2015 APCBEES SINGAPORE CONFERENCES ABSTRACT

2015 6th International Conference on Environmental Science and Technology (ICEST 2015)
2015 7th International Conference on Bioinformatics and Biomedical Technology (ICBBT 2015)
2015 4th International Conference on Petroleum Industry and Energy (ICPIE 2015)
2015 2nd Journal Conference on Environmental Science and Development (JCESD 2015 2nd)

Singapore

May 23-24, 2015

Hotel Royal

Sponsored and Published by

www.cbees.org

2015 APCBEES SINGAPORE CONFERENCES INTRODUCTION

Welcome to CBEES 2015 conferences in Singapore. The objective of the Singapore conferences is to provide a platform for researchers, engineers, academicians as well as industrial professionals from all over the world to present their research results and development activities in Environment Science and Bioinformatics and Biomedical Technology, Petroleum Industry and Energy.

2015 6th International Conference on Environmental Science and Technology (ICEST 2015)

❊ **Paper publishing and index:** **ICEST 2015** papers will be published in one of the following:
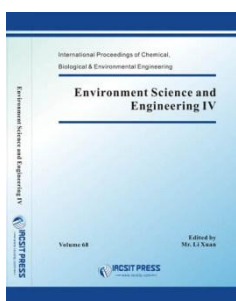
Volume of Journal (IPCBEE, ISSN: 2010-4618), and all papers will be included in the Engineering & Technology Digital Library, and indexed by Ei Geobase(Elsevier), CABI, Ulrich's Periodicals Directory, CNKI, WorldCat, Google Scholar,

❊ **Conference website and email:** **http://www.icest.org/**; **icest@cbees.org**

2015 7th International Conference on Bioinformatics and Biomedical Technology (ICBBT 2015)

❊ **Paper publishing and index:** **ICBBT 2015** papers will be published in:

International Journal of Life Sciences Biotechnology and Pharma Research (IJLBPR, ISSN:2250-3137), which will be included in the Engineering & Technology Digital Library, and indexed by Embase (Under elsevier), ProQuest, Google Scholar, Chemical Abstracts Services (CAS), Indian Science, ICMJE (International Committee Medical Journal Editors), HINARI(World Health Organization), and NYU(Health Sciences Library).

International Journal of Bioscience, Biochemistry and Bioinformatics (IJBBB, ISSN: 2010-3638), and all papers will be included in the Engineering & Technology Digital Library, and indexed by WorldCat, Google Scholar,Cross ref, ProQuest.

❊ **Conference website and email:** **http://www.icbbt.org/**; **icbbt@cbees.org**

2015 4th International Conference on Petroleum Industry and Energy (ICPIE 2015)

※ **Paper publishing and index:** ICPIE 2015 papers will be published in one of the following journals:
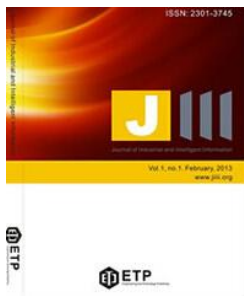
Journal of Industrial and Intelligent Information (JIII, ISSN: 2301-3745) as one volume, and will be included in the Engineering & Technology Digital Library, and indexed by EI (INSPEC, IET), Ulrich's Periodicals Directory, Google Scholar and Electronic Journals Digital Library, and sent to be reviewed by Ei Compendex and ISI Proceedings.

※ **Conference website and email:** http://www.icpie.org/; icpie@cbees.org

Excellent Paper Award

※ One excellent paper will be selected from each oral presentation sessions, and the Certificate for Excellent Papers will be awarded at the end of each session on May 24, 2015.

Instructions for Oral Presentations

Devices Provided by the Conference Organizer:

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

Materials Provided by the Presenters:

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

Duration of each Presentation (Tentatively):

Regular Oral Presentation: about 14 Minutes (Including question and answer time)
Keynote Speech: 25 Minutes of Presentation and 5 Minutes of Q&A

Instructions for Poster Presentation

Materials Provided by the Conference Organizer:

The wall to put poster

Materials Provided by the Presenters:

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

Dress code

Please wear formal clothes or national representative of clothing.

Brief Schedule for Conferences

May 23, 2015 (Saturday) 10:00-17:00 Arrival and Registration (Lobby)
May 24, 2015 (Sunday) 8:00-19:00 Registration, Keynote Speeches, and Conference Presentations (Royal Room 1)
Opening Remarks: 8:00-8:10 Keynote Speech I: 8:10-8:40 Keynote Speech II:8:40-9:10 Keynote Speech III: 9:10-9:40 Coffee Break & Photo Taking: 9:40-10:00
Conference Room (Royal Room 1) Session 1: 10:00-12:30 11 presenters—Environmental Science Topic (ICEST 2015)
Lunch: 12:30~13:10 **Venue: Hotel Restaurant** (Please arrive on time at "Royal Room 1" by 13:00 after lunch to copy the ppt into the laptop)
Conference Room (Royal Room 1) Session 2: 13:10-15:50 11 presenters-- Environmental science Topic (ICEST, ICBBT & JCESD 2015)
Coffee Break: 15:50-16:10
Conference Room (Royal Room 1) Session 3: 16:10-18:50 12 presenters—Agriculture & Bioscience Topic (ICPIE, ICEST & ICBBT 2015)
Dinner 19:00
May 25, 2015 (Monday) One day tour

Presentation Tracking Contents

SESSION–1 (ICEST 2015) Venue: Royal Room 1 Session Chair: Prof. Bogdan Zygmunt Time: 10:00-12:30			SESSION–2 (ICEST, ICBBT & JCESD 2015) Venue: Royal Room 1 Session Chair: Prof. Solomon W. Leung Time: 13:10-15:50		
PAGE	**PAPER ID**	**PRESENTER**	**PAGE**	**PAPER ID**	**PRESENTER**
7	S0003	Wei Peng	12	S0024	Fikri Noor Azy and Irda Krismadiyanti
7	S0008	Sherif Ali Younis Sarhan	12	S0033	Pontip Stephen Nimlyat
8	S0011	Yen-An Tsai	13	S0045	Christia Meidiana
8	S0012	Göksel Demir	13	CD0212	Nobuyuki Kawasaki
8	S0015	Solomon W. Leung	14	S0014	Vishakha Sharma
9	S0016	H. Handan Demir	14	S0046	Do Nguyen Hoa Thien
9	S0017	Solomon W. Leung	15	S3004	Bogdan Zygmunt
10	S0019	Taehoon Koh	15	H0001	Ummi Kalthum Ibrahim
10	S0022	Jo-Han Chang	15	H0004	Merih Kivanc
11	S0023	Ke-Chin Yen	16	H0008	Kazhal Sajadi
11	S0026	Ke-Chin Yen	16	S0030	Jeong-Hoon Sa

SESSION–3 (ICPIE, ICEST & ICBBT 2015) Venue: Royal Room 1 Session Chair: Prof. Jen-Jeng Chen Time: 16:10-18:50			
17	H0012	Tan Chou Yong
17	H0014	Jianhuang Wu
17	X0003	Zi-sen Wu
18	X0004	Lidong Mi
18	X0011	Shuaiwei Ding
18	X0019	Xiang'an Lu
19	X0020	Weerapong Panichaporn
19	X0012	Dr. Mahesh K. Dalal
19	H0010	Chanokphat Phadungath
20	S0036	Jen-Jeng Chen
20	S3002	Abdul Rahim Yacob
21	S0029	Chaichan Ritkrerkkrai
21	S2001	Hyo Young Kim
21	S3001	Hee-Young Kim

Attention Please:

1. Each presenter has about ten minutes (including question and answer time), please control your presentation time.
2. Please kindly prepare your PPT or poster according to your research and the time regulation before the conference and take it to the conference site.
3. Please arrive at the conference room when your session begins.

Hoping you to have a good time during the conference.

Detailed Schedule for Conferences

May 23, 2015 (Saturday)

Venue: Lobby

10:-00-17:00	Arrival and Registration

Note: (1) You can also register at any time during the conference.

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

(3) One excellent paper will be selected from each oral presentation sessions, and the Certificate for Excellent Papers will be awarded at the end of each session on May 24, 2015.

Morning, May 24, 2015 (Sunday)

Venue: Royal Room 1

8:00-8:10		**Opening Remarks** Prof. Bogdan Zygmunt Faculty of Chemistry, Gdansk University of Technology, Poland
8:10-8:40		**Keynote Speech I** Prof. Kelvin Kian Loong Wong The University of Western Australia Topic: "Cardiovascular Imaging and Biomechanics in Diagnosis of Disease"
8:40-9:10		**Keynote Speech II** Prof. Xiaochuan Pan Department of Radiology at The University of Chicago, USA Topic: "Advanced imaging techniques and medical applications"
9:10-9:40		**Keynote Speech III** Prof. Bogdan Zygmunt Faculty of Chemistry, Gdansk University of Technology, Poland Title: "Production, transformation and determination of volatile fatty acids (VFAs) in animals"
9:40-10:00		**Coffee Break & Taking Photo**

SESSION–1 (ICEST 2015-11 presenters)

Morning, May 24, 2015 (Saturday)
Venue: Royal Room 1
Session Chair: Prof. Bogdan Zygmunt
Time: 10:00-12:30

S0003	A Study of High Spatial Resolution Source Apportionment by Using CAMx-PSAT Wen Wei, Ma Xin, **Wei Peng** Chinese Research Academy of Environmental Science *Abstract*—The objective of this paper was to apply CAMx-PSAT to obtain the high spatial resolution source apportionment results of $PM_{2.5}$ in the city of Tangshan. By using this method, a detailed source region and emission category contribution is obtained in Tangshan. The source apportionment showed that the metallurgy industry was the biggest contribution source to $PM_{2.5}$, followed by the coal-fired boilers, vehicles and soil dust. The region analysis ranked the relative importance of source regions and emission categories. Fengnan, Kai Ping and Fengrui are the ones that have a large impact to the urban $PM_{2.5}$ concentration. The average concentration contribution ratios of $PM_{2.5}$ from Tangshan surrounding regions were calculated which were 31.1%, 24.7%, 15.1%, and 26.5% for January, April, July, and October, respectively.
S0008	Response Surface Modelling of Aromatic Micro-Pollutants Adsorption from Water Using Urea/$MnFe_2O_4$ Nanoparticles: Application of Nonlinear Regression Analysis **Sherif Ali Younis Sarhan** Egyptian Petroleum Research Institute (EPRI), Egypt *Abstract*—Petroleum industrial effluents have been shown to contain a wide variety of aromatic micro-pollutants which are toxic and persistent enough to threaten human health and the environment. In the present study, urea surface modified $MnFe_2O_4$ magnetic nanoparticles (MNPs) was ultrasonically developed and characterized by XRD, TEM/EDX, and FTIR techniques. The applicability of urea/$MnFe_2O_4$ MNPs for adsorption of benzene, phenol and catechol as models of aromatic micro-pollutants from water solution was studied. Five variables, coded as pH, NaCl concentration, adsorbent dose, initial adsorbate concentrations and temperature, a three-factor D-optimal design combined with response surface modeling (RSM) was employed for maximizing the removal of these aromatic micro-pollutants from water solution in a batch study. The maximum equilibrium of the studied micro-pollutants by urea functionalized $MnFe_2O_4$ was rapid established within 3h. Kinetic studies showed better applicability for nonlinear pseudo-second-order model for phenol and catechol and nonlinear pseudo-first-order for benzene. Optimization of the process variables for maximum removal of these aromatic micro-pollutants by urea/$MnFe_2O_4$ MNPs was performed using a second-order quadratic model. The significance of variables and their interactions were tested by the analysis of variance (ANOVA) statistics. At initial adsorbate concentrations of 40 mg/L, the optimum conditions of temperature 312.97 K; pH 5.89; NaCl 4992.8 mg/L; and adsorbent dose 1.4 g/L the model predicted maximum removal of 47.75, 83.01 and 90.25% for benzene, phenol and catechol, respectively. Nonlinear regression analysis of Langmuir, Freundlich, Redlich-Peterson and Sips adsorption

	isotherm models was developed under optimum operating conditions. Isotherm studies showed that isotherm equilibrium data was best fitted to nonlinear Langmuir, Redlich-Peterson and Sips isotherm models. The Langmuir adsorption capacity of urea/$MnFe_2O_4$ MNPs was determined as 34.7, 82.92, 85.78 mg/g for benzene, phenol and catechol, respectively. The thermodynamic parameters showed that the adsorption of all the studied adsorbates were feasible and endothermic. The obtained experimental results of urea/$MnFe_2O_4$ MNPs were found successful in removing benzene, phenol and catechol from its water system.
S0011	The Effects of Phthalates Exposure on Body Size in Adolescent Students **Yen-An Tsai**, Jia-Woei Hou, Ching-Ling Lin, Ching-Jung Yu, and Mei-Lien Chen Institute of Environmental and Occupational Health Sciences, School of Medicine, National Yang Ming University, Taiwan *Abstract*—Phthalic acid esters (PAEs) are synthetic chemicals and known to be endocrine disruptors. Puberty is a critical stage that exposures to endocrine-disrupting chemicals (EDCs) may result in adverse effect that can be a potential risk factor of disease in adult. The aim of this study was to investigate the associated between PAEs and obesity in adolescent students. This cross-sectional study was included 270 general adolescents aged 6.5-15.0 years from May 2012 through February 2013. We used questionnaire to evaluate pubertal maturity, measured anthropometric indices (including weight, height, waist circumference (WC), and hip circumference (HC)), and collected first morning urine samples to measure PAEs by UPLC-MS/MS. We found that urinary PAEs metabolites concentrations were positively associated with the anthropometric indices (except BMI and HC) in dose-response relationships after adjusting for confounders. Our results supported that PAEs might induce abdominal obesity in adolescents and WC and Waist to height ratio (WHeitR) are more sensitive indices than BMI to measure abdominal obesity for adolescents.
S0012	Developing Air Pollution Early Warning System For The Marmara Region In Turkey Huseyin Ozdemir, Yusuf Karahan, **Goksel Demir** Bahcesehir University, Environmental Engineering Department, Turkey *Abstract*—Air pollution is an important environmental problem, which has increasing attention in the recent years. Scientists have concern about harmful effects of air pollution on public health and ecological system. The effective management and control of air pollution is required to minimize these problems. Air quality monitoring network provides to measure specified air pollutants. Measurements are then compared with the limit values and models, and eventually reaching solutions by developing control methods. Ministry of Environment and Urban Planning in Turkey has a national air quality monitoring network and measurements which are given hourly on the website. However, the measurement results do not give the overall picture alone and the data must be analyzed. Within this application, system stores the data automatically in a database and makes hourly analysis. Then it sends the results automatically to the authorities. The system takes data from air pollution monitoring stations in the Marmara Region of Turkey. Later, it evaluates the results according to the international air quality standards and informs the authorities by message or e-mail. Therefore, this system will be useful for the governments as Air Pollution Early Warning Systems.
S0015	Influence on Metallomic Distribution in Brian and Vital Organs by Prolonged Consumption

	of Mn in Drinking Water: A Critical Review from Intercellular to Subcellular Distribution **Solomon W. Leung**, Brad Williams and James C.K. Lai Idaho State University, USA *Abstract*—The intake and concentration of metals and electrolytes in our diet are believed to be affecting our general health, in particular, the proper functions of vital organs. For example, in addition to other genetic and environmental factors, consuming water with high alkalinity over one's life time is suspected of leading to diseases such as kidney stones. There is evidence that elemental accumulation due to excessive metal intake would lead to organ failure. In this study, we summarize the data collected by using Wistar rats as experimental species in a prolonged study (750 days) of how ingestion of various amounts of Mn (heavy metal) in drinking water via regular diet intake would affect the metallomic distribution in the brain and other vital organs (e.g., brain, lung, kidney, liver, heart, spleen, and uterus) and pituitary gland as a function of time. Thirty different elements including heavy metals and electrolytes were measured at different developmental ages for the intercellular and subcellular elemental distributions. This study would provide critical insights on how our diet would affect the accumulations of unwanted elements such as heavy metals and trace elements in our vital organs. The results may help researchers and health practitioner to identify possible links between daily diet (metals and electrolytes) and diseases. Specific correlations of elements between intercellular and subcellular levels may also lead to a better understanding of diseases associated with aging such as Alzheimer's and Parkinson's diseases, neurological disorders and organ failures.
S0016	Evaluation of Environmental and Social Impacts of Pedestrianization in Urban Historical Areas: Istanbul Historical Peninsula Case Study **H. Handan Demir**, Isa Cakiroglu, Ummugulsum Alyuz and Goksel Demir Bahcesehir University. Vocational School. Department of Business Administration, Turkey *Abstract*—In this study, the evaluation of the pedestrianization is analyzed in the aspects of social and environmental issues. By researching the progress of pedestrianization in Historical Peninsula of Istanbul from past to present, the pedestrianization has been explained with the basic terms and best practices about from all over world and Turkey. The pedestrianization was evaluated from two contexts which are social and environmental. From social context, access to the pedestrianized area, structural deficiencies in the area and pleasure of the citizens and tradesmen about pedestrianization had been used as the main criteria in the evaluation of process by making surveys to both visitors and tradesman. From environmental context, air quality, noise disturbance issues were considered in terms of emission reduction that is proportional to traffic reduction in the area by using indicators and the potential of the area to be a Zero/Low Emission Zone.
S0017	Influence on Metallomic Distribution in Brain by Prolonged Consumption of Mn in Drinking Water: Modulation of Elemental Levels in Subcellular Fractions James C.K. Lai, Brad Williams, Thomas K.C. Leung and **Solomon W. Leung** Idaho State University, USA *Abstract*—Manganese (Mn) toxicity can arise from a variety of environmental exposure and it differentially affects the nervous system more severely. Our recent finding that chronic and life-span treatment of Mn induces organ-specific and brain region-specific changes in their

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	distribution of trace and major elements prompted us to investigate the hypothesis brain accumulation of Mn induces changes in subcellular levels of trace and major elements. Our results demonstrated chronic and life-span treatment of Mn induced changes in the subcellular distribution of all trace elements studied, especially Br, Co, Cr, Cu, Fe, Mn, Se and V. In particular, Mn induced increases in 8 elements and decreases in 8 other elements in synaptosomes while it induced increases in 13 elements but decreases in 3 other elements in nuclei. Our findings may have pathophysiological implications in neurodegenerative diseases such as Alzheimer's disease and Parkinson's disease. They may also be pathophysiologically relevant in hepatic encephalopathy.
S0019	Oil-contamination Soil Remediation Technology by Microwave Thermal Desorption **Taehoon Koh** Korea Railroad Research Institute, South Korea *Abstract*—In this paper, the feasibility of microwave thermal desorption technology was investigated to treat the oil-contaminated soil in military base. In recent, microwave thermal desorption technology has been newly developed which can substantially reduce the remediation cost of oil-polluted soil with low electric power consumption in Korea. This technology uses MIP (Microwave Irradiated Pyrogen) or microwave absorber in the microwave thermal desorption system in order to effectively develop the microwave heating temperature to treat the oil-contaminated soil. From the lab test, it is found that this technology has a potential to rapidly complete the remediation process of the oil-contaminated soil with high efficiency.
S0022	A Dynamic Product Design Methods for Extend the Product Life Cycle **Jo-Han Chang** and Ting-Yi Wang Graduate Institute of Innovation and Design, National Taipei University of Technology, Taiwan *Abstract*—The life cycle of wooden furniture is long, representing a paradigm of green products. However, because of the high stickiness between furniture and users, the long-term use of wooden furniture in a fixed form may cause psychological burden to users who have constantly changing physiological conditions and requirements. To extend user willingness to use the product continuously, this study inferred and established a dynamic user requirements analysis method and product design concept development method combined with the concept of time axis based on user-centred design and proposed eight dynamic product design models. To evaluate the feasibility and effectiveness of dynamic product design methods, this study conducted evaluation in three stages. In the first stage, we invited sixteen students to examine the feasibility of the new method in the form of a workshop. In the second stage, the product users evaluate the effectiveness of the dynamic product design outcomes. In the third stage, two experts were invited to evaluate the dynamic product design process and methods. The evaluation results of the workshop showed that using the dynamic product design method yielded increasing proposal amounts. The students participating in the workshop had higher satisfaction regarding the thinking dimension of the dynamic product design method than that in the operating dimension. The product users also prefer redesign proposals that used the dynamic product design methods. Finally, the results of the expert evaluation on the design process showed that the dynamic product design development method could help students perform systemic thinking from diverse aspects.

S0023	Study on Changing for Coastal Land Resource Utilization under Climate Change in Taiwan with Cellular Automation
	Ke-Chin Yen, Hsuan-Lin Chen and Szu-Hua Wang
	Chunghua University, Taiwan
	Abstract—Global climate change is one of hot issues in recent years. The most direct impact is the change of coastal environment due to climate change, which also results in urban problems relatively. Moreover, land utilization change not only is a subject of traditional "People – Land" theory in geography for research, but also is associated closely with global environmental change and sustainable development, which are two contemporary research trends. Currently, strategy adjustment, environmental vulnerability and watershed impact are mostly concentrated for the research with respect to impact of climate change on coastal land resource utilization. There are lesser studies about spatial dynamic simulation situations for climate change. In the past, climate change trend ideas were lesser included in land utilization regulations, and scholars also seldom to employ cellular automation (CA) theory in combination with geographic information system for spatial dynamic simulation. For the research key points concluded from above discussion, developments of costal resource utilization in Taoyuan, Hsinchu and Miaoli regions differ with each other. The utilization situations and resulted impacts are also different. Climate change impact, costal living environments and socio-economic conditions related backgrounds are gathered. Ecological energy system is used to construct land resource utilization change ecological energy system equation for grid transformation and spatial analysis simulation. Finally, climate change impact situation is added to simulate impact level for evolution rule to approximate actual change. The future land resource utilization change situations in Taoyuan, Hsinchu and Miaoli and the impact under climate change are predicted as references for future management and resource planning.
S0026	Study on the Impact of Pond Landscape Changes on the Urban Land Resource Use in Taiwan Taoyuan City
	Yi-Yin Tsai, **Ke-Chin Yen** and Ssu-Ning Chi
	Chunghua University, Taiwan
	Abstract—Most of ponds in Taiwan are distributed at Taoyuan Plateau area which were created in the old time for irrigation purpose and have become unique landscape today. However, with the shifting of Taoyuan's urban development center and the land-develop orientated city expansion plan, Taoyuan's ponds are frequently destroyed and resulted in the change of land use. Previous researches have shown that the reasons for the disappearance of pond include the deterioration of water quality, disappearance of water supply source, development of construction land and others. Recent years' climate change and migration of human population also potentially contribute to the reasons of pond disappearance. Exploring the causes for the disappearance of pond and finding the impacting factors can be helpful for environment preservation, ecosystem conservation and the adaptation to climate change. Based on the pond's external driving forces, correlation analysis was used to explore the relationship between the influential factors and the changing area of pond. The research results can be use to model the changing land use of pond landscape to serve as a reference for Taoyuan County's pond resource planning and ecological conservation.

12:30~13:10	Lunch

SESSION–2 (ICEST, ICBBT & JCESD 2015 - 11 presenters)

Afternoon, May 24, 2015 (Saturday)
Venue: Royal Room 1
Session Chair: Prof. Solomon W. Leung
Time: 13:10-15:50

S0024	Groundwater Quality Assessment for Suitable Drinking and Agricultural Irrigation Using Phyco-Chemical Water Analysis in the Rancaekek-Jatinangor District, West Java, Indonesia Mohamad Sapari Dwi Hadian, **Fikri Noor Azy**, **Irda Krismadiyanti**, Dwi Lucia Arfani, Emma Trinurani Sofyan and Tantowi Eko Prayogi Universitas Padjadjaran, Indonesia *Abstract*—Groundwater is very vital and important in meeting the needs of life, especially for drinking, because the use of surface water such as rivers, lakes and others are already do not meet the standards of safe drinking water, due to the amount of domestic waste produced by the people who dumped into water surface. Therefore, studies were performed to evaluate the water quality in the region Rancaekek - Jatinangor. This research was conducted by examining the physical and chemical properties of groundwater in wells and springs, namely pH, electrical conductivity, total dissolved solids in 33 samples, as well as calcium, magnesium, sodium, potassium, bicarbonate, sulfate, and chloride in 10 water samples. These parameters are used to determine the quality of ground water in the region by comparing the quality of drinking water standards published by the WHO and ISI (Indian standard specification for drinking water). TDS, sodium adsorption ratio (SAR), and magnesium is used to evaluate. The results of the analysis concluded that the water quality in the study area is a good category, it can be seen from the results of the phyco-chemical analysis (pH, EC, TDS) and major chemical values (Ca, Mg, Na, K, SO4) which tend to approach 100% feasible for drink and 100% good for agricultural irrigation by TDS, SAR and magnesium examination. This condition occours because the study area is located in a volcanic area that is far from the beach so it is not affected by the intrusion of sea water which increases levels of Na and CL, the natural water filtration process by volcanic rock, resistant to chemical weathering and a balanced acidity, and on the other hand, it is on the upstream before reaching settlements and industry. This situation can be maintained by increasing groundwater and waste management from households and industry, the engineering required to treat wastewater before discharge to the river.
S0033	Subjective Assessment of Occupants' Perception of Indoor Environmental Quality (IEQ) in Hospital Buildings **Pontip Stephen Nimlyat** and Mohd Zin Kander Universiti Teknologi Malaysia

*Abstract—*This study is aim at determining the perceptions of the three occupants' groups in hospital buildings on their assessment of IEQ performance. This study data was collected through the subjective assessment of patients, staff, and visitors using a questionnaire as an instrument in measuring the respondents' perception score on indoor environment variables. The questionnaire administration was carried out in a case study specialist hospital and the data collected was analysed using SPSS Version 22. With a response rate of 90.8%, there was a significant variation in respondents' perception of the four parameters of IEQ, but no statistical variation in their perception of the overall IEQ. There was no statistical difference in the mean score perception of IEQ between patients and visitors, however, a significant difference in mean perception of IEQ occurred between the staff and both patients/visitors. The perception of IEQ in hospital buildings varies across the three occupants' groups in hospital buildings. In order to provide an environment that would be conducive and acceptable to all the occupants in hospital buildings, a level of invariance in their perception must be established.

S0045	Emergy Analysis of waste Treatment in Small Scale Final Solid Waste Disposal Site **Christia Meidiana**, Mustika Anggraeni, Imma Widyawati Agustin Brawijaya University, Indonesia *Abstract—*The enactment of National Waste No. 18/2008 by The Government of Indonesia (GoI) is the opportunity for the local governments to improve the Level of Service (LoS) of Municipal Solid Waste Management (MSWM). The Law requires the local government to implement the environmentally friendly solid waste management including the waste treatment in landfill as a final solid waste disposal site (SWDS). Talangagung landfill located in Malang regency is a small scale landfill which is operated as a controlled landfill to meet this requirement. The landfill was opened in 2009 and equipped with the biogas collection system. Although the landfill covers only 2 ha, it supplies 165 households adjacent to the landfill with biogas. All households use the biogas for cooking as a substitute of kerosene and liquid petroluem gas (LPG). It was obvious that the utilization of the landfill biogas gives benefits to the community. Therefore, the study aims to calculate the transformity of landfill biogas as the coefficient describing the energy accumulation requiring producing the biogas. The calculation of the transformity was conducted using emergy analysis. Beforehand, methane generation was calculated using the methodology proposed by IPCC. The calculation came to result that total production of methane for 20 years is 16,466.23 tons of CH_4 or 345,790.92 tons of CO_{2e}. . However, the landfill biogas utilization is only 25.47 tons of CH_4 or only about 1.16 percent of the total potential biogas. The involvement of scavenger in separating the recyclable materials in landfill reduces the total waste mass disposed. The emergy calculation shows that the solid waste management in small scale final solid waste disposal site requires 2.92E+21 seJ/year.
CD0212	Release of nitrogen and phosphorus from aquaculture farms to Selangor River, Malaysia **Nobuyuki Kawasaki**, MRM Kushairi, Norio Nagao, Fatimah Yusoff, Akio Imai, and Ayato Kohzu Universiti Selangor, Malaysia *Abstract—*The release of nitrogen and phosphorus from aquaculture ponds to Selangor River, Malaysia was estimated. The concentrations of nitrogen and phosphorus in aquaculture ponds were always higher than those in the river, their primary water source, indicating that the

aquaculture ponds are sources of nitrogen and phosphorus in Selangor River. From the careful interview with aquaculture managers, the frequency of water exchange, the number of harvesting, and the amount of feeds added, the total volume of water released to the Selangor River was also obtained. The total amount of nitrogen and phosphorus added to each aquaculture pond was estimated to be about 700 kg N and 60 kg P per year, respectively. About 100-200 kg N and 10-15 kg P were estimated to be released with the waste water per pond per year, accounting for 20-30% of nitrogen and phosphorus in added feeds. It is important for us to precisely estimate the fates of nutrients for the better management and sustainable development of aquaculture industries. Our data may help to improve aquaculture management in future.

S0014	Life Cycle Assessment of Natural Fiber-Based Insulator Corrugated Paper Box to Identify Eco-Design Strategies **Suchada Dedpakdee**, Rattanawan Mungkung, Ratchatee Techapiesancharoenkit Kasetsart University, Thailand *Abstract*—This study explored the potential use of natural fibers as alternative insulate lining in a corrugated paper box for fresh asparagus transportation packaging. Life Cycle Assessment (LCA) was used to evaluate the potential environmental impacts of a natural fiber-based insulation prototype that could help identify the eco-design strategies. The environmental performances of the prototype were evaluated and compared with a corrugated paper box, with forced air cooling before shipment, and a corrugated paper box lined with polyethylene foam and filled with dry ice. The system boundary was the whole life cycle of products. The functional unit on which the comparison was defined as a corrugated paper box (1,100 cm×1,100 cm×1,000 cm) with a load of 300 kg of fresh asparagus for the transportation to a specific oversea destination by air fleet. Data collection was from primary data (i.e. natural fiber-based insulator production) and the background data were sourced from the national life cycle inventory databases (i.e. electricity, water, polyethylene foam), supplemented by international databases (i.e. chemical production, transportation) and literature review (i.e. corrugated paper box production). The LCA results indicated that, for the natural fiber-based insulation production, the highest impact on global warming was associated with the use of electricity by the fiber-drying oven; moreover, the use of sodium hydroxide, for the fiber extraction, caused a significant impact on eco-toxicity. The strategies for eco-design to improve the environmental performances of the natural-fiber insulation could be achieved by avoiding the chemical-extraction process and increasing the energy efficiency of the fiber-drying process. The alternative application of mechanically-steam explosion of natural fibers, instead of the chemical extraction method, could potentially reduce the environmental impact on freshwater eutrophication 83%, human toxicity 74% and terrestrial eco-toxicity 76%. By using a drying technique with higher energy efficiency, it could potentially reduce the use of electricity by approximately 50%. The environmental impacts could potentially be reduced on climate change 29%, terrestrial acidification 25% and freshwater eco-toxicity 15%, respectively.
S0046	Bioactivities of Extracts and Isolation of Compounds from *Tridax Procumbens* L. **Do Nguyen Hoa Thien**, Thanh Phuoc Le and Tien Thanh Nguyen Cantho University, Viet Nam *Abstract*—This study was conducted to investigate the bioactivities of extracts, isolation and

	identification the compounds from aerial parts of Tridax procumbens (T. procumbens). The standardized ethyl acetate extract from T. procumbens shown antibacterial activity against gram negative bacteria as Escherichia coli and Pseudomonas aeruginosa, while the petroleum ether extract did not shown antibacterial activity. Besides, antioxidant activity of ethyl acetate extract (IC_{50}=0.52 mg/mL) is higher than petroleum ether extract (IC_{50}=1.12 mg/mL). Additionally, the ethyl acetate extract resulted significant anti-inflammatory on mice paw edema at the concentration of 200 mg/kg. Moreover, ethyl acetate extract contains two isolated compounds, namely β-sitosterol-3-O-β-D-glucopyranoside (1) and 3′,5-dihydroxy-4′,3,6-trimethoxyflavone-7-O-β-D-glucopyranoside (2), which were identified by ^{1}H-NMR, ^{13}C-NMR, Mass spectrometry. The pharmacological activities of ethyl acetate extract and their compounds indicated that T. procumbens is promising resource for pharmaceutical industry.
S3004	Production, Transformation and Determination of Volatile Fatty Acids in Farm Animals and in the Environment Marta Wasielewska and **Bogdan Zygmunt** Faculty of Chemistry, Gdansk University of Technology, Poland *Abstract*—The paper is a critical discussion of the production, transportation and determination of volatile fatty acids in rumens of ruminants. The odor nuisance of the emission of VFAs, often accompanied by volatile nitrogen- and sulfur-organic compounds from animal farming is also discussed.
H0001	BIONICS BASED SOLAR POWERED CLOTHING FOR TREATING PARKINSON'S DISEASE AND EPILEPSY **Shweta Gupta**, Shivakar Sharma and Vinay Kumar Singh Dr. K. N. MODI UNIVERSITY *Abstract*—This research paper incorporates bionics based solar powered clothing for treatment of Parkinson's disease and Epilepsy. Firstly, the clothing will use the most recent research and technology in which the electronic circuit would be embedded to store data (such as tremors of Parkinson's disease and Epilepsy) and deliver drugs to specific parts of the brain, thus , preventing the cumbersome method of surgery by the method of neurostimulator. Secondly, the electronic circuit will be charged by solar source of energy. This research paper involves bionic based UV-treated natural fiber fabric, such as cotton or linen, in which electronic circuit is embedded with, nanomaterials based, sensors (to sense the tremors and body temperature), drug delivery components and memory to provide stimulation to specific regions of the brain to treat Parkinson's disease and epilepsy. These fabrics are wore on the head to treat the brain diseases. These fabrics work two way, they sense the tremors by tension and compression of the muscle and then, deliver medicine through the skin to appropriate regions of the brain.
H0004	Comparison of Multiple Linear Regression, Isotonic Regression and k Nearest Neighbor (IBk) Algorithms for Prediction of Inhibitory Activity of HDAC6 Inhibitors **Sandhya Vijayasarathy** and Jhinuk Chatterjee PES Institute of Technology, Department of Biotechnology *Abstract*—Histone deacetylase 6 (HDAC6), a member of class II HDACs is considered as a drug target for cancer due to its chief contribution in oncogenic cell transformation. The aim

	of this study was to develop Quantitative Structure Activity Relationship (QSAR) models and evaluate its performance in predicting the inhibitory activity of various HDAC6 inhibitors. To achieve this, a dataset comprising of forty HDAC6 inhibitors were collected from PubChem database and were subjected to processes like Calculation of descriptors, Data pre-processing, Selection of relevant descriptors, QSAR modeling followed by evaluation of the developed models using various statistical parameters. Best results were obtained for k nearest neighbor based QSAR model having Correlation Coefficient (r) = 0.98, Squared Correlation Coefficient (r2) = 0.96, Mean Absolute Error (MAE) = 0.06 and Root Mean Squared Error (RMSE) = 0.15 thus indicating that, it is the best method for prediction of inhibitory activity of HDAC6 inhibitors. Further, cross-validation procedures need to be performed and the model must be tested against a large dataset to authenticate its predictive accuracy.
H0008	In Silico Study of N1-alkyltheobromine as Histamine-H1 Receptor Antagonist **Maywan Hariono** and Habibah Wahab Universiti Sains Malaysia *Abstract*—Presently, we elucidate the mechanism of N1-alkyltheobromine derivatives as histamine-H1 antagonist at a molecular level using computational method (in silico). The experiment was set up by docking those N1-alkyltheobromines to the crystal structure of histamine-H1 receptor and the results showed that the ligands occupied the active pocket of histamine-H1 receptor by interacting with various amino acid residues such as Thr112, Tyr431, Ser111, Asp107 and Lys191 via hydrogen bonds as well as electrostatic interaction.
S0030	Development of Natural Inhibitors for Gas Hydrate Formation **Jeong-Hoon Sa**, Gye-Hoon Kwak, Kunwoo Han and Kun-Hong Lee Pohang University of Science & Technology, South Korea *Abstract*—Gas hydrates are ice-like solid compounds capturing small molecular gas species like carbon dioxide, methane, and hydrocarbons in the crystal structure. They have been considered as highly risky compounds during the pipeline natural gas transportation since they spontaneously form under low temperature and high pressure conditions. The injection of hydrate inhibitors is a key technology to prevent pipeline from plugging. However, conventional inhibitors like alcohols are toxic chemicals, so their utilization is often exposed to the environmental risks. Here, we propose amino acids as natural inhibitors for gas hydrate formation. Phase equilibrium conditions of carbon dioxide, methane, and synthetic natural gas hydrates were obtained in the presence of amino acids. Amino acids were found to inhibit gas hydrate formation by altering thermodynamic conditions of formation. It was found that hydrate inhibition process is mainly driven by hydrogen bonds between water and amino acids. In addition, several amino acids showed abilities to delay hydrate nucleation and retard hydrate growth. From the quantitative analyses, the amphiphilic nature of amino acids made an important contribution to their inhibition abilities, and the amino acid side chain properties were found to be correlated well with their extent of inhibition. Amino acids could induce the structural perturbation of hydrogen bond network between water molecules, so this affects the crystallization behavior of gas hydrates. Amino acids have a variety of potential advantages over conventional hydrate inhibitors. The damage to the environment would be minimized due to their environmentally friendliness. In addition, it can be expected that the amount of loss in recovery could also be considerably reduced as they are nonvolatile. The present findings will bring the hydrate-based gas capture and storage technologies

	significantly closer.

15:50-16:10	**Coffee break**

SESSION–3 (ICPIE, ICEST & ICBBT 2015-12 presenters)

Afternoon, May 24, 2015 (Saturday)
Venue: Royal Room 1
Session Chair: Prof. Jen-Jeng Chen
Time: 16:10-18:50

H0012	The effect of heat treatment time on the formation of forsterite (Mg2SiO4) **Tan Chou Yong**, Tan Yoke Meng, Singh Ramesh, Teh Yee Ching and Yap Boon Kar University of Malaya *Abstract*—In this work, phase pure forsterite (Mg2SiO4) powder was synthesized via solid-state method and heat treatment stage. X-ray diffraction analysis was conducted to investigate on the phase purity of forsterite powder. The synthesized powder were heat treated at 1200 oC for 1 min, 1 hour and 2 hours with ramping rate of 10 oC/min. Decomposition was observed for powder heat treated for 1 min. Periclase and enstatite peak were detected as a form of secondary phases. 1 and 2 hours of holding during heat treatment produced phase pure forsterite with a difference of improved intensity which indicated that there was enhancement towards the crystalline structure of forsterite powder.
H0014	A computer-based simulator for percutaneous coronary intervention **Jianhuang Wu**, Haoyu Wang, Peng Zhang and Qingmao Hu Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences *Abstract*—Percutaneous coronary intervention (PCI) is widely used in the treatment of coronary artery disease. This procedure requires interventional cardiologists to have high proficiency and therefore demands an extensive training period to ensure successful outcome. This paper presents a computer-based interactive simulator for training PCI procedure. Trainee can interact with the virtual simulator with real instruments and basic manipulations encountered in clinical PCI procedure. Although presently targeted at PCI, our simulator could be easily extended to mimic the basic necessities of any vascular interventional radiology procedures by updating vascular anatomy.
X0003	Lattice Boltzmann simulation of fluid Flow in Complex Porous Media Based on CT Image **Zi-sen Wu**, Ping-chuan Dong and Gang Lei and Shu Yang and Nai Cao China University of Petroleum, Beijing, China *Asbtract*—In this paper, we simulate single phase and two-fluid-phase flow in realistic porous media using a lattice Boltzmann (LB). We used X-ray tomographic sandstones. These are

	binary digital models describing the complex pore space. First we show lattice boltzmann simulation results of single phase flow. We calculate the flow field and permeability of the micromodel and find agreement with experiment. Second, we simulate two-fluid-phase flow at the pore scale using the Shan-Chen model lattice boltzmann method. First, we calculate relative permeability for each fluid. Then we observe that the relative permeability of non-wetting phase increases with pressure gradient, while that of wetting phase stays almost the same.
X0004	The research of fracture connectivity effect on shale gas transport using discrete fracture model **Lidong Mi**, Hanqiao Jiang, Ye Tian, Junjian Li, Shuaiwei Ding China University of Petroleum (Beijing), China *Abstract*—In this paper, a new numerical method is introduced in the simulation of fluid transport in fractured shale reservoirs. Discrete Fracture Model (DFM) has been established and fluid transport behavior is investigated by solving the mass conservation equations in the matrix and fracture using the Finite Element Analyses (FEA) Method. In the DFM, fluid flow into the wellbore which are surrounded by impermeable rock matrix is only through fractures those connect to it. Flow through fractures, which meet the "Cubic law", in naturally fractured shale gas reservoir has been observed to contribute to overall production of fluid from the reservoir through the wellbore to the surface. The model is validated and then used to simulate a random generated fractures network to study the characteristics of transport in Fractured Porous Media (FPM). It is found that the fractures' connection and the number of fractures which connect to wellbore have a significant influence on the fluid migration.
X0011	Optimization of Well Location, Type and Trajectory by a Modified Particle Swarm Optimization Algorithm for the PUNQ-S3 Model **Shuaiwei Ding**, Hanqiao Jiang, Junjian Li, Guangwei Liu, Lidong Mi China University of Petroleum (Beijing), China *Abstract*—Determining the optimum well location, type and trajectory in an oil field is a challenging work for reservoir engineers. The problem is more complicated due to the wide variety of possible well types that must be considered. In this paper, a general methodology for the optimization of well location, type and trajectory in the combination of a modified particle swarm optimization algorithm and a well optimization model is presented. The modified particle swarm optimization algorithm is first discussed, and then the optimization model of well location, type and trajectory is proposed, and finally the implementation of the method for different well placement optimization problems for PUNQ-S3 model including different drive methods and well types is described. The results show the modification of standard particle swarm optimization algorithm is effective and the type (vertical, horizontal and deviated well) and the number of wells should also be an optimization parameter. For PUNQ-S3 model, it is reasonable to use vertical wells instead of horizontal or deviated wells and it is not wise to use water injection wells in the early development stage due to the strength of the aquifer.
X0019	A New Injectivity Prediction Model for Early Polymer Injection **Xiang'an Lu**, Hanqiao Jiang, Yanli Pei China University of Petroleum, Beijing, China

Abstract—Early polymer injection has become an effective way to improve oil recovery in deep offshore fields. Since the reservoir will still be high in oil saturation during this process, a detailed description of water-oil two-phase flow is required to accurately predict polymer injectivity of the reservoir. A polymer fractional flow model was first derived by including polymer rheology effects and two phase flow resistance factor. Water saturation profile was then proposed as four self-sharpening fronts to describe the detailed fluid saturation distribution. The polymer injectivity prediction model for both monolayer and multilayer reservoirs was finally established by separating the pressure drop into several parts based on the saturation profile. Results showed the new model improved the accuracy and efficiency of injectivity prediction in early polymer injection. This model is more like a miniature numerical simulator for early polymer injection that can output the dynamic polymer injectivity with the input of only a few pieces of field data that can be acquired easily.

X0020	Simulation of Drilling Pressure Profile in Directional Drilling and User Program Development
	Weerapong Panichaporn, Ruktai Prurapark and Kitipat Siemanond
	Chulalongkorn University, Thailand
	Abstract—Maintaining wellbore stability is challenging in any drilling situation, especially when directional drilling with narrow pressure window are experienced. An imperative parameter to control wellbore stability is downhole pressure or equivalent circulating density (ECD). An accurate downhole pressure is required in order to maintain it in pressure window and also avoid drilling problems which cause interruption during drilling operation, resulting in high non-productive time. Since annular frictional pressure loss increases ECD, it becomes very challenging to estimate accurate annular pressure loss. Many experimental studies have been developed annular pressure loss prediction without validating results with field measurements. This study aims to estimate an annular pressure loss in directional drilling with or without pipe rotation using several developed models with casing program. The performance of the models are tested by comparing the results with field measurements obtained from Kam Phaeng San Basin, Thailand. The conventional annular frictional pressure loss combined with increasing-pressure-loss model gives a good agreement with field measurements, a pipe rotation effect is more influential on annular pressure loss especially in smaller annular space. In addition, a user-friendly software is also developed using MATLAB platform to predict real time downhole pressure and ECD with casing program.
X0012	Green support for fuel use-Blends to extend deadlines of comfort
	Dr. Mahesh K. Dalal
	Shri JJTUniversity, India
	Abstract— As the Deadline for non availability of fossil fuel inches closer, options to continue the comfort of modern life by migrating to renewable sources of energy must be weighed. The present paper discusses renewable fuel sources. The best option is the use of blends of biofuels/bio diesel which can be increased from 5% to 15% and more gradually and uniformally increasing with time to extend the deadline for exaustion of non renewable fuel sources across all regions and to avail maximum advantage in global village combating on many fronts like climate change, depleting resources, ozon layer depletion etc for comfort by environmental management.
H0010	Enhanced Depth Features of Human Bodies for Image Retargeting

Chin-Chen Chang
National United University

Abstract—In this paper, we propose enhanced depth features of human bodies for image retargeting. First, the depth map of an input image is generated. Second, with the depth map we divide the depths into several depth layers to separate human bodies and the background. Next, the proposed approach performs the morphological dilation operation on the human bodies and enhances the edges of the human bodies to generate an enhanced depth map. Moreover, we assign different weights for the human bodies and their edges according to their importance. Finally, we generate the target image based on the enhanced depth map. The proposed approach can obtain pleasing resized images for a wide range of images

S0036	Optimization of Simultaneous Biomass Production and Nutrient Removal by Mixotrophic *Chodatella* sp. Using Box-Behnken Experimental Design **Jen-Jeng Chen**, Yu-Ru Lee, Wen-Liang Lai, Shih-Tsung Chen and Tsai-Jung, Chiang Tajen University, Taiwan *Abstract*—The effects of aeration rate, piggery wastewater content, cultivation temperature, and light intensity on the growth rate, lipid content, and nitrogen and phosphorus removal rates are investigated using a Box-Behnken experimental design under full factorial methodology. The aeration rate is the most important factor influencing cell growth and nutrient removal. However, the lipid content is mainly controlled by the piggery wastewater content. The mixotrophic cultivation simultaneously assimilated up to 95.6% ammonia nitrogen, 74.2% total phosphorus, and 80.9% organic carbon from piggery wastewater, which reduced the required nutrient for the culture of microalge, therefore produced biodiesel practically and economically.
S3002	Catalytic Performance by Kinetics Evaluation of Novel KOH-Modified Zinc Oxide in the Heterogeneous Transesterification of Rice Bran Oil to Biodiesel **Abdul Rahim Yacob**, Abdu Muhammad Bello, Aminuddin Ruskam and Kamaluddeen Suleiman Kabo Universiti Teknologi Malaysia *Abstract*—Biodiesel is one of the promising biofuel today, the transesterification process to obtain biodiesel however is faced with problems of catalysts formulation and evaluation. In this study, kinetics of heterogeneous transesterification of rice bran oil (RBO) with novel prepared KOH-modified ZnO was explored. The catalyst was prepared by wet impregnation, calcined at 500^oC for 6 hours characterized using nitrogen adsorption (BET) surface area analysis and basic sites by back titration method. The product biodiesel prepared was then analyzed by nuclear magnetic resonance spectroscopy (^{1}HNMR) while kinetic studies for the reaction was carried out at 30, 40, 50, 60, 70 and 80^oC temperature at reaction time of 30, 60, 90, 120, 150 and 180mins respectively. The results showed that the reaction follows first order model with respect to triglyceride, has a reaction constant of 0.0003 s^{-1}, activation energy of 59 kJmol^{-1} while 15K-ZnO catalyst shows the highest turnover frequency (TOF) of 11.56 hr^{-1} with oil to biodiesel conversion of 96.5%. Koros-Nowak Criterion test of 1.01 show that the catalytic performance is independent of transport phenomena which indicates that this novel and very active base catalyst for transesterification reaction is was not affected by mass transfer process.

S0029	The Long-Term Greenhouse Gas Emission Mitigation from Thailand's Energy Efficiency and Alternative Energy Development Plan **Chaichan Ritkrerkkrai**, Wongkot Wongsapai and Det Damrongsak Department of Mechanical Engineering, Faculty of Engineering, Chiang Mai University, Thailand *Abstract*—This paper builds a model of energy demand and supply for Thailand by using Long Range Energy Alternatives Planning (LEAP) software with a focus on evaluating, and providing insights for, energy efficiency and renewable energy policies. The demand-side comprises five main sectors with cost-minimization optimization approach while the supply side use the linear estimation to calculate under the least cost concept, with scenarios from the energy efficiency and alternative energy development plan covering the base year 2010 to 2030. The results examine that Thailand would reduce the energy by 38,845 ktoe in the year 2030 from the energy efficiency plan. The total greenhouse gas mitigation in 2030 would be 150 and 113 $Mt\text{-}CO_2$ from the base year from energy efficiency and alternative energy development plan, respectively.
S2001 Poster	Statistical Comparison of Water Qualities in the Geum River, South Korea **Hyo Young Kim**, Hye Won Lee, Seok Soon Park Ewha Woman's University, South Korea *Abstract*—This study statistically analyzed the response of water qualities to Geum River restoration project, as a part of national four river restoration project in South Korea. The restoration work included sediment dredging, weir construction, and channel enlargement, etc., in low reach of the river. In upper reach, however, no restoration work was performed. The project was conducted from 2010 to 2011, in order to prevent flood and draught, and to enhance water resource against an increasing climate change. Appropriate statistical method for estimating the characteristics of the population to the observed sample data should be selected to identify the change in the water quality due to the national policy or projects. Due to the open occurred skewed (non-normal) distribution of water quality data, both parametric and non-parametric statistical methods were utilized along with normality test. The monthly data measured before and after the restoration project in national water quality monitoring stations in Geum River were compared utilizing the paired t-test and the sign-test. The water quality data included Biochemical Oxygen Demand(BOD), Chemical Oxygen Demand(COD), Total Nitrogen(TN), Total Phosphorus(TP) and Chlorophyll-a. In addition, this study invented X-Y plot graphic method in order to visualize the data comparison. This study shown that the X-Y plot graphic method as well as the paired t-test and the sign-test with normality test, could be a powerful tool to compare the water quality. It was concluded that the water quality should be improved by the Geum river restoration project.
S3001 Poster	The Interaction Characteristic of Auramine O and Rocceline NS with Granular Activated Carbon **Hee-Young Kim**, Dong-Su Kim Ewha Womans University, Republic of Korea *Abstract*—The dyes which include several structural varieties such as acidic, reactive, basic, disperse, azo and metal complex dyes is used in various industries such as food, textile and paper so on. They release their dye-effluents into the natural water resources. It leads to increase in turbidity and toxicity in water resources. Its presence in few amount also makes the water undesirable for using. Then, many researchers have studied removal of dyes. Especially, adsorption on activated carbon is becoming more common for

removal of dyes from wastewater lately.

Acidic and basic dye among dyes was selected as representative adsorbates for this study. Actually although this is different dyes, the characteristic of this both of dyes is known to be similar. In present research, Difference of interaction characteristics of Auramine O (AO) and Rocceline NS (RN) dyes with common adsorbent, granular activated carbon (GAC), has been studied on aqueous waste solutions. AO is highly hazardous as interference with the oxygen-carrying ability of blood and damage with the eyes. It is also a probable carcinogen in humans. RN is wide use as a red azo dye in dyeing textile fabrics, silk and photo-catalysis. It is degraded slowly in water system.

We investigated various physicochemical parameters such as reaction temperature, initial dye concentration to achieve maximum adsorption. The adsorption reached at the equilibrium state about 100 min for AO and RN from the beginning of the experiments. With varying the initial dye concentrations, the results showed that the adsorption capacity of both dyes increased with the initial concentration increased. The results showed that the adsorption process of two dyes followed well pseudo-second-order kinetics. The experimental data were analyzed using two isotherm models namely Langmuir and Freundlich. Adsorption equilibrium data of RN and AO followed well both isotherms, the Langmuir isotherm model and Freundlich isotherm model. The adsorption capacity of RN and AO increased with increased temperature. But the interval of adsorption capacity was not distinct with increased temperature. Thermodynamic parameters such as $\Delta G°$, $\Delta H°$ and $\Delta S°$ were also evaluated. The $\Delta H°$ parameter was found to be 50.60 and 9.39 kJ/mol for AO and RN adsorption, respectively. The free energy change of adsorption was -12.28 kJ/mol with AO and -5.58 kJ/mol with RN at 298K.

19:00	Dinner

Conference ending
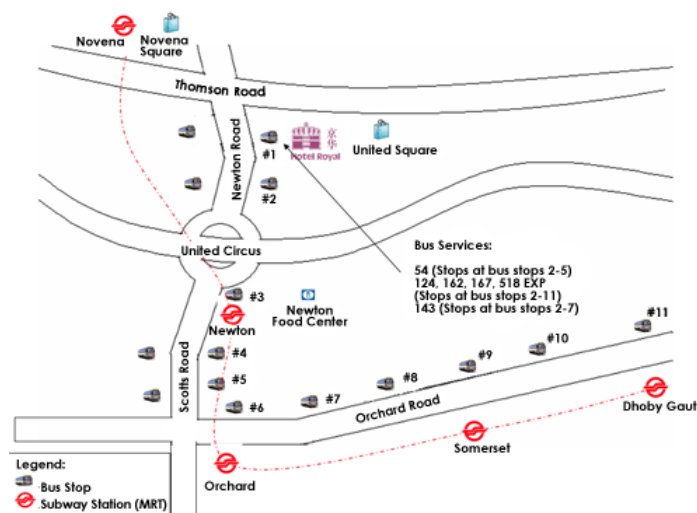
Conference Venue

Hotel Royal

36 Newton Road Singapore 307964
Tel: +65 64260168 / Fax: +65 62538668
Contact person: Benjamin Lim
E-mail address: Benjamin@hotelroyal.com.sg

(http://www.hotelroyal.com.sg/about.html)

Location Map:

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

The organizer won't provide accommodation, we suggest you make an early reservation, since April is peak season in Istanbul. Thank you!

APCBEES FORTHCOMING CONFERENCES

CONFERENCE INFORMATION		PUBLICATION
Aug 05-06, 2015, Paris, France		
ICGES 2015	2015 4th International Conference on Geological and Environmental Sciences http://www.icges.org/	International Journal of Geological Engineering (IJGE)
ICEAE 2015	2015 5th International Conference on Environmental and Agriculture Engineering http://www.iceae.org/	Journal of Advanced Agricultural Technologies (JOAAT ISSN: 2301-3737) or International Journal of Environmental Science and Development (IJESD ISSN: 2010-0264)
ICCCE 2015	2015 6th International Conference on Chemistry and Chemical Engineering http://www.iccce.org/	International Journal of Chemical Engineering and Applications (IJCEA, ISSN: 2010-0221)
Aug 27-28, 2015, Hong Kong		
ICSEE 2015	2015 2nd International Conference on Substantial Environmental Engineering http://www.icsee.org/	Volume of International Proceedings of Chemical, Biological and Environmental Engineering Journal (IPCBEE, ISSN: 2010-4618)
ICBBE 2015	2015 2nd International Conference on Biomedical and Bioinformatics Engineering http://www.icbbe.org/	International Journal of Bioscience, Biochemistry and Bioinformatics (IJBBB, ISSN: 2010-3638) or International Journal of Pharma Medicine and Biological Sciences (IJPMBS, ISSN: 2278-5221)
CCEA 2015	2015 6th International Conference on Chemical Engineering and Applications http://www.ccea.org/	International Journal of Bioscience, Biochemistry and Bioinformatics (IJBBB, ISSN: 2010-3638) or International Journal of Chemical Engineering and Applications (IJCEA, ISSN:2010-0221)
Sep. 05-06, 2015, Shanghai, China		
ICREE 2015	2015 3rd International Conference on Renewable Energy and Environment (ICREE 2015) http://www.icree.org/	International Journal of Smart Grid and Clean Energy (IJSGCE, ISSN: 2315-4462)
ICBMS 2015	2015 3rd International Conference on Biological and Medical Sciences (ICBMS 2015) http://www.icbms.org/	International Journal of Pharma Medicine and Biological Sciences (IJPMBS, ISSN: 2278-5221)
ICCEG 2015	2015 International Conference on Civil Engineering and Geology (ICCEG 2015) http://www.icceg.org/	WIT Transactions on the Built Environment (ISSN: 1743-3509) or International Journal of Geological Engineering (IJGE, ISSN: 2301-3818)
Sep. 14-15, 2015, Milan, Italy		

ICBEE 2015	2015 7th International Conference on Chemical, Biological and Environmental Engineering http://www.icbee.org/	Volume of International Proceedings of Chemical, Biological and Environmental Engineering Journal (IPCBEE, ISSN: 2010-4618)
ICECS 2015	2015 8th International Conference on Environmental and Computer Science http://www.icecs.org/	Journal of Environmental Science and Development (IJESD, ISSN:2010-0264) or International Journal of Computer Theory and Engineering (IJCTE, ISSN: 1793-8201),
ICBEM 2015	2015 5th International Conference on Biotechnology and Environment Management http://www.icbem.org/	International Journal of Bioscience, Biochemistry and Bioinformatics (IJBBB, ISSN: 2010-3638) or Journal of Life Sciences and Technologies (JOLST, ISSN: 2301-3672)
Oct. 11-12, 2015, New York, USA		
ICSEA 2015	2015 3rd International Conference on Sustainable Environment and Agriculture (ICSEA 2015) http://www.icsea.org/	Journal of Environmental Science and Development (IJESD, ISSN:2010-0264) or Journal of Advanced Agricultural Technologies (JOAAT ISSN: 2301-3737)
ICFN 2015	2015 International Conference on Food and Nutrition (ICFN 2015) http://www.icfn.org/	International Journal of Food Engineering (IJFE)
ICBEC 2015	2015 6th International Conference on Biology, Environment and Chemistry (ICBEC 2015) http://www.icbec.org/	Volume of International Proceedings of Chemical, Biological and Environmental Engineering Journal (IPCBEE, ISSN: 2010-4618)
Oct. 23-25, 2015, Beijing, China		
ICAFS 2015	2015 2nd International Conference on Advances in Food Sciences (ICAFS 2015) http://www.icafs.org/	Volume of International Proceedings of Chemical, Biological and Environmental Engineering Journal (IPCBEE, ISSN: 2010-4618)
ICEBS 2015	2015 5th International Conference on Environment and BioScience (ICEBS 2015) http://www.icebs.org/	International Journal of Pharma Medicine and Biological Sciences (IJPMBS, ISSN: 2278-5221)
ICAAS 2015	2015 6th International Conference on Agriculture and Animal Science (ICAAS 2015) http://www.icaas.net/	Journal of Advanced Agricultural Technologies (JOAAT, ISSN:2301-3737)
Nov. 19-21, 2015, Auckland, New Zealand		
ICCEN 2015	2015 4th International Conference on Civil Engineering (ICCEN 2015) http://www.iccen.org/	International Journal of Engineering and Technology (IJET, ISSN:1793-8236)
ICFSH 2015	2015 2nd International Conference on Food Sciences and Health (ICFSH 2015) http://www.icfsh.org/	International Journal of Food Engineering (IJFE ISSN: 2301-3664) or Journal of Advanced Agricultural Technologies (JOAAT ISSN: 2301-3737)

ICECB 2015	2015 4th International Conference on Environment, Chemistry and Biology (ICECB 2015) http://www.icecb.org/	Volume of International Proceedings of Chemical, Biological and Environmental Engineering Journal (IPCBEE, ISSN: 2010-4618)
Dec. 5-6, 2015, Dubai, UAE		
ICFAS 2015	2015 3rd International Conference on Food and Agricultural Sciences (ICFAS 2015) http://www.icfas.org/	Journal of Advanced Agricultural Technologies (JOAAT, ISSN:2301-3737) or International Journal of Food Engineering (IJFE，ISSN: 2301-3664),
ICEPP 2015	2015 3rd International Conference on Environment Pollution and Prevention (ICEPP 2015) http://www.icepp.org/	Journal of Environmental Science and Development (IJESD, ISSN:2010-0264)
ICMEB 2015	2015 3rd International Conference on Medical, Environmental and Bio-technology (ICMEB 2015) http://www.icmeb.org/	International Journal of Pharma Medicine and Biological Sciences (IJPMBS, ISSN: 2278-5221) or Journal of Environmental Science and Development (IJESD, ISSN:2010-0264),
Dec. 25-26, 2015, Phuket, Thailand		
ICESR 2015	2015 2nd International Conference on Environmental Systems Research (ICESR 2015) http://www.icesr.org/	Volume of International Proceedings of Chemical, Biological and Environmental Engineering Journal (IPCBEE, ISSN: 2010-4618)
ICAMC 2015	2015 International Conference on Architecture, Materials and Construction(ICAMC 2015) http://www.icamc.org/	International Journal of Structural and Civil Engineering Research (IJSCER, ISSN: 2319-6009) or International Journal of Materials, Mechanics and Manufacturing (IJMMM, ISSN: 1793-8198)
ICSAT 2015	2015 International Conference on Sustainable Agriculture Technologies (ICSAT 2015) http://www.icsat.org/	Journal of Advanced Agricultural Technologies (JOAAT, ISSN:2301-3737)

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Note

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Feedback Information

(Please Fill this Form and Return it to us any Time during the Conference Days)

Personal Information

● Conference Name and Paper ID	
● Full Name	
● E-mail Address	
● Area of Research	
● Affiliation	

Please indicate your overall satisfaction with this conference with "√"

	Very Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Very Dissatisfied
Conference Content					
Presentation and Paper Value					
Registration Process					
Venue					
Food and Beverage					

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Where did you get the conference information?	
Would you please specify the main reason for attending this conference?	
Did the conference fulfill your reason for attending?	Yes – Absolutely ☐ Yes- But not to my full extent ☐ No ☐ (If "No", please tell us the main reason)
Would you please list the top 3 to 5 universities in your city?	

Other Field of Interest	- 32 -
Any Other Suggestions/ Comments	

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