algorithm was used throughout this experiment. Data from 2002 to 2007 were used as the training data for predict the rice yield between 2008 and 2012. The input data from six meteorological factors; rainfall, water distribution, evapotranspiration, temperature, humidity and wind speed were used. Evapotranspiration (ET) was found by using Pennman-Montieth equation. The result showed that ANN(8,19,17) provided the lowest value of RMSE (10.57) and MAPE (2.3). The rice yield predicting of ANN(8,19,17) and actual data have linear relationship (R2=0.99). This predicting model, therefore, was precision and appropriate to predict the rice yield.

E0021

Assoc. Prof. Xin Ye

A Reachability Verification Method based on Pi-calculus and Role Network Model for Cross-organizational Business Processes

Xin Ye, Junfeng Ma, Liming Zhu and Zhao Li

Dalian University of Technology,China

Abstract

Increasingly more organizations are involved in critical cross-organizational business processes. Reachability analysis is one important way to guarantee the correctness of these processes. This paper proposes a new way of combing Role Network Model

	(RNM) and Pi-calculus to support reachability analysis for distributed and highly dyanmic processes. We first formally describe RNM in Pi-calculus. We then propose a reachability verification method based on RNM and μ-calculus for both structured and dynamic business processes. We evaluated our approach using a real-world government administrative permit system in China. The results show that proposed method can analyze and improve the reachability aspects of cross-organizational business processes, especially for dynamic business processes.
15:30p.m-15:50p.m coffee break	

SESSION – 6-ICBMS 2013 and ICCAE 2013

Venue: Tamarind Bay II / Cape Panwa Hotel

Session Chair: Rouel S. Roque

Time: 15:50p.m-18:30p.m

ICBMS 2013	
15:50p.m-18:30p.m	
X00004 **Assistant Prof.** **Bin Liu** 	Protein Remote Homology Detection by Combining Profile-based Protein Representation with Local Alignment Kernel Bin Liu, Xiaolong Wang, Ruifeng Xu and Buzhou Tang Harbin Institute of Technology Shenzhen Graduate School **Abstract** Protein remote homology detection has attracted a great deal of interest as it is one of the most important problems in bioinformatics. Profile-based methods recently achieve the state-of-the-art performance. A key step to improve the performance of these methods is to find a suitable approach to use the evolutionary information in the profiles. In this study, we propose the profile-based protein representation to extract the evolutionary information from frequency profiles. In this approach, the frequency profiles calculated from the multiple sequence alignments outputted by PSI-BLAST are converted into several profile-based proteins and then the local alignment kernel (LA) is combined with these profile-based proteins for the prediction. Our experiments on a well-known benchmark show that the proposed approach can significantly improve the predictive performance.
X00005 **Lecturer** **Wen-Jie Ng** 	In vitro screening of honey against Enterococcus spp. Biofilm Wen-Jie Ng, Kit-Yin Lim, Ju-Yee Chong, Ka-Lok Low Universiti Tunku Abdul Rahman (UTAR) **Abstract** Honey is known widely as a remedial agent for its wound healing, antibacterial, antioxidant and anti-inflammatory properties. Enterococci, on the contrary are associated with biofilm formation on medical devices which lead to devastating infections. This study was conducted to investigate the inhibitory effect of honey on established biofilm and prevention of biofilm formation. The biofilms of Enterococcus spp. (ATCC 19433, ATCC 29212, LMG 16192 and LMG 16216) were cultivated in microtitre plates with the treatment of different types of honey (Malaysian Gelam honey and Manuka honey [UMF 10 and 15]). The estimation of biofilm biomass extension was determined by measuring absorbance at 570 nm wavelength. It was found that Manuka honey UMF 15 was the most effective in reducing established biofilm biomass as compared to Malaysian Gelam honey. Nevertheless, Malaysian Gelam honey was found to be effective in preventing biofilm formation of Enterococcus spp. as compared to Manuka honey. In brief, Malaysian Gelam honey is effective to prevent enterococcal biofilm fomation whereas Manuka honey can be recommended as a potential therapeutic agent for biofilm related enterococcal infections.

X00008
Student
K. Fujino

Liver Cirrhosis Classification on M-Mode Ultrasound Images by Higher-Order Local Auto-Correlation Features

K. Fujino, Y. Mitani, Y. Fujita, Y. Hamamoto, and I. Sakaida

Ube National College of Technology

Abstract

Ultrasound images are widely used for diagnosis of liver cirrhosis. In liver cirrhosis classification using M-mode ultrasound images, Zhou's method has been shown to be effective. However, in Zhou's approach, the liver cirrhosis classification performance depends on the accuracy of the abdominal aorta wall extraction. Therefore, we examine to classify the liver cirrhosis not using the abdominal aorta wall extraction. In this paper, we propose a liver cirrhosis classification method using higher-order local auto-correlation (HLAC) features. Furthermore, we propose to use image processing techniques of a thresholding technique and a shading technique to effectively extract the HLAC features. We also examine a feature selection method by Fisher ratio to reduce the dimensionality of the HLAC features. Experimental results show the proposed method is promising. The average error rate of the proposed method achieves 12.11(%).

X00009
Master
Mahsa Rostami

The Effect of Dissolved Nitrate Toxicity on Follicologenesisof the Pregnant Mice and Their Offspring

Mahsa Rostami

Kharazmi university

Abstract

Nitrate is one of the most common ground water contaminants in urban and rural areas. These days sodium nitrate has been added to the environment through burning of the fossil fuels and using the chemical fertilizers. In this research the effects of the Sodium Nitrate (doses 450, 900mg／liter in drinking water) during pregnancy of female mice were investigated. The hypothesis of this study was to find out the developmental effects of Sodium Nitrate on ovaries of the pregnant mice and their offspring's ovaries. For these objectives the offspring in 12 and 24 days after birth were examined, the significant changes in the body weight, the quantity and quality of different follicles, ovary diameter and hormones level were investigated in treated groups. These observations indicate the toxicity of excess nitrates can make changes in ovary such as disturbances in development of follicles and ovarian tissue damage. Even more the oral LD50 for mice varied from 2480 to 6250 mg of the Sodium Nitrate /kg.

X00010
Prof.
Ming-Chiu Fung

The Effect of Different Fractions of Chinese Herb Extract (ShuangGu Tang) on BMP-3 Gene Expression Level of Mouse Bone Marrow Cell

Ping-Sheng Tu, XinXie, Yan-Xin Liu, Yue-Sen Zhi, Ying-Ying Lee and Ming-Chiu Fung

The Chinese University of Hong Kong

Abstract

Aims: Osteoporosis is a skeletal disease characterized by low bone mass and structural deterioration of bone tissue, with bone fragility and an increased risk of fractures. Bone is subject to constant remodeling mediated by two principal cells, the osteoclast for bone resorption and the osteoblast for bone formation. After the menopause in human and mice, the loss of bone mass is often coupled with diminished osteoblast production and function. It has been shown that the deficiency of estrogen and high level of expression of BMP-3 were linked to the accelerated bone loss after menopause. In this study, the effect of Chinese herb Shuang Gu Tang on the BMP-3 expression of bone marrow cells of ovariectomized mice was investigated. Methods: The ovary of mouse was surgically removed to mimic the estrogen deficiency at menopause. The bone marrow cells of ovariectomized mice were collected in cell culture. The bone marrow cell culture was treated with different fractions of the Chinese herb extracts (Shuang Gu Tang) and the BMP-3 expression level of each treatment was analyzed by quantitative real-time PCR. Results: Among the bone marrow cells of validated ovariectomized mice, the crude extracts and 40% ethanol fraction showed consistent effect on inhibiting the

	up-regulation of BMP-3 gene. Compared to untreated bone marrow cells, crude extract and 40% ethanol fraction reduced the expression of BMP-3 level by 41% and 45% respectively. Our results showed the inhibitory effect of Chinese herb (Shuang Gu Tang) on the up-regulation of BMP-3 in cultured bone marrow cells from ovariectomized mice. The reduction of BMP-3 expression may increase the differentiation of osteoblast and account for the anti-osteoporosis effect.
X00012 **Master** **Masoumehzaman Alizadehnohi** 	The study of regeneration in posterior part of Aporrectodea caliginosa Parnian Jamshidi, Zahra Pishkahi, Latifeh Karimzadeh, Masoumehzaman Alizadehnohi, Mohammad Nabiuni Kharazmi University **Abstract** Aim: Many organisms have the ability to regenerate tissue to some extent from the healing of wounds to replace the entire organs. Aporrectodea caliginosa is an Oligochaeta species are prime organisms for tissue regeneration and stem cells studies due to their extensive capacity to regenerate. Taking notice of its high potential as a new material for regenerative and stem cells study, detailed studies were undertaken on the regeneration of Aporrectodea caliginosa. Methods: 80 Aporrectodea caliginosa were acquired from Karaj in Alborz province of Iran and kept in six situations different in temperature, humidity, pH, structure of soil and section plane. Posterior part of the worms seated in the medium and kept up to four weeks. At the end of each week the samples were collected for further studies such as histological experiments and morphological studies. Result and Conclusion: The data have shown that anterior part from a new tail regenerate like other species but regeneration in posterior part is limited to wound healing in section plane and could regenerate a new head in posterior part. Even more the regeneration in Aporrectodea caliginosa regulated by both internal and external environmental factors.
X10005 **Prof.** **Cesar G. Demayo** 	Describing wing shape among Culex quinquefasciatus Say (Diptera: Culicidae) detected positive and negative for filaria using Relative Warp analysis Judy P. Sendaydiego, Jessie M. Gorospe, Mark Anthony J. Torres, Ruben F. Amparado Jr., and Cesar G. Demayo MSU-Iligan Institute of Technology **Abstract** This study examined populations of Culex quinquefasciatus in filariasis-endemic communities of Misamis Oriental, Philippines. C. quinquefasciatus, has been of interest to public health since it was identified as a vector of filariasis in the Philippines in 1995. In surveillance and control programs, problems in identification is encountered as it requires some specialized skill and a well preserved set of specimen which is sometimes difficult to acquire. It is for these reasons that alternative method of identification and discrimination of Culex individuals has been desired to resolve problems related with vector species diversification and identification. In this study, geometric morphometric approach was used to test the hypothesis that there exists some variation in the wing shape pattern of C. quinquefasciatus identified as positive and negative of filaria based on the landmarks' position on the wings. To illustrate ordination of the shapes' consensus, the mean shape of the two populations was measured by a relative warp ordination plot using the software tpsRelw version 1.46. Results of the relative warp analysis showed significant variation between the two populations. The four extracted significant relative warps account for a total of 68.54% variation in wing geometry pattern. Variations were observed in the wing apex and base. These variations may have genetic basis or maybe mere reflections of phenotypic plasticity brought about by the changing environmental conditions.
X10007 **Ph. D** **Adjar Wibowo**	The Role of Urinary Cadmium and Lead Level on Pregnant Women Renal Function Adjar Wibowo

	Lambung Mangkurat University **Abstract** Cadmium (Cd) and lead (Pb) are heavy metals which used in many industry and were confirmed as environmental toxin and mainly effects reproductive system and toxic to growing fetus. Determination of cadmium and lead level generally measure by spectrophotometric methods. But in this study, we used a method based on approach adjusting specific gravity. This study aimed to evaluate the potential effect of cadmium and lead exposure on pregnancy outcome by measuring their correlation on renal function. This study was performed between January to May 2013 and targeted 57 pregnant women as the control group (32 patients of normal pregnancy) and case group (25 patients of preeclampsia). For analyzing of the data, SPSS software version 17 was used and was examined by Mann-Whitney test and Spearman correlation test. We found that there are significant correlation between Cd an Pb exposure on urea level, urea-creatinine ratio, and GFR of the pregnancy patients ($p < 0,05$) but unlike to the creatinine serum.
X20001 **Associate Prof. Mark Anthony J. Torres** 	Relative Warp Analysis of Parasite–Induced Plasticity in the Shell Shape of Bithynia sp. (Bithyniidae) Edgar Gary Vasallo, Jessie M. Gorospe, Mark Anthony J. Torres, Ruben F. Amparado Jr., and Cesar G. Demayo MSU-Iligan Institute of Technology **Abstract** Parasitism often influences the phenotype of gastropods. Many of the resulting changes are due to changes in resource allocation that come with infection. This investigation quantifies some aspects of the parasite-host relationship between cercariae and its intermediate host Bithynia sp. Noticeable differences in the shell shape of parasitized and uninfected Bithynia sp. snails were investigated using Relative Warp Analysis, Discriminant analysis, and Kruskal-Wallis to determine shell shape divergence of the two populations. These shape divergence accounted for more than 35% of the variance in shell morphology relative to mean shape. Apparently, it may be that broader body whorl, wider aperture, conic to globose shape and bigger snails are more likely to become infected with Bithynia sp., or that narrowly conic, reduced aperture, small-sized relative to the shell shape are more resistant to parasite infections. Hence, the methodology using landmark-based geometric morphometric methods proved to be more profound for the characterization of Bithynia sp. snails even at a subtle degree.
X20002 **Lecturer Eko Suhartono** 	The Role of Cadmium in Proteins Glycation by Glucose: Formation of Methylglyoxal and Hydrogen Peroxide in vitro Eko Suhartono, Triawanti, Amin Setyo Leksono and M. Sasmito Djati Lambung Mangkurat University **Abstract** Cadmium (Cd) is a heavy metal that be a source of concern for industrial workers and it was proposed in the formation of advance glycation end products (AGEs) such as methylglyoxal (MG). MG have recently attracted much attention because of their possible clinical significance in chronic and age-related diseases. Based on previous research, methylglyoxal formation can be accelerated by metals in vitro. The role of Cd in the formation of MG and hydrogen peroxide has not been much studied. Thus, our study aims to measure the formation rate of MG and hydrogen peroxide in the presence of Cd in vitro. This research was divided into 4 groups (1 control group and 3 treatment groups), than we set carbonyl compound assay, methylglyoxals assay, and hydrogen peroxide assay. For analyzing of the data, SPSS software version 17 was used and was examined by ANOVA and regression correlation test. For all outcomes, a nominal p-value of $p < 0,05$ was considered significant. We found that there are significant correlation between Cd exposure on the formation of hydrogen peroxide and methylglyoxal ($p < 0,05$) in nonenzymatic glycation of proteins by glucose. The increased Cd level accelerate the formation of methylglyoxal and hydrogen peroxide.
X20003	Salivary Antioxidative Index in Newborns at Risk of Sepsis as Novel Parameterfor

Ph. D
Ari Yunanto

Early-Onset Neonatal Sepsis

Ari Yunanto, Rizky Taufan Firdaus, Triawanti, and Eko Suhartono

Lambung Mangkurat University

Abstract

Neonatal sepsis is a clinical syndrome in the first months of infant life due to a systemic response caused by the presence of pathogenic microorganisms or their products in the blood. Sepsis promotes the unbalanced production of oxidant and anti-oxidant substances, causing an excess of free oxygen radicals. Early markers of neonatal sepsis have been studied in recent years, and we proposed another parameter to detect early-onset neonatal sepsis with salivary antioxidative index (SAOI), saliva has been shown as blood representatives and to have many benefits. This study was conducted in April - June 2012, saliva specimens were taken from 57 newborns, in which 32 infants were at risk of sepsis and 25 infants were healthy and served as a control group. Data was analyzed by Mann-Whitney test. We concluded that sepsis possibility 3,7 fold when there are low AOI. This parameter may be used as another marker to detect early-onset neonatal sepsis.

X20005

Prof.
Rouel S.Roque, M.D.

MAPKs Modulate RPE Response to Oxidative Stress

Rouel S.Roque, M.D.

TOURO UNIVERSITY NEVADA

Abstract

To investigate the role of mitogen-activated protein kinases (MAPK) in the response of the retinal pigment epithelium (RPE) to oxidative stress (OS), a well-characterized RPE cell line (ARPE-19) was exposed to an oxidant-generating system catalyzed by glucose oxidase and glucose (GO/G). ARPE-19 cells were characterized for morphological changes, mitochondrial membrane permeability (MMP), and cell survival following exposure to GO/G. The effects of GO/G on MAPK activity were determined by assaying for p38MAPK expression and activity in the presence or absence of SB203580, a specific p38MAPK inhibitors, or p38MAPK siRNA. ARPE-19 cells exposed to GO/G showed morphological changes, increased MMP, and cell death. Exposure to OS promoted increased phosphorylation of p38MAPK and hsp27, a downstream target of p38MAPK. SB203580, but not p38 MAPK siRNA, inhibited ARPE-19 cell death. In conclusion, activation of p38MAPK may promote downstream pathways responsible for the morphological changes observed in RPE cells during oxidative damage, however these pathways do not appear to be responsible for OS-induced RPE degeneration.

X20006

Master
Salem Abobaker

Incidence of Breast Cancer in a Primary Hospital in Relation to ABO Blood Groups System

Salem Abobaker

Advanced Medical and Dental Institute (AMDI), Universiti Sains Malaysia (USM),Penang, Malaysia

Abstract

The aim of this study was to investigate the association of ABO blood group system with breast cancer in a primary hospital in Penang. Moreover the study was conducted to assess the utility of ABO blood group as a preclinical marker. Material and Methods: The study sample consisted of 70 and 140 cancer and controlled subjects respectively. Factors such as blood group, age, ethnic group were examined in 70 female subjects of breast cancer. Blood samples were taken from 140 healthy subjects to examin the distribution of ABO blood group types with different Malaysian races. Results: Incidence in cancer patients is high with blood group A and AB compared with control group; however the association was not statistically significant. For blood group B and O were lower in cancer patients compared to control healthy group and the association was statistically significant. The results also indicated that blood type should be considered along with other risk factors to understand the patient's risk. Conclusion: Blood group A is highly associated with breast cancer (30.0%), in contrast to the other blood groups.

X20004

Synthesis, Characterization and the Application of ZnO Nanoparticles in

Subhankar Paul	Biotechnology Subhankar Paul and Deependra Kumar Ban National Institute of Technology **Abstract** In our present investigation, we have observed the effect of chemically synthesized Zinc oxide (ZnO) nanoparticles in biological system. Chemically synthesized nanoparticles was characterized using UVVis spectrophotometer, SEM (Scanning Electron Microscope) image analysis, XRD (X-ray diffraction) analysis, DLS (Dynamic Light Scattering) particle size analysis and TGA (Thermogravimetricanalysis) analysis. From the characterization techniques like SEM analysis and DLS particle size analysis, the average size of the ZnO NP was found to be 91 nm. When,ZnO NPs was applied at various concentrations in Bacillus subtilis, Streptococcus pneumonia, Pseudomonas aeruginosa and Escherichia. coli cultures, it was observed that 15 mM NPs was found to inhibit the growth of all four microorganisms with a maximum effect on Streptococcus pneumonia. When E.coli growth was monitored in the presence of NP in liquid medium, NP with 10 and 15 mM concentration showed significant bacterial growth inhibition. When ZnO NP was administered in the E.coli cells to see the expression level of β-glucosidase in terms of enzymatic activity, after 24 h of culture growth, it was found a sharp increase in enzymatic activity with maxima was found at a NP concentration of 0.6 mM.
ICCAE 2013	
A1003 **MR.** **Woojin Han** 	Shaking Table Test of Vertical Isolation Device Youin Lee, Woojin Han ESCORTS Co.,Ltd. **Abstract** In this paper, the performance verification study on a recently developed vertical vibration isolator is presented. The vertical seismic isolation system consists of four wedge-shape steel parts which provide friction surface at their interfaces, a center and two side springs, and a lateral bar which functions as a guide to side springs. The theoretical model for the isolator derived from the force equilibrium relationship is verified via numerical analyses and prototype tests. The performance of the isolator is further verified using the shaking table test. The analytical and experimental studies show that the isolator can reduce the vertical vibration effectively.
A2003 **Prof.** **Nabil F. Ismael** 	Influence of Relative Compaction on the Shear Strength of Compacted Surface Sands Nabil F. Ismael and Mariam Behbehani Kuwait University **Abstract** Construction of structures always involves excavation, and recompaction following foundation installation. In some cases foundations are placed on compacted sandy soils. The influence of relative compaction on the strength of sandy soils in Kuwait is examined herein by a comprehensive laboratory testing program on surface samples. The program includes basic properties, compaction and, direct shear tests. Various soil parameters were determined including the compaction characteristics, the cohesion c, angle of friction ϕ. The results indicate that as the relative compaction increases towards 100%, the strength increases and the soil compressibility decreases. A comparison was made between the soil parameters for the samples compacted on the dry side, and on the wet side of optimum moisture content at several relative compaction ratios. The difference in the values obtained for the two cases are explained. The effect of using 1% by weight cement additive is also examined.

A2006 **Assistant Prof.** **T M Prakash** 	Behaviour of ACB Masonry In-filled RC Frame under Cyclic In-plane Lateral Load T M Prakash, Dr. B G Naresh kumar, and Dr. Karisiddappa P E S COLLEGE OF ENGINEERING, MANDYA **Abstract** An attempt has been made to evaluate the performance of ACB masonry in-filled RC frame under cyclic in-plane lateral load. The frame itself was detailed with reinforcement conforming to ductile detailing as per the Indian standards. The specimen tested was a geometrically half-scale model and constructed as per conventional construction practice adopted in India. This means that the RC frame was cast initially, and later the masonry in-fill was provided without making any efforts to induce any structural connection between MI and RC frame interfaces. Obviously, the top of the masonry in-fill and the soffit of the beam remains the first plane of weakness. This also means that the popular diagonal strut action may not be mobilized fully. This should set the guiding principle for any attempt to develop an analytical model for the estimation of failure load. The details of the experimental set-up, the cracking and failure mode of the system and the significance of the experimental response are presented in detail.
A2008 **Prof.** **H.S.Suresh Chandra** 	Experimental Investigation on the Effect of Replacement of Sand by Quarry Dust in Hollow Concrete Block for Different Mix Proportions H.S.Suresh Chandra, G.Sarangapani, and B.G.Naresh Kumar PES College of Engineering, Mandya, Karnataka, India. **Abstract** The demand of natural sand in the construction industry has increased a lot resulting in the reduction of sources and an increase in price. Thus an increased need to identify a suitable substitute, that is eco-friendly and inexpensive quarry dust being extensively used as an alternative to the sand in the production of concrete. In this paper an attempt has been made to determine the properties of hollow concrete blocks produced by replacing sand by quarry dust. Both partial (i.e.50%) and complete replacement has been tried with and without admixtures. Four different proportions have been considered. In two proportions studies have been made by considering different W/C ratios.
18:30-19:30 Dinner- Café Andaman	

Thailand

Geography

Thailand's 514,000 square kilometers lie in the middle of mainlandSoutheast Asia. The nation's axial position influenced many aspects of Thailand's society and culture—it controls the only land route from Asiato Malaysia and Singapore..

Climate

Thailand has a warm, tropical climate affected by an annual monsoon, with a rainy season from June to October and a dry season the rest of the year. Temperatures average 75 to 92 degrees Fahrenheit, with the highest temperatures from March to May and the lowest in December and January.

Tropical, rainy, warm, cloudy southwest monsoon from mid-May to September. Dry, cool northeast monsoon from November to mid-March, southern isthmus always hot and humid.

There are three seasons: the cool season (November to February), the hot season (April to May), and the rainy season (June to October), though downpours rarely last more than a couple of hours.

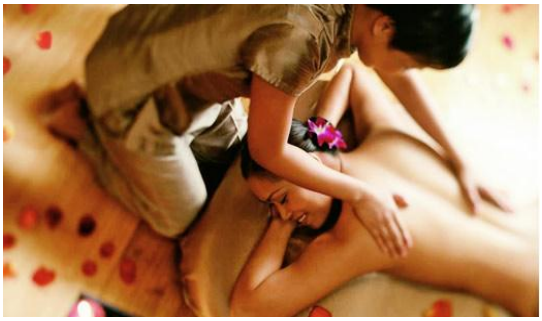
Languages

Thailand, and its neighborLaos, are dominated by languages of theThaifamily.Karen languagesare spoken along the border with Burma,Khmernear Cambodia (and previously throughout central Thailand), and Malay in the south near Malaysia. The Thai hill tribes speak numerous small languages, many Chinese retain varieties of Chinese, and there are half a dozen sign languages.

Transport

Transport in Thailand is varied and chaotic, with no one dominant means of transport. Bus transport dominates in long distances and Bangkok, with motorbikes dominating in rural areas for short trips, supplanting bicycles. Road transportation is the primary form of freight transport across the country. Slow rail travel has long been a rural long distance transport mechanism, though plans are underway to expand services with high speed rail lines extending to several major regions of Thailand. Domestic air transport, which until recently had been dominated by a select few air carriers, has recently seen a surge in popularity due in large part to the expanding services of low cost carriers.

Travel



MEMO