2018 4th International Conference on Advances in Environment Research
(ICAER 2018)

Hong Kong

May 28-30, 2018

www.cbees.org

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2018 HKCBEES Hong Kong Conference Introductions

Welcome to CBEES 2018 conference in Hong Kong. The objective of the Hong Kong conference 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 Research.

2018 4th International Conference on Advances in Environment Research (ICAER 2018)

❆ **Paper publishing and index: ICAER 2018** papers will be published in the following Journal:

International Journal of Environmental Science and Development (IJESD, ISSN: 2010-0264), and be included in the Engineering & Technology Digital Library, and indexed by CAS, WorldCat, Google Scholar, Cross ref, ProQuest , CABI.

International Journal of Structural and Civil Engineering Research (IJSCER) (ISSN: 2319-6009, DOI: 10.18178/ijscer), which will be indexed by Index Corpernicus, ProQuest, UDL, Google Scholar, Open J-Gate; etc.

Conference website and email: http://www.icaer.org/; icaer@cbees.net.

Presentation Instructions

Instructions for Oral Presentations

Devices Provided by the Conference Organizer:

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

Materials Provided by the Presenters:

PowerPoint or PDF Files (Files should be copied to the Conference laptop at the beginning of each Session.)

Duration of each Presentation (Tentatively):

Regular Oral Presentation: about **17** Minutes of Presentation and **3** Minutes of Question and Answer
Keynote Speech: about **40** Minutes of Presentation and **5** Minutes of Question and Answer

Instructions for Poster Presentation

Materials Provided by the Conference Organizer:

The place to put poster

Materials Provided by the Presenters:

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

Best Presentation Award

One best oral presentation will be selected from each oral presentation session, and the Certificate for Best Oral Presentation will be awarded at the end of each session on May 29, 2018.

Dress code

Please wear formal clothes or national representative of clothing.

Keynote Speaker Introductions

Keynote Speaker I

Prof. Solomon W. Leung
Idaho State University, USA

Dr. Solomon Leung graduated from University of Iowa, USA, with a B.A., M.S., and Ph.D. from Chemistry, Chemistry Engineering, and Environmental Engineering, respectively. Prior to working in the academics, he was a senior research engineer with the railroads. Dr. Leung is a full professor in Civil and Environmental Engineering Department at Idaho State University, Idaho, USA where he resides in the last 26 years. Dr. Leung has published more than 170 presentations with abstracts nationally and internationally, 37 peer-reviewed papers, and 76 conference proceedings and book chapters. He has a diversified research interest which includes physicochemical treatments in water and wastewater, environmental risk and toxicological assessment, and cancer therapy. His recent developments are in applications of nanotechnology and biosensor.

Topic: "Metallomic Distribution in Vital Organs as Influenced by Dietary Intakes and the Implications"

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 for a prolonged time is suspected of leading to diseases such as kidney stones.   There is evidence that elemental accumulation due to excessive metal intakes would lead to organ failure.

This study is an extensive investigation of metallomic distribution of Wistar Rats after they have consumed 30 different elements (including heavy metals and electrolytes) via dietary intakes throughout their life-span (from 5 to 750 days).

In this study, the distributions of these elements in various vital organs such as heart, kidney, lung, spleen, liver, pituitary, and uterus over time were conducted.   In addition, how heavy metal supplement, such as Mn, influenced the elemental accumulations inside the organs was also analyzed.

The results of study have high impact to our understanding of how the living environment would affect our well beings.   This study would provide insights on how our diet would affect the accumulations of unwanted elements, such as heavy metals, in our vital organs. The results may also help researchers and health practitioner to identify possible links between daily diet and associated diseases inside the vital organs.

Keynote Speaker II

Prof. Ngai Weng Chan
School of Humanities, Universiti Sains Malaysia, Malaysia

Ngai Weng Chan is Professor of Physical Geography at the Universiti Sains Malaysia in Penang, Malaysia. His main research areas are Environmental Hazards Management, Hydro-Climatology & Water Resources Management. He is currently Vice-President of the International Water Resources Association, Member of International Association of Hydrological Sciences and Member of International Water Association. He is currently President of Water Watch Penang (WWP), Treasurer of Malaysian Environmental NGOs (MENGOs) and member of Malaysian Water Partnership and Malaysian Water Association. He has completed more than 50 research/consultancy projects and published 26 Books, 59 Chapters in Books, and more than 100 professional papers.

Topic: "ENHANCING BIOMASS ENERGY PRODUCTION TOWARDS STABILISING CLIMATE: CASE STUDY OF MALAYSIA"

Abstract: Global climate change, especially global warming, is considered by far the greatest current and future threat and challenge to the survival of humanity. Controlling global warming via stabilising the climate is a necessary step towards a country's sustainable development. Malaysia is a country that is rich in oil palm resources which produces huge volumes of biomass. Hence, producing energy from oil palm biomass as renewable energy is a perfect solution to stabilising climate and controlling global warming. Malaysia has million of hectares of oil palm plantations generating huge quantities of biomass every year. Potentially, this huge biomass resource from oil palm industries is very promising alternative clean energy source that not only addresses global warming but also reduces the country's needs for fossil fuels. This paper aims to present current scenario of oil palm biomass in Malaysia covering issues on availability and sustainability, and current and possible utilization of oil palm biomass. This paper will also discuss biomass applications and the green technology financing scheme (GTFS) of Greentech Malaysia as a catalyst in pushing for this renewable energy source. It examines the main players and their roles in the GTFS. The paper also examines the feasibility of biomass conversion technologies and selected ongoing projects in Malaysia related to utilization of oil palm biomass as a source of renewable energy. The findings of the paper indicates that Malaysia has huge biomass potentials, and is in a position to move towards enhancing biomass energy production as a source of renewable energy towards stabilising climate and controlling global warming.

Keynote Speaker III

Prof. Hyo Choi
Gangneung-Wonju National University, South Korea

Dr. Hyo Choi is meteorologist, environmental scientist and physical oceanographer with over 40 years experiences in numerical modeling researches as Overseas invited senior researcher by Korean Government of Korea Ocean Research & Development Institute (KORDI (now, KIOST) of KAIST), Ministry of Science & Technology, a high-level Researcher (nominated by President of Korean Government) of National Fisheries & Research Development Institute (NFRDI), Ministry of Maritime Affairs & Fisheries, and Full Professor of Gangneung-Wonju National University.　He obtained 2 Ph.D. degrees from Dept. of Civil Engineering, University of Texas at Austin, USA (1984) and College of Environmental Sciences, Peking University, Beijing; China (2004).　His research interests cover a variety of fields in Meteorology, Environmental Science & Engineering and Physical Oceanography.

He acted as not only Interpreter and Investigator of Korea Antarctic Scientific Expedition Team for two times (1985~1987), but also Korean Government Representative for Inter-governmental Meetings on Antarctic Treaty and Science Policies.　He has been President of Korean Environmental Sciences Society (2002~2003), President and Vice President of Asia-Oceania Geosciences Society, Singapore (Atmospheric Section-60 Nations), Director General of Donghae Coastal Region Research Institute (1989~1991) and Dean of the Graduate School, Gangneung-Wonju National University, Korea (2009~2011, 2011~2012). In present, he is Director General of Atmospheric & Oceanic Disaster Research Institute, Korea (2014~Present), High-end Foreign Expert of South China Sea Institute of Oceanology, China (CAS; 2015~Presen), and also acting as Editor-in-Chief of 13 international journals (USA, Singapore, India) and Editor of 25 ones (USA, UK, Italy, Canada, etc.) in Environmental Pollution, Disaster, Agriculture, Food sciences, Water resources, Lake and rivers, GIS, Physical sciences, Oceanography, Fishery and Meteorology.

Topic: **Trapping of particulate matters emitted from a Korean coastal city associated with dusts transported from Nei-Mongo by cyclonic air flow and shrunken atmospheric layer**

Abstract: Trapping of particulate matters emitted from a Korean eastern mountainous coastal city (Gangneung) combined with dust particles transported from Neimongo was investigated by the numerical simulation of 2 3D-Weather Research & Forecasting model 3-6 version for air flow, streamline, moisture advection, vorticity and atmospheric boundary layer, MTSAT-IR satellite pictures for cloud and yellow dust, and Hysplit backward trajectory model, respectively. PM10, PM2.5 and PM1 concentrations were measured at a 10m height-ground level by a GRIMM 1107 aerosol sampler from May 6~10, 2007. Before the transportation of dust particles from Nei-Mongo in the northern Arid area of China toward Gangneung city on May 6, PM1, PM2.5 and PM1 were 62.28 μg/m3, 43.07 μg/m3, and 30.75 μg/m3, respectively.   On May 7~8, their concentrations reached 357.48 μg/m3, 83.04 μg/m3, and 65.76 μg/m. High PM10, PM2.5 and PM1 concentrations occurred at 0900LST (beginning of office hour) and 1900LST (ending of office hour), due to a great amounts of gases and particulate matters emitted from both vehicles and flying dusts on the road and additionally from heating boilers in the resident area around 1900LST. Dust particles transported from Nei-Mongo toward the top of Mt. Taegulyang (898m height) in the west of the city moved down along the eastern slope of the mountain to the coastal basin (city) and were trapped by cyclonic air flow with both westerly wind of inland coast and oppositely easterly wind in the coastal sea and should be merged into the ground surface, resulting in high particulate concentrations. After sunset, their concentrations rapidly increased again within nocturnal surface inversion layer (NSIL) of the city much shrunken due to cooling ofthe ground surface than daytime thermal internal boundary layer (TIBL) like convective boundary layer (CBL) uplifted by daytime solar heating toward the ground surface, resulting in the highest contrations at 2000LST. This work is funded by Korea Meteorological Administration Research & Development Program under "Grant CATER 2006-2308-Generation mechanism and prediction of windstorm in the mountainous coast" and continued in 2012.

Keynote Speaker IV

Assoc. Prof. P. W. T. Pong
The University of Hong Kong, Hong Kong

Philip W. T. Pong is a chartered physicist, a chartered electrical engineer, and a chartered energy engineer. He is a registered professional engineer in electrical, electronics, and energy. He is working on spintronic magnetic field sensors, smart grid, and nano-bio at the Department of Electrical and Electronic Engineering (EEE), the University of Hong Kong (HKU). He received a PhD in engineering from the University of Cambridge in 2005. After working as a postdoctoral researcher at the Magnetic Materials Group at the National Institute of Standards and Technology (NIST) in the United States for three years, he joined the HKU Faculty of Engineering where he is now an associate professor working on development and applications of spintronic sensors and magnetic nanoparticle technologies in smart grid and smart living. He is a Senior Member of IEEE and Corporate Member of HKIE in Electrical, Electronics, and Energy Divisions. He is an associate editor for two SCI journals, and he serves on the editorial review board of the IEEE Magnetics Letters. He published over 200 technical papers. He is a Fellow of the Institute of Materials, Minerals and Mining and also a Fellow of the NANOSMAT Society.

Topic: Trilateral Relation of Clean Energy–Smart City–Sensing: How Magnetic Sensors Can Be The Vanguard of Sustainability

Abstract: Smart city, clean energy and sensing form a trilateral relation that is shaping the current status as well as future prospect of smart living. A smart city is a sustainable urban center that interconnects and improve quality of life for its inhabitants which are ever increasing due to the rapid urbanization particularly in Asia. A smart city is composed of a number of components including smart buildings, smart grid, smart energy and smart transportation. Many of these components are essential to incorporating clean energy which is a promising solution to the threatening problems due to fossil-fuel consumption such as pollution, carbon dioxide emission and health impact. On the other hand, the integration and penetration of highly variable clean energy into smart cities poses challenges to the power systems that require sophisticated sensing in order to maintain power stability. Sensing is a major framework of a smart city as it gathers vital data and statistics to ensure the smooth operation of the city. Most of the smart city applications are created with the building blocks of sensors through the Internet of Things. Magnetic, being one of the six major sensor energy forms, plays an important technical role in both smart city and clean energy. In this talk we will discuss how magnetic sensing can be implemented to enable smart city with clean energy. We will look at the latest development of applications of magnetic sensors in smart city and clean energy. An overview picture of the technology trend will be presented to illustrate the contribution of magnetic sensing to sustainability and smart future.

Brief Schedule for Conference

Day 1	**May 28, 2018 (Monday) 13:00~17:00** **Venue: Lobby of Regal Oriental Hotel** **30-38 Sa Po Road, Kowloon City, Hong Kong** Participants Onsite Registration & Conference Materials Collection
Day 2	**May 29, 2018 (Tuesday) 9:00~18:10** **Venue: Conference Room II** Arrival Registration, Keynote Speeches, and Conference Presentations
	Morning Conference
	Venue: Conference Room II **Opening Speech** 9:00~9:05 **Keynote Speech I** 9:05~9:50 (Prof. Solomon W. Leung from Idaho State University, USA Topic: "Metallomic Distribution in Vital Organs as Influenced by Dietary Intakes and the Implications") **Keynote Speech II** 9:50~10:35 (Prof. Ngai Weng Chan from ChanSchool of Humanities, Universiti Sains Malaysia, Malaysia Topic: "ENHANCING BIOMASS ENERGY PRODUCTION TOWARDS STABILISING CLIMATE: CASE STUDY OF MALAYSIA")
	Coffee Break & Photo Taking 10:35~10:55
	Keynote Speech III 10:55~11:40 (Prof. Hyo Choi from Gangneung-Wonju National University, South Korea Topic: Trapping of particulate matters emitted from a Korean coastal city associated with dusts transported from Nei-Mongo by cyclonic air flow and shrunken atmospheric layer) **Keynote Speech IV** 11:40~12:25 (Assoc. Prof. P. W. T. Pong from the University of Hong Kong, Hong Kong Topic: Trilateral Relation of Clean Energy–Smart City–Sensing: How Magnetic Sensors Can Be The Vanguard of Sustainability)
	Lunch 12:25~13:30 **Venue: Regal Oriental Hotel**
	Afternoon Conference
	Session 1: 13:30~15:30 **Venue: Conference Room II** 6 presentations-Topic: "Environmental Monitoring and Assessment" Session Chair: Prof. Solomon W. Leung
	Coffee Break 15:30~15:50

Session 2: 15:50~18:10 **Venue: Conference Room II** 7 presentations-Topic: "Environmental Analysis and Energy Technology" Session Chair: Prof. Ngai Weng Chan
Dinner:18:30 **Venue: Restaurant**

Tips: Please arrive at conference room 10 minutes before the session beginning to upload PPT into conference laptop.

Detailed Schedule for Conference

May 28, 2018 (Monday)
Venue: Lobby of Regal Oriental Hotel
30-38 Sa Po Road, Kowloon City, Hong Kong

13:00-17:00	**Arrival and Registration**

Note: (1) The registration can also be done at any time during the conference.

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

(3) One best oral presentation will be selected from each oral presentation session, and the Certificate for Best Oral Presentation will be awarded at the end of each session on May 29, 2018.

May 29, 2018 (Tuesday)
Venue: Conference Room II

9:00~9:05	**Welcoming Speech** Assoc. Prof. P. W. T. Pong The University of Hong Kong, Hong Kong
9:05~9:50	**Keynote Speech I** Prof. Solomon W. Leung Idaho State University, USA Topic: "Metallomic Distribution in Vital Organs as Influenced by Dietary Intakes and the Implications"
9:50~10:35	**Keynote Speech II** Prof. Ngai Weng Chan School of Humanities, Universiti Sains Malaysia, Malaysia Topic: "ENHANCING BIOMASS ENERGY PRODUCTION TOWARDS STABILISING CLIMATE: CASE STUDY OF MALAYSIA"
10:35~10:55	**Coffee Break & Photo Taking**
10:55~11:40	**Keynote Speech III** Prof. Hyo Choi Gangneung-Wonju National University, South Korea Topic: Trapping of particulate matters emitted from a Korean coastal city associated with dusts transported from Nei-Mongo by cyclonic air flow and shrunken atmospheric layer
11:40~12:25	**Keynote Speech IV** Assoc. Prof. P. W. T. Pong The University of Hong Kong, Hong Kong Topic: Trilateral Relation of Clean Energy–Smart City–Sensing: How Magnetic Sensors Can Be The Vanguard of Sustainability
12:25~13:30	**Lunch**
13:30~15:30	**Session 1** Session Chair: Prof. Solomon W. Leung Topic: "Environmental Monitoring and Assessment"
15:30~15:50	**Coffee Break**

15:50~18:10	**Session 2** Session Chair: Prof. Ngai Weng Chan Topic: "Environmental Analysis and Energy Technology"
18:30	**Dinner**

Let's move to the Sessions!

Session 1

Afternoon, May 29, 2018 (Tuesday)
Time: 13:30~15:30
Venue: Conference room II
Session 1: 6 presentations-Topic: "Environmental Monitoring and Assessment"
Session Chair: Prof. Solomon W. Leung

A0003 Presentation 1 (13:30~13:50)

A Study of Knowledge, Attitude, and Practice (KAP) of Personnel in Clinic regarding Infectious Waste Management Case study: Mueang Phuket District, Phuket

Husna Romin and Pensiri Akkajit

Prince of Songkla University, Phuket Campus, Thailand

Abstract- Clinical waste is increasing significant health hazards and environmental pollution concern due to its characteristics of the infectious waste. The personnel practice in infectious waste management is a necessary primary step requires for initiating effective management of clinical waste management. Therefore, this study is aimed to assess Knowledge, Attitudes, and Practices (KAP) in handling infectious waste among personnel in clinics located in Mueang Phuket District, Phuket, Thailand. A simple random sampling was used to identify 284 respondents from 142 clinics with a response rate of 85.2% by face-to-face interview with healthcare workers. The results showed that the majority of respondents were female (85.5%), aged between 20-29 years old (36.0%). Most of respondents were medical assistants/nurses/laboratory scientists (60.8%) with more than 5 years working experience (55.4%) and had the experience in handling infectious waste (72.3%) and participated training in infectious waste management (54.5%). The overall scores for knowledge, attitudes, and practices (KAP) of respondents in clinic regarding infectious waste management are in a high level (88.4%, 90.9%, and 92.2%, respectively). It is suggested that Phuket Municipality should has a well-planned collection and transfer process of infectious wastes in order to reduce the risk of environmental pollution, public health and healthcare workers.

Afternoon, May 29, 2018 (Tuesday)

Time: 13:30~15:30

V Venue: Conference room II

Session 1: 6 presentations-Topic: "Environmental Monitoring and Assessment"

Session Chair: Prof. Solomon W. Leung

A0001 Presentation 2 (13:50~14:10)

Study on soil and water erosion of Xiang Xi watershed based on 3S dynamic monitoring

Ying Jiang, DaXiang Xiang, Zhe Li, XiongFei Wen, XiChi Chen

Changjiang River Scientific Research Institute, Wuhan, China

Abstract- 3S technology is the effective method to carry out the dynamic monitoring of soil and water erosion. The paper select XiangXi watershed as the study region. Firstly, extracting erosion factors like vegetation coverage, land-use types and slop information, then conducting spatial overlay analysis to extract distribution of soil erosion intensity. Finally, analysing the change tendency by using transfer matrix to provide basic data for soil and water conservation. Results suggested that the intensity of soil erosion was getting better from 2016 to 2017, the Micro-degree and Slight-degree were slightly increased, the Medium-degree and Dought-degree were slightly reduced, the Extrem-degree and Vigorous-degree were alleviated.

Afternoon, May 29, 2018 (Tuesday)

Time: 13:30~15:30

Venue: Conference room II

Session 1: 6 presentations-Topic: "Environmental Monitoring and Assessment"

Session Chair: Prof. Solomon W. Leung

A0011 Presentation 3 (14:10~14:30)

Measurement of Eco-efficiency in Industrial Sectors of China based on Hybrid Super-efficiency DEA Model

Xinmin Wang and Hao Ding

School of Economic & Administration, China University of Petroleum, China

Abstract- Ecological problem in industrial sectors of China is the most severe issue of concern to attain a sustainable society. This study proposes the application of a hybrid super-efficiency DEA model and Malmquist index for measuring the eco-efficiency of 22 industrial sectors in China during the period of 2006-2015. Combining hybrid DEA with super-efficiency DEA, we separate the input variables into radial part (labor and industrial water) and non-radial part (capital and energy), gross value of industrial output is regarded as the desirable output, waste water, waste gas and industrial solid waste are treated as undesirable outputs. Results show that eco-efficiency has increased consistently over the last 10 years in 22 industrial sectors of China. For lack of momentum in sustained growth, technological progress on the improvement of eco-efficiency requires to be accelerated further. The undesirable output inefficient level has been improved more significant than input inefficiency in recent years.

Afternoon, May 29, 2018 (Tuesday)

Time: 13:30~15:30

Venue: Conference room II

Session 1: 6 presentations-Topic: "Environmental Monitoring and Assessment"

Session Chair: Prof. Solomon W. Leung

A0013 Presentation 4 (14:30~14:50)

Characteristics of VOCs of Industrial Complex in Incheon Area

JiYe Yoo, JiYoung Kim and ChanJin Park

Incheon National University, Republic of Korea

Abstract- The primary pollutants such as sulfur dioxide and carbon monoxide tend to be gradually improved due to promotion of fuel policy etc. However, secondary pollutants such as ozone and fine dust are getting worse. Hence, it is necessary to strengthen regulations on VOCs.

Incheon city has located large industrial complexes such as export industrial complex, Namdong industrial complex, Incheon mechanical industrial complex, Incheon district industrial complex, Incheon casting industrial complex. These industrial complexes are mainly composed of large-scale manufacturing industries and chemical industries such as machinery, equipment, assembly metal, automobile, and primary metal. However, these industrial complexes are mixed with residential areas in the city center, and it is also a source of odor generation that can cause complaints by odor inducing substances and VOCs.

In this study, in order to it's investigate the general characteristics of the Namdong industrial complex and the present status of the odor complaints, and we analyzed VOCs items by using the data of photochemical pollutant measurement network operated in the vicinity of industrial complex, and measured the concentration emitted from the odor control facility of the Namdong Industrial Complex and the odor emission control to analyze the current situation.

Afternoon, May 29, 2018 (Tuesday)

Time: 13:30~15:30

Venue: Conference room II

Session 1: 6 presentations-Topic: "Environmental Monitoring and Assessment"

Session Chair: Prof. Solomon W. Leung

A0014 Presentation 5 (14:50~15:10)

Recent status and policy of fine dust in the metropolitan area of Korea

JiYoung Kim, JiYe Yoo, Chan Jin Park

Incheon National University, Republic of Korea

Abstract- Recently concerns about fine dust pollution are increasing. There was only attention to yellow dust and the concept of fine dust was not clear in few years ago. The worry about fine dust has become serious enough to distinguish sprinkling with fine dust even the naked eye in the sky.

The concentration of fine dust in Korea is higher than the World Health Organization recommendation level. In 2015, the annual averaged concentration of PM2.5 in Seoul is 23.1μg/m3 and the daily averaged maximum value is 70 μg/m3, far exceeding the recommended standards of the World Health Organization.

We have target of 30% reduction of fine dust emission in 2022 when compared with the special measures for fine dust management in 2016 as a comprehensive dust management policy. There is a big difference between the power generation sector and the industrial sector in terms of domestic emission reduction policy measures. Plans for an eco-friendly cooperative system and network for the protection of sensitive groups are being proceeded.

We investigated the characteristics of comprehensive measures for fine dust management and measures to reduce fine dust in the metropolitan area. And we also suggested improvement plans for the particulate management in Korea.

Afternoon, May 29, 2018 (Tuesday)

Time: 13:30~15:30

Venue: Conference room II

Session 1: 6 presentations-Topic: "Environmental Monitoring and Assessment"

Session Chair: Prof. Solomon W. Leung

A1001 Presentation 6 (15:10~15:30)

Human Insecurity and Conflict: Effect of Coastal Communities' Vulnerabilityto Climate Change

Teresita G Montaño and Aurora C. Gonzales

Ateneo Research Center, Ateneo de Zamboanga University, Zamboanga City, Philippines

Abstract- The study illustrated how changes inclimate contribute to insecurity and conflict. High levels of environmental vulnerability, poor natural resource management, and limited livelihood options, increases the risks of insecurity and conflict. The data was gathered through: a) survey; b) focus group discussions and c)key Informant interview. The areasincluded in the study have shown environmental changes such as long periods of drought, high temperature, flooding, long duration of precipitation and unpredictable weather changes. Barangay officials need to strengthen the communitys' strategy in addressing the risks of climate change. Livelihood options and economic conditions are affected due to these climactic events. The respondents' livelihood is natural resource dependent, like fishing and farming. The loss of livelihood and the opportunity to find other employment is resulting from the low educational attainment and lack of alternative livelihood. This made the community susceptible to experiences of conflict and human insecurity. It can be concluded that the economic condition of the members of the community is affected due to the risks experienced from changes in the weather; these circumstance heightened the conflicts which may be considered as directly or indirectly due to the result of climate change.

Coffee Break Time	15:30-15:50

Session 2

Afternoon, May 29, 2018 (Tuesday)

Time: 15:50~18:10

Venue: Conference room II

Session 2: 7 presentations-Topic: "Environmental Analysis and Energy Technology"

Session Chair: Prof. Ngai Weng Chan

A0004 Presentation 1 (15:50~16:10)

A Study of Heavy Metal Accumulation in Sediments at Phuket bay, Saphan Hin, Phuket Province.

Kaimook Jaileak and Pensiri Akkajit

Prince of Songkla University, Phuket campus, Thailand

Abstract- The concentrations of heavy metals (Sn, Pb, and Zn) were investigated in two sediment cores at Phuket bay, Phuket, Thailand. The analysis of heavy metal content was carried out by using aqua regia digestion and measured by using inductively coupled plasma optical emission spectrometer (ICP-OES). The concentrations of Sn, Pb, and Zn were ranged from 49.9 to 167 mg kg-1, 9.6 to 58.7 mg kg-1 and 45.4 to 144 mg kg-1, respectively. The degree of pollution in sediments assessed by Geo-accumulation index (Igeo) indicated that the sediment samples in this study were either not contaminated or moderately contaminated with Zn and Pb (-1.40 to 0.26 and -1.24 to 0.97, respectively). In addition, the accumulation of heavy metals was evaluated using Enrichment Factor (EF) and the results showed that sediment samples are minimal to significant enrichment from anthropogenic activity (Pb and Zn: 1.6 to 6.2 and 2.1 to 6.9, respectively).

Afternoon, May 29, 2018 (Tuesday)

Time: 15:50~18:10

Venue: Conference room II

Session 2: 7 presentations-Topic: "Environmental Analysis and Energy Technology"

Session Chair: Prof. Ngai Weng Chan

A1004-a Presentation 2 (16:10~16:30)

Blood and Urine Lead levels of Adults attending Harare Polyclinics

P Manyuchi, CFB Nhachi and D Tagwireyi

Harare Institute of Technology, Zimbabwe.

Abstract- Lead is a toxic environmental pollutant and exposure to it can produce serious adverse health effects in adults and children. There is no safe exposure to lead, however the CDC recommends adult blood lead level (BLL) of $< 20\,\mu g/dl$ to be safe and $<5\ \mu g/dl$ for children. However evidence suggests subclinical toxicity at lower levels. In Harare, people are exposed to lead from exhaust fumes from leaded petrol, old leaching lead plumbing and flaking leaded paint. The main objective was to evaluate the level of lead exposure of ordinary residents in Harare. Three urban areas were chosen for their potential of increased risk of environmental exposure. One rural area was chosen to act as a control. Water lead levels were measured from the different study areas. The lead levels were measured using the inductively coupled plasma-atomic emission spectroscopy (ICP-AES). The mean blood lead levels for the urbanareas and rural clinic were $0.80\pm0.69\,\mu g/dl$ and $0.96\pm0.98\,\mu g/dl$ respectively. The urine lead levels for the urban areas and rural clinic were $0.57\pm0.67\ \mu g/dl$ and $0.51\pm0.13\,\mu g/dl$ respectively. The water lead levels from the different study areas were $1.1\,\mu g/dl$ for Mbare, $1.6\,\mu g/dl$ for Highfield, $0\,\mu g/dl$ for Goromonzi and $0.4\,\mu g/dl$, for Mabvuku/Tafara respectively. The mean serum protein levels were $24.45\pm3.76g/l$ for the study population. The Pearson correlation coefficient for the serum protein levels and blood lead levels was 0.225 at a p- 0.124. The ordinary residents in Harare urban have minimal lead exposure.

Afternoon, May 29, 2018 (Tuesday)

Time: 15:50~18:10

Venue: Conference room II

Session 2: 7 presentations-Topic: "Environmental Analysis and Energy Technology"

Session Chair: Prof. Ngai Weng Chan

E3001 Presentation 3 (16:30~16:50)

Driving Forces Analysis of CO2 Emissions from Transport Sector—A regional Analysis in China

Mingyuan Guo, Juan Meng

TIANJIN UNIVERSITY, CHINA

Abstract- Transport sector has experienced booming development and becomes the major part of China's CO2 emissions. The existing researches are mainly concerned with the whole CO2 emissions and the studies on transport sector are comparatively less and most lack econometric analysis. Based on the STIRPAT model, the paper takes economic level, transportation development and technology progress into consideration in order to identify how the factors impact the CO2 emissions in transport sector at the national and regional levels using the panel data from 1997 to 2013. The results show that deduction potential in CO2 emissions lies in the development of public transportation which refers to the bus development and taxi restrict specifically. Road infrastructure has positive impact on the CO2 emissions at national level, in western and central regions. Private passenger car and freight car play the increment role in CO2 emission at nation level and their influence varies across regions. Energy efficiency plays a crucial role in CO2 emissions at nation level and three regions respectively. These results not only contribute to advancing the existing literature, but also merit particular attention from policy makers in China.

Afternoon, May 29, 2018 (Tuesday)

Time: 15:50~18:10

Venue: Conference room II

Session 2: 7 presentations-Topic: "Environmental Analysis and Energy Technology"

Session Chair: Prof. Ngai Weng Chan

E0002 Presentation 4 (16:50~17:10)

Enhanced Biogas Production from Cassava Pulp by Co-Digestion with Distillery Stillage

C. Witchayapong, P. Tittabutr, and A. Boontawan

Suranaree University of Technology, Thailand

Abstract- The anaerobic co-digestion of cassava pulp (CP) and distillery stillage (DS) was studied. Effect of five different CP/DS ratios including 1:0, 1:0.5, 1:1, 0.5:1, and 0:1 based on volatile solids (VS) was investigated for biogas production. Batch anaerobic digesters were presented in term of mesophilic condition at 35 $\pm$1 ℃. Experimental results showed that the biogas and methane yield from co-digestion were higher than the mono-digestion of CP and DS. The optimal mixing ratio of CP/DS was obtained at 1:1. The cumulative biogas, the cumulative methane yield, and VS removal were 918.70 mL/g VS, 685.10 mL/g VS, and 80.20%, respectively. Compared with the mono-digestion of CP and DS, the increasing of methane yield was 222.19% and 105.70%, respectively. The co-digestion effectively showed the improvement for the methane production and energy output from bio-wastes.

Afternoon, May 29, 2018 (Tuesday)

Time: 15:50~18:10

Venue: Conference room II

Session 2: 7 presentations-Topic: "Environmental Analysis and Energy Technology"

Session Chair: Prof. Ngai Weng Chan

E0003 Presentation 5 (17:10~17:30)

Preparation of Zeolitic Imidazolate Framework-8 (ZIF-8) Membranes for Quality Upgrading of Bio-gas

W. Laiphadittagron, S. Amnuaypanich, A. Boontawan

Suranaree University of Technology, Thailand

Abstract- Zeolitic imidazolate frameworks (ZIFs), one of metal organic frameworks (MOFs), are highly porous material, known for their remarkable thermal and chemical stability. ZIF-8 membranes were prepared by crystallization of ZIF-8 particles on porous α-alumina disks surface by seeding method. Secondary coatings of ZIFs were used to minimize defects in the membranes. The synthesized of ZIF-8 membranes with thin selective layer showed significant improvement in CO_2 permeability and CO_2/CH_4 selectivity in mixed gas permeation tests. In this study, ZIF-8 membranes were synthesized using different seeding times, i.e., 2, 4 and 6 hours.. The permeation and selectivity tests of ZIF-8 membrane were measured for CO_2 and CH_4 at different pressure at the feed side (500-800 kPa). The ZIF-8 membrane separation has been achieved for selectivities of CO_2 from mixed gases. At ambient temperature, the CO_2 permeance reached $7.13 \times 10{-}7$ cm3 (STP) ·cm·cm-2 s-1 cmHg-1, and the selectivitys of CO_2 / CH_4 was 8.57 ± 1.41, respectively.

Afternoon, May 29, 2018 (Tuesday)

Time: 15:50~18:10

Venue: Conference room II

Session 2: 7 presentations-Topic: "Environmental Analysis and Energy Technology"

Session Chair: Prof. Ngai Weng Chan

E1001-a Presentation 6 (17:30~17:50)

Intramolecular Singlet Fission in Covalently Linked Tetracene Oligomers

Heyuan Liu, Xuemin Wang, Xiyou Li

China University of Petroleum, China

Abstract- Singlet fission (SF) can split a singlet exciton into a pair of triplets, which can overcome the Shockley-Queisser limit on the theoretical efficiency of single-junction solar cells. To apply SF into organic solar cells, it is essential to develop new organic molecules with highly efficient intramolecular SF (iSF). Here, we synthesized a series of covalently linked tetracene oligomers and studied iSF in them with femtosecond and nanosecond transient absorption spectroscopy. The iSF rate and yield was significantly enhanced from dimer to tetramer. This promotion can be attributed to the enhanced delocalization of singlet excitons as the tetracene unit increased. The triplet quantum yield of the tetramer in solution can reach to 128% via iSF, which is the highest record up to now in solution for tetramer derivatives.

Afternoon, May 29, 2018 (Tuesday)

Time: 15:50~18:10

Venue: Conference room II

Session 2: 7 presentations-Topic: "Environmental Analysis and Energy Technology"

Session Chair: Prof. Ngai Weng Chan

A3001 Presentation 7 (17:50~18:10)

Summer Comfort Temperature in the Public Historic Buildings in the Old City of Tartous in Syria

Maya Hassan, Hui Xie, Mirna Hassan

Chongqing University, China

Abstract- Adaptive comfort survey data are not available for Syria. This paper is a thermal comfort study of the heritage buildings in the old city of Tartous in Syria. The selected historic structures were reused for public functions. Two of the survey locations are used as workplaces, the third is a multifunctional gallery, and the last is a print shop. The building elements, materials, and drawings were documented and described. Field measurements in the four public locations were continuously collected for seven days in August 2016 in conjunction with a subjective thermal survey in the office buildings. The sample size of the office questionnaires was 70 subjects, which is 80% of the total number of employees in both selected office buildings. The indoor climates of the surveyed buildings and the employees' satisfaction have been described and analyzed. Thermal comfort indices, a comfort band, and a predicted neutral temperature were determined and compared with the international standards. The primary objective of this thermal research was to evaluate whether the environments in the historic buildings are comfortable for the occupants. The results could be useful for further studies and could be used as a dataset for establishing a local thermal comfort standard.

18:30	Dinner

List of Listeners

Name	Affiliation
Xiaolian Zhang	Nanjing Institute of Technology, China
Niclas Söderberg	Stockholm, Sweden
Li Chenyang	Jilin University, China
Zhang Fengjun	Jilin University, China
Zhong Shuang	Jilin University, China

One Day Tour

May 30, 2018
10:00---20:00

10:00: Gather in the lobby of hotel

10:30—20:00 City sighting in Hong Kong

Detailed attractive sightseeing as follows:

	Victoria Harbour is a natural landform harbour situated between Hong Kong Island and Kowloon in Hong Kong. Lying in the middle of the territory's dense urban region, the harbour is the site of annual fireworks displays and its promenades are used as gathering places for tourists and residents.
	Golden Bauhinia Square was named after the giant statue of a golden Bauhinia blakeana at the centre of the area, situated outside the Hong Kong Convention and Exhibition Centre, where the ceremonies for the handover of Hong Kong and the establishment of the Hong Kong Special Administrative Region were held in July 1997.
	Wong Tai Sin Temple is a well known shrine and major tourist attraction in Hong Kong. It is dedicated to Wong Tai Sin, or the Great Immortal Wong.
	Victoria Peak is a mountain in the western half of Hong Kong Island. It is also known as Mount Austin, and locally as The Peak
	Madame Tussauds Hong Kong, part of the renowned chain of wax museums founded by Marie Tussaud of France, is located at the Peak Tower on Hong Kong Island in Hong Kong. It is the first Madame Tussauds museums in Asia.
	Canton Road is a major road in Hong Kong, linking the former west reclamation shore in Tsim Sha Tsui, Jordan, Yau Ma Tei and Mong Kok on the Kowloon Peninsula

Lunch and dinner are included

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Conference Venue

Regal Oriental Hotel

Address: 30-38 Sa Po Road, Kowloon City, Hong Kong
Website: https://www.regalhotel.com/regal-oriental-hotel/en/home/home.html

Regal Oriental Hotel is the only full-service hotel located in the heart of Hong Kong's heritage district Kowloon City, famous for authentic Hong Kong-style cuisine, and neighbouring the world-class Kai Tak Cruise Terminal. The hotel is easily accessible to all major transport links, shopping arcades, restaurants and tourist attractions, including Kowloon City Plaza, Festival Walk, MegaBox and the Ladies' Market in Mong Kok, and is within walking distance of the historic Kowloon Walled City Park.

Contact method:
Sales Manager: Soki Lee
Email: roh.corp01@regalhotel.com
Tel: (852) 2718 0333
Fox: (852) 2383 0234

Note

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Feedback Information

(Please fill this form and return it to conference specialist during the conference days.)

Personal Information

Conference Name and Paper ID	
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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					
Are You A Member of HKCBEES	Yes☐No☐ (If "No", you may apply membership from http://www.cbees.org/list-34-1.html)				
Do You Willing to Receive HKCBEES Future Conferences Information Via E-mail	Yes☐No☐				
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	
Any Other Suggestions/Comments	

Thank you for taking time to participate in this conference evaluation. Your comments will enable us to execute future conferences better and tailor them to your needs!