

# 2016 APCBEES AMSTERDAM CONFERENCE ABSTRACT

**March 23-25, 2016**

**Mercure Hotel Amsterdam City**

**Amsterdam, Netherlands**



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**International Journal of Structural and Civil Engineering Research (IJSCER, ISSN:2319-6009)**, and all the papers published in IJSCER will be included in New Jour (Electronic Journals & Newsletters), Open J-Gate, Index Copernicus International, Indian Science, Research BIB Japan.

❄ Conference website and email: <http://www.iccue.org/>; [iccue@cbees.net](mailto:iccue@cbees.net).

### 2016 3rd International Conference on Chemical and Biological Sciences (ICCBS 2016)

❄ Paper publishing and index: **ICCBS 2016** papers will be published in Conference Proceedings, the following journals or both Conference Proceedings and journals:

**Conference Proceedings**, accepted papers will be published into the volume of MATEC Web of Conferences (ISSN: 2261-236X), which is indexed by Ei Compendex, Inspec, DOAJ, CPCI (Web of Science) and Scopus.



**International Journal of Chemical Engineering and Applications (IJCEA, ISSN: 2010-0221)**, and all papers published in IJCEA will be included in the Engineering & Technology Digital Library, and indexed by WorldCat, Google Scholar, Cross ref, ProQuest, CABI.



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



**International Journal of Pharma Medicine and Biological Sciences (IJPMBBS, ISSN: 2278-5221)** and all papers will be included in the Engineering & Technology Digital Library, and indexed by WorldCat, Google Scholar, Cross ref, ProQuest, CABI.

**Publication in both Conference Proceedings and Journals.**

❄ Conference website and email: <http://www.iccbs.org/>; [iccbs@cbees.net](mailto:iccbs@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 **12** Minutes of Presentation and **3** Minutes of Question and Answer

Keynote Speech: about **40** Minutes of Presentation and **10** 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 March 24, 2016.

## Dress code

Please wear formal clothes or national representative of clothing.

# Keynote Speaker Introductions

## Keynote Speaker I



Prof. Maciej Baginski

Faculty of Chemistry, Gdansk University of Technology (GUT), Poland

**Prof. Maciej Baginski** is Associated Professor at the Faculty of Chemistry, Gdansk University of Technology (GUT), Poland. He is a head of Molecular Chemotherapy Group at the Department of Pharmaceutical Technology and Biochemistry. He received his Ph.D. in chemistry from Gdansk University of Technology in 1995 (Prof. E.Borowski's group). He received his D.Sc. in 2007 in biophysics from Polish Academy of Science, Warsaw. He held postgraduate training in theoretical chemistry at Warsaw University, Poland in 1989 and in medicinal chemistry at Ancona University and Camerino University, Italy in years 1991/1993. He held his postdoctoral training as a Fulbright fellow at University of California in San Diego, USA in 1995/1996 (Prof. J.A. McCammon's group). Prof. Baginski received the International Europe Award for the studies on amphotericin B membrane channels from the Rottendorf Foundation, Germany in 2003. His scientific collaborations covered groups from USA, France and Italy. His research is mainly focused on molecular mechanism of action of antifungal polyene macrolide antibiotics. Additionally, his new interests cover studies of DNA-ligand interactions, especially with regard to telomeric systems. In his scientific activity he uses different computational chemistry and state-of the art molecular modeling methods including thermodynamics to study drug-target interactions. His record of scientific work includes more than 35 publications and over 50 conferences communicate. He is also a head of Inter PhD Programme at the GUT. His international activity includes participation on regular bases in grant evaluation in EC as well as participation in SRG IMI (States Representative Group, Innovative Medicine Initiative) activity.

Topic: “Modern Trends in Drug Design”

Abstract: Development of new drugs is currently based rather on rational design than discovery. However, discovery of new active compounds still can be the first step in the drug development. Within last two decades, the pharmaceutical industry and academia have significantly improved process of drug development but nevertheless far more can be and should be done in this field. There has been a recent decline in the creativity and productivity of the pharmaceutical industry, taking into account number of registered new drugs. This is due to many new challenges and obstacles that have appeared on the way to the final drug development. One has keep in mind that drug design is a multidisciplinary complex process which can take on average 10-12 years and can cost over 1\$ billion. Success rate in drug development and finally registration by US Food and Drug Administration (FDA) decreased mainly due to withdrawal of many potential active compounds from studies (clinical trials) as a result of side effects caused by these molecules or lack of its efficacy in in vivo clinical studies. Moreover, in many cases already available drugs lose their application due to development of resistance what limits the pool of our chemotherapeutics. Up to now, conventional approaches have yielded many FDA-approved drugs, but new methodological approaches are needed and have been currently developing to overcome emerging problems. Researchers continue investigating and designing better approaches to increase the success rate in the discovery/design process. Among these approaches are different so called in silico methods which are more and more sophisticated and in many cases based on so called big data. These approaches may help to speed up and make more efficient the whole process of drug design. Current presentation will show how these modern methods are involved in drug design process from the stage of target identification and its validation, through hit identification, hit-to-lead transfer up to lead optimization. It will be also presented how the toxicology and potential drug resistance should be fully integrated into the early stages of drug design process. Some case literature studies as well as from my own projects will be presented.

## Keynote Speaker II



Prof. Ioana Demetrescu  
University Politehnica Bucharest, Romania

**Prof. Dr. Ioana Demetrescu** obtained her Bachelors degree and Ph.D. from University of Bucharest in Physical Chemistry field. She spent more than 40 years in teaching and research activities in this domain. Her teaching activities are focussed in the field of General Chemistry, and Physical Chemistry of Materials . Since 2005, Prof. Demetrescu is also associated with the Masters program in the Department of Biotechnology and Bioengineering. The research program focuses, apart from other issues, on the tissue engineering, scaffolds characterization, new implants for medical applications.

Her professional and scientific activity comprises: handbooks/textbooks (15); papers published (165); 92 of them in ISI journals ;inventions (4); participating in different international or national research projects (111) ; awards at international halls for inventions (1 ) Chair pairson, member of the scientific committee and invited speaker at different meetings universities and ( USA, Mexic, Poland Greece, France, Tunis, Brazil etc; member of the International Editorial Board journal of Nanobiomedicine (Japan ); reviewer for different journals (Materials Chemistry and Physics, J. of Biomedical Materials Research, Surface and Interface Analysis, Journal of Non-Crystalline Solids, Electrochimica Acta, etc).

Topic: “Aspects of Life Sciences & Engineering Integration in Investigation of Bionic Coatings of Implant Materials”

Abstract: The general objective of this lecture is to present elaboration and characterization of new bionic coatings with modified hydroxyapatite( component of bone ) on metallic implant materials. The coatings were elaborated on the most used nowadays implant materials as CoCr alloys, titanium alloys and stainless steel. The modifications were performed by adding various ions (fluoride ), nanoparticles (Ag,Cu), nanotubes (carbon nanotubes) or other components as natural polymers (chitosan) . Selection of the component for addition was done taking into account the type of potential medical future application. The methodology for testing involved a large number of procedures for surface characterization, electrochemical methods in fabrication and electrochemical stability evaluation, and in vitro cell response. The impact of the amount and morphology of modification components of hydroxyapatite( including bio-based polymeric materials) was put in evidence and merits and demerits of bioinspired coatings was discussed.

### Keynote Speaker III



Prof. Ignacio Javier Acosta García

Department of Building Construction, School of Architecture, University of Seville, Spain

**Research field:** daylighting in architecture, energy efficiency in buildings, thermal comfort and electric lighting control.

**Education:**

06.2004: BS Architect Degree in Architecture

06.2007: MS Master Degree in Master in City and Sustainable Architecture

06.2012: PhD from the University of Seville. Awards: Extraordinary Ph.D. Award from the University of Seville.

**Research Experience:**

Acosta, J. Navarro, J.J. Sendra, (2011) Towards an Analysis of Daylighting Simulation Software, *Energies* 4, 1010-1024.

I. Acosta, J. Navarro, J.J. Sendra, P. Esquivias, (2012) Daylighting design with lightscoop skylights: Towards an optimization of proportion and spacing under overcast sky conditions, *Energy and Buildings* 49, 394-401.

I. Acosta, J. Navarro, J.J. Sendra, (2013) Predictive method of the sky component in a courtyard under overcast sky conditions, *Solar Energy* 89, 89-99.

I. Acosta, J. Navarro, J.J. Sendra, (2013) Daylighting design with lightscoop skylights: Towards an optimization of shape under overcast sky conditions, *Energy and Buildings* 60, 232-238.

I. Acosta, J. Navarro, J.J. Sendra, (2013) Towards an analysis of the performance of lightwell skylights under overcast sky conditions, *Energy and Buildings*. 64, 10-16.

**Project:** TECNOCAL-ACCIONA: Efficient and intelligent technologies designed to health and comfort indoors.

**Project:** CELL. Energy and environmental rehabilitation of social housing in Andalusia: evaluation test cells.

Topic: “Daylight Spectrum Index: Development of a New Metric to Determine the Color Rendering of Light Sources”

Abstract: Nowadays, there are many metrics to determine the color rendering provided by a light source. The Color Rendering Index is the most widely metric used to determine the accuracy of light sources in defining the colors. Recently, the Color Quality Scale was defined, extending the samples selected by the Color Rendering Index and achieving a better description of the performance of light sources in colorimetry. However, both metrics are based on the reference of the Standard Illuminant A, this is to say, in the performance of an incandescent lamp, which not represents the real conditions of the natural color rendering. Therefore, a new metric is proposed, based in the Spectral Power Distribution of daylighting with a correlated color temperature of 6500 K. The daylight spectrum is corrected by the photopic luminosity function, as well as the spectrum of the light source sample. Both corrected spectrums are compared in order to determine the Daylight Spectrum Index. This new metric represents a better perception of the blue hues, from 380 to 500 nm, than the previous metrics, as can be deduced from several surveys. Moreover, the reference of this new metric is the daylight spectrum of a clear sky, a proper base to define the color rendering.

## Brief Schedule for Conferences

<b>Day 1</b>	<b>March 23, 2016 (Wednesday) 10:00~17:00</b> <b>Venue: Hotel Lobby</b> Arrival Registration	
<b>Day 2</b>	<b>March 24, 2016 (Thursday) 9:00~19:15</b> <b>Venue: Breakout Gallery</b> Arrival Registration, Keynote Speeches, and Conference Presentations	
	<b>Morning Conferences</b>	
	<b>Venue: Breakout Gallery</b> Opening Remarks 9:00~9:10 Keynote Speech I 9:10~10:00 Coffee Break & Photo Taking 10:00~10:20 Keynote Speech II 10:20~11:10 Plenary Speech III 11:10~12:00	
	<b>Lunch 12:00~13:00</b> <b>Venue: Hotel Restaurant</b>	
	<b>Afternoon Conferences</b>	
	13:00~15:45	
	<b>Session 1: 13:00~15:45</b> <b>Venue: Breakout Gallery</b> 11 presentations-Topic: “Food Science”	<b>Session 2: 13:00~15:45</b> <b>Venue: Meeting Room 3</b> 11 presentations-Topic: “Civil & Urban Engineering”
	<b>Coffee Break 15:45~16:00</b>	
	<b>Session 3: 16:00~19:15</b> <b>Venue: Breakout Gallery</b> 13 presentations-Topic: “Bioscience & Chemistry”	<b>Session 4: 16:00~19:00</b> <b>Venue: Meeting Room 3</b> 12 presentations-Topic: “Civil & Urban Engineering”
	<b>Poster Session: 9:00~19:15</b> <b>Venue: Breakout Gallery</b>	
	<b>Dinner: 19:30</b> <b>Venue: Hotel Restaurant</b>	
<b>Day 3</b>	<b>March 25, 2016 (Friday) 9:00-17:00</b> <b>One-Day Tour</b>	

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



# Detailed Schedule for Conferences

**March 23, 2016 (Wednesday)**

**Venue: Hotel Lobby**

<b>10:00-17:00</b>	<b>Arrival and Registration</b>
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**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 March 24, 2016.

**Morning, March 24, 2016 (Thursday)**

**Venue: Breakout Gallery**

<b>9:00~9:10</b>		<b>Opening Remarks</b> Prof. Ioana Demetrescu University Politehnica Bucharest, Romania
<b>9:10~10:00</b>		<b>Keynote Speech I</b> Prof. Maciej Baginski Faculty of Chemistry, Gdansk University of Technology (GUT), Poland Topic: "Modern Trends in Drug Design"
<b>10:00~10:20</b>		<b>Coffee Break &amp; Photo Taking</b>
<b>10:20~11:10</b>		<b>Keynote Speech II</b> Prof. Ioana Demetrescu University Politehnica Bucharest, Romania Topic: "Aspects of Life Sciences & Engineering Integration in Investigation of Bionic Coatings of Implant Materials"
<b>11:10~12:00</b>		<b>Keynote Speaker III</b> Prof. Ignacio Javier Acosta Garc ía Department of Building Construction, School of Architecture, University of Seville, Spain Topic: "Daylight Spectrum Index: Development of a New Metric to Determine the Color Rendering of Light Sources"

<b>Lunch</b>	
<b>12:00~13:00</b>	<b>Hotel Restaurant</b>

## Let's move to the Sessions!

# Session 1

**Tips:** The schedule for each presentation is for reference only. In case of missing your presentation, we strongly suggest that you attend the whole session.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Breakout Gallery**

**Session 1: 11 presentations-Topic: “Food Science”**

**Session Chair:**

**F0001 Presentation 1 (13:00~13:15)**

Political will, Policy Implementation, and Food Security in Uganda

**Doreen Chemutai**

Gulu University, Uganda

*Abstract*—Despite Uganda's plentiful of food production, the awareness that food security affects national development and the existence of government's food policy, food access remains a big challenge to many households. What explains persistent food insecurity in a food sanctuary in East Africa? While drought and other natural hazards may trigger famine, resulting into food insecurity in a nation, this paper argues that government's action and/or inaction determines people's access to food. If governments can influence the state of food security through policy processes, then why persistent food insecurity in a food-producing economy? The paper concludes that food access is greatly influenced by people's capabilities and that no matter how good the Food and Nutrition policy is, political will is a crucial determinant of whether or not implementation will be adequate. This paper generated answers to these puzzles through an analytical framework.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Breakout Gallery**

**Session 1: 11 presentations-Topic: “Food Science”**

**Session Chair:**

**F0011 Presentation 2 (13:15~13:30)**

Physical and Sensory Properties of a Rice-Snack Extruded with Fresh Herbs and Tomato Powder

**Şenol İbanoğlu**, Emir Ayşe Özer, and Esra İbanoğlu

Gaziantep University Food Engineering Faculty, Turkey

*Abstract*—The effect of screw speed (200-310 rpm) and feed rate (15.0-25.0 kg/h) on the firmness, expansion ratio, colour and sensory properties of a rice-based extruded snack was investigated. Regression equations describing the effect of each variable on the responses were obtained. Results indicated that feed rate and screw speed both had an effect on the firmness of the product at 95 % CI. The interaction between the two factors was also found to be significant at 95 % CI. The effect of screw speed was significant whereas the quadratic effect of feed rate was found significant on the lateral expansion (95 % CI). Lateral expansion increases as screw speed increases. The results indicated that changes in the extrusion variables did not affect the flavour and overall acceptability of the final product at 95 % CI for the feed rate and screw speed ranges studied in this work.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Breakout Gallery**

**Session 1: 11 presentations-Topic: “Food Science”**

**Session Chair:**

**F0017 Presentation 3 (13:30~13:45)**

Interrelationship between Food Security, Climate Change and Gendered Violence: a Dynamic Hypothesis

**Brian J. Biroscak**, Pooja Agrawal, James F. Oehmke, Christal M. Esposito, Anwar Naseem, and Lori A. Post

Yale University, United States of America

*Abstract*—Background In September 2015, United Nations Member States adopted 17 Sustainable Development Goals (SDGs), including *Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture*. It is understood that women play a vital role in advancing food security and nutrition. Less understood is the evidence for an interrelationship between food security, climate change (shocks, stressors), and gender-based violence (GBV). We systematically coded qualitative text data to generate causal maps for modeling the interrelationship between these phenomena.

Methods Medical librarians assisted with keyword searches of 10 scholarly databases (n=222 records). Two reviewers independently screened titles and abstracts for relevance (record addressed food security, climate change, and GBV (n=20)). Full-record review, supplemented by hand-searching reference lists and authors’ files, resulted in 20 final records. Open- and axial coding were used to identify variables and their causal relationships; and system dynamics modeling was used to generalize structural representations.

Results The composite causal maps represent researcher and practitioners’ collective mental model of the system structure-behavior relationship (i.e., *dynamic hypothesis*) between food security, climate change, and GBV. Food security is modeled as a function of vulnerability, resilience, and shocks (e.g., floods) or stressors (e.g., drought). For example, in the aftermath of flooding, household food security erodes. Females may be coerced to undertake risky activities (e.g., trading sex for relief) that rebuild food security but have negative future consequences (e.g., HIV/AIDS, reduced household productivity) that feed back to further erode food security and nutrition.

Conclusions Resilience as a concept provides a unique perspective on how to plan for and analyze the effects of climate shocks and stressors that threaten the well-being of vulnerable

populations. Our composite causal maps can be used as learning tools to inform decision making with respect to gender dimensions of food security within the context of climate change.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Breakout Gallery**

**Session 1: 11 presentations-Topic: “Food Science”**

**Session Chair:**

**F0022 Presentation 4 (13:45~14:00)**

Perceptions of Thai, Lao and Cambodian Consumers toward Country of Origin of Food Products on ASEAN Consumers' Decisions

**Kanokkan Vichasilp**, Chudchai Rattanaphunt, and Chaluntorn Vichasilp

Rajamangala University of Technology Isan, Thailand

*Abstract*—This study aimed to investigate the attitude and perceptions of Thai, Lao and Cambodian consumers toward country of origin (COO) of food products from Thailand, Malaysia, Vietnam and Indonesia which affect Thai, Lao and Cambodian consumers' decisions when purchasing these products by reviewing some related studies and conducting a survey questionnaire with 1,200 consumers in Thailand, Laos and Cambodia. There were 400 consumers from each country responded to the survey questionnaire. The results from this study revealed that 1) the consumers' perceptions toward the COO of food and beverages including vegetables, fruits, tea, coffee, and frozen seafood were different (the statistical significance was at  $P < 0.05$ ), 2) the correlation between the COO and the willingness to buy among the consumers in the 3 countries was at the low level except for consumers from Laos that the relationship between the COO and the willingness to buy food and beverages from Thailand and Indonesia was at .538 and .516. The results from this study showed that Thai food traders can use the COO for considering about production bases. If the COO is positive, the name of the countries should be emphasized on the labels. But if the country image is negative, the brand logo should be considered.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Breakout Gallery**

**Session 1: 11 presentations-Topic: “Food Science”**

**Session Chair:**

**F0023 Presentation 5 (14:00~14:15)**

Potential of Diffuse Reflectance Infrared Fourier Transform Spectroscopy and Chemometrics for Coffee Quality Evaluation

Verônica Belchior, **Adriana S. Franca**, and Leandro S. Oliveira

Universidade Federal de Minas Gerais, Brazil

*Abstract*—Given the successful application of spectroscopic methods in the field of coffee analysis as fast and reliable routine techniques, the objective of this work was to evaluate the feasibility of employing Diffuse Reflectance Infrared Fourier Transform Spectroscopy (DRIFTS) for discrimination between roasted coffees that presented distinct sensory characteristics and were submitted to a range of roasting conditions. Samples consisted of coffees obtained from Nespresso® type capsules of intensity levels ranging from 2 to 12. Principal Component Analysis (PCA) of the processed spectra provided separation of the samples into three groups: low (positive PC1), medium (scattered) and high (negative PC1) intensity. Group separation was related to both roasting intensity and sensory parameters, with a clear separation between samples described as low roasted with fruity and floral flavors in comparison to samples described as being intense and very roasted. PLS-DA models were constructed and provided satisfactory discrimination according to sensory characteristics. Samples were classified according to flavor as sugar browning, enzymatic, or dry distillation. Such results confirm the potential of DRIFTS in the discrimination and classification of roasted and ground coffees.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Breakout Gallery**

**Session 1: 11 presentations-Topic: “Food Science”**

**Session Chair:**

**F0026 Presentation 6 (14:15~14:30)**

Bringing Hope and Saving Lives: Joint WFP-UNAMID Humanitarian Logistics Project in Darfur

**Zurab Elzarov**

United Nations – African Union Mission in Darfur (UNAMID), Sudan

*Abstract*—The paper describes the successful implementation of an innovative joint humanitarian logistics project carried out by the World Food Programme (WFP) and the United Nations-African Union Mission in Darfur (UNAMID) to provide assistance and reach out to people affected with armed violence, displacement and chronic under-nourishment in the Darfur region of Sudan.



**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Breakout Gallery**

**Session 1: 11 presentations-Topic: “Food Science”**

**Session Chair:**

**F0027 Presentation 7 (14:30~14:45)**

Kinetics and Nondestructive Measurement of Total Volatile Basic Nitrogen and Thiobarbituric Acid-Reactive Substances in Chilled Tabtim Fish Fillets using Near Infrared Spectroscopy (NIRS)

**Sutee Wangtueai**, Chaluntorn Vichasilp, Tanachai Pankasemsuk, Parichart Theanjumpol, and Yuthana Phimolsiripol

Faculty of Agro-Industry, Chiang Mai University, Thailand

*Abstract*—Tabtim fish (*Oreochromis sp.*) fillets were prepared with a size 100-150 g/piece, individual packed into zip lock polyethylene bag and kept at 0, 5, and 10°C up to 18 days. Total volatile basic nitrogen (TVB-N) and thiobarbituric acid-reactive substances (TBARS) were determined. The TVB-N and TBARS changes during storage were found to be adequately described by first-order reaction kinetics. The NIR spectra of TVB-N and TBARS in fish fillets (180 samples) were collected in the reflectance mode using NIRSystems 6500 at 25°C. Results showed that the TVB-N and TBARS were 9.40-99.7 mg/100 g and 0.13-2.06 mg malondialdehyde/kg, respectively. The spectra were in range of short-wavelength region (700-1000 nm) and long-wavelength region (1000-2500 nm). Consequently, the partial regression model with cross validation was created and the optimized model was done with full NIR spectra, short wavelength and long wavelength. It was found that the acceptable model of TVB-N was obtained with 750-1000 nm with determination coefficient of calibration ( $R^2_{cal}$ ) = 0.78. A model of TBARS showed good data with short wavelength (750-1000 nm). Considering the obtained results, it is suggested that the TVB-N model could be used as a screening step to determine the TVB-N of Tabtim fish fillets.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Breakout Gallery**

**Session 1: 11 presentations-Topic: “Food Science”**

**Session Chair:**

**F0028 Presentation 8 (14:45~15:00)**

Fabrication and Characterization of Electrospun Nanofiber Films of PHA/PBAT Biopolymer Blend Containing Chilli Herbal Extracts (Capsicum Frutescens or Capsaicin)

**Nuttapol Tanadchangsang**, Darunee Khanpimai, Stayu Kitmongkonpaisan, Wimol Chobchuenchom, and Thongchai Koobkokkrud

Industrial Biomaterials Research Center, College of Oriental Medicine, Rangsit University, Thailand

*Abstract*—Biopolymer nanofiber film is a form of transdermal drug delivery system, which was developed from gels or creams. Films, which are flexible, can be attached to the skin body and controlled for drug release application. The synthesis of biopolymer nanofiber as a matrix for drug control release of drug and herbal extracts has been extensively attracted from many researchers until present time. In this research, we focused on the nanofiber production from 2 types of biopolymers: polyhydroxyalkanoate (PHA) and poly(butylene adipate-co-terephthalate) (PBAT) containing chilli herbal extract or capsaicum extract. This study aims to figure out the suitable proportion of the mixture of biopolymer and capsaicin and to perform the characterization. The nanofiber forming was performed by melting PHA/PBAT and capsaicum extracts in dichloromethane. The weight ratio of PHA:PBAT was fixed at 60:40 (the best property of cast film ratio) and the concentration of the PHA/PBAT solutions were 5, 7.5 and 10%, respectively, and applying the electrospinning for 4 hr. The suitable concentration condition of polymer solution was at 10%, then mixing with concentration of capsaicum extracts at 1, 2, 5, 10 and 20% respectively. The solutions measured by viscometer machine confirmed that the viscosity of polymer solutions blended with capsaicin affects to the nanofiber synthesis by electrospinning technique. Then, the material properties of the nanofiber films were characterized by tensile tester. It was found that the stiffness and the elongation at break of the nanofiber films are in the acceptable range of the standard. The morphology and diameter of PHA/PBAT nanofibers were characterized by scanning electron microscopy (SEM). Within 1000x microscale, the amount of fiber ranges about 155-680 lines and the diameter was between 240-4,820 nm, as most of the fibers fell in lower than 1 micrometer resulting in a confirm nano-scale fiber synthesis. With FTIR

measurement, it was found that nanofiber film samples containing capsicum extract in various numbers have a similar peak graph showing frequency ranging  $1,340-1,020\text{ cm}^{-1}$ . Therefore it can be concluded that fibers at the nanofiber and capsaicin substance molecules should be included in the biopolymer nanofiber.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Breakout Gallery**

**Session 1: 11 presentations-Topic: “Food Science”**

**Session Chair:**

**F1005 Presentation 9 (15:00~15:15)**

Meat Species Discrimination using NMR-Based Metabolomic for Halal Authentication

**Nurjuliana Mokhtar**, Azizah Abdul Hamid, Dzulkifly Mat Hashim, Shuhaimi Mustafa, and Amin Ismail

Universiti Putra Malaysia

*Abstract*—The awareness of Halal products is now gaining global recognition due to its acceptance by not only the Muslims' consumer but also non Muslims' consumer. Therefore, in ensuring the safety of food and to protect the consumer from fraud and adulteration, it is important to carry out some rapid and reliable analytical methods for food authentication especially for halal authentication and species identification of food products. Hence, with sensitive, non destructive and reliable results, Proton Nuclear Magnetic Resonance (NMR) is shown to be a potent tool for meat species discrimination of four types of commonly consumed meats in Malaysia namely, mutton, beef, chicken and pork. This study reports the combination of proton NMR metabolite profile and pattern recognition method in discriminating the meats and classified them into groups. These grouping models allowed for identification of molecular markers for the detection of adulterant indicator of meat and meat based products for Halal authentication.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Breakout Gallery**

**Session 1: 11 presentations-Topic: “Food Science”**

**Session Chair:**

**F2001 Presentation 10 (15:15~15:30)**

Sensory Evaluation of Beetroot Candy Applying Fuzzy Logic

**Sana A. Fatma**, Nitya B. Sharma, Surendra. P. C. Singh, Alok D. Jha, and Arvind E. Kumar

Banaras Hindu University

*Abstract*—Beetroot (*Beta vulgaris*) has long been recognized for its medicinal properties. In all over the world beetroot is easily available at low price still its processing into different value added products has almost been found negligible. In this study, efforts were made to develop a nutritious, salubrious and tasty beetroot candy, using ingredients like sugar, pectin and citric acid in different proportions. Initially, eight candy samples (S1, S2, S3, S4, S5, S6, S7 and S8) with different ratios of sugar, pectin and citric acid, respectively (60:2:0.25; 60:2:0.50; 60:3:0.25; 60:3:0.50; 65:2:0.25; 65:2:0.50; 65:3:0.25; 65:3:0.50), were screened by preliminary sensory analysis. Then out of these eight samples quality ranking was done using fuzzy logic model on the basis of its sensorial characteristics. Thus, the study concluded by allotting a quality rank based on the value of judgement membership function ( $X_f$ ) of each beetroot candy sample:  $S8 > S7 > S6 > S2 > S5 > S1 > S3 > S4$ .

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Breakout Gallery**

**Session 1: 11 presentations-Topic: “Food Science”**

**Session Chair:**

**F3001 Presentation 11 (15:30~15:45)**

Cross-Sectional Survey of Food Security Status for the Syrian Refugee Living in Hosting Communities in Jordan

**Ghada Albandak**, Ahmed Mohammad Al-Smadi, and Omar Gammouh

American University of Madaba

*Abstract*—Food Security status of Syrian refugees was scanned in different areas in Jordan, so as to evaluate the effect of food security on their living conditions. The aim was to link Food Security to other health issues, so as to draw the attention of Association of Aid to the status of these vulnerable people. To achieve this goal, a survey was conducted to measure food security status based on USDA scale by asking the individual refugees 10 questions from which the answers showed the level of their food security. After exploring food security status of Syrian refugees in Jordan, the second objective was to examine differences in food security based on refugees’ demographical details such as areas of location, age and education.

<b>15:45-16:00</b>	<b>Coffee Break</b>
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# Session 2

**Tips:** The schedule for each presentation is for reference only. In case of missing your presentation, we strongly suggest that you attend the whole session.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Meeting Room 3**

**Session 2: 11 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Prof. Ignacio Javier Acosta Garc ía**

**R0004 Presentation 1 (13:00~13:15)**

Assessment of Seismic Retrofitting Techniques of RC Structures Using Fragility Curves

**Yasser E. Ibrahim Mansour**

Prince Sultan University, Saudi Arabia

*Abstract*—In order to study the efficacy of several seismic retrofitting techniques on the seismic performance of existing multistory reinforced concrete structures, finite element analysis is conducted using the finite element package, SeismoStruct. First, three models are considered; 4-story, 8-story and 12-story reinforced concrete framed structures designed according to Saudi Building Code (2007) for vertical loads and seismic forces for 0.2-second and 1.0-second response spectral accelerations of 0.21g and 0.061g, respectively. Two conventional retrofitting techniques are considered to upgrade the structures to withstand seismic forces for 0.2-second and 1.0-second response spectral accelerations of 0.66g and 0.23g, respectively. These techniques are increasing the dimension of structural elements and attaching concentric steel braces at the middle bay of each story to the existing reinforced concrete frames. One more innovative retrofitting technique relying on adding passive control devices is considered in the analysis. Incremental dynamic analysis using records of twelve artificial and historic earthquakes is carried out. Fragility curves are developed for all original and retrofitted cases considering five different performance levels for the sake of the assessment of the effectiveness of different retrofitting techniques. Based on the results obtained, retrofitting existing reinforced concrete framed structures by adding concentric steel braces are the best technique that enhances their seismic performance, compared to other techniques.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Meeting Room 3**

**Session 2: 11 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Prof. Ignacio Javier Acosta García**

**R0010 Presentation 2 (13:15~13:30)**

Proposal of a New Structural Member Using a Recently Developed High Strength Material

**Kazuhiro Hayashi**, Ryosuke Nishi, and Hiroyuki Inamasu

Toyohashi University of Technology, Japan

*Abstract*—The ultra-high strength steel H-SA700 is a relatively new and environment-friendly structural steel with no requirement for intensive heat treatment during manufacturing. In this paper, the cyclic behavior of concrete-filled steel tubes (CFT) using ultra-high strength steel H-SA700 was investigated experimentally. Four column specimens were tested by subjecting them to combined axial and flexural loadings. Two CFT design parameters were investigated: the grade of steel (H-SA700 and conventional) used and the cross section shape (circular and square) of the column. CFT columns using H-SA700 have about twice the elastic deformation capacity of conventional members. They can exhibit performance that exceed the full plastic moment based on superposed strengths theory. They also have sufficient plastic deformation capacities until their strengths decrease due to fracture, and local buckling of the steel occur. These results show that CFT columns using H-SA700 steel can be used as building structural members.



**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Meeting Room 3**

**Session 2: 11 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Prof. Ignacio Javier Acosta Garc ía**

**R1001 Presentation 3 (13:30~13:45)**

Tensioned Fabric Structures with Surface in the Form of Chen-Gackstatter

**Yee Hooi Min** and Mohd Nasir Abdul Hadi

Universiti Teknologi MARA, Malaysia

*Abstract*—Form-finding has to be carried out for tensioned fabric structure in order to determine the initial equilibrium shape under prescribed support condition and pre-stress pattern. Tensioned fabric structures are normally designed to be in the form of equal tensioned surface. Tensioned fabric structure is highly suited to be used for realizing surfaces of complex or new forms. However, research study on a new form as a tensioned fabric structure has not attracted much attention. Another source of inspiration minimal surface which could be adopted as form for tensioned fabric structure is very crucial. The aim of this study is to propose initial equilibrium shape of tensioned fabric structures in the form of Chen-Gackstatter. Computational form-finding using nonlinear analysis method is used to determine the Chen-Gackstatter form of uniformly stressed surfaces. A tensioned fabric structure must curve equally in opposite directions to give the resulting surface a three dimensional stability. In an anticlastic doubly curved surface, the sum of all positive and all negative curvatures is zero. This study provides an alternative choice for structural designer to consider the Chen-Gackstatter applied in tensioned fabric structures. The results on factors affecting initial equilibrium shape can serve as a reference for proper selection of surface parameter for achieving a structurally viable surface.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Meeting Room 3**

**Session 2: 11 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Prof. Ignacio Javier Acosta Garc ía**

**R0011 Presentation 4 (13:45~14:00)**

Response of High-rise Buildings under Long Period Earthquake Ground Motions

**Taiki Saito**

Toyohashi University of Technology, Japan

*Abstract*—During the 2011 Great East Japan Earthquake, high-rise buildings in Tokyo, Nagoya and Osaka swayed vigorously and caused damage to non-structural elements such as with the falling of ceiling panels. Those cities are located near deep layers of sediment and such conditions can create long period ground motions of low frequency even when far from the epicenter of an earthquake. These low frequency waves can travel backwards and forwards through the sediment upon meeting hard obstacles like rock, creating ground movement that resonates with tall structures causing them to sway and topple. In this report, the performance of high-rise buildings during the 2011 Great East Japan Earthquake is presented first. Then, the safety of high-rise buildings with long period ground motions in a massive earthquake that may arise in the future is discussed.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Meeting Room 3**

**Session 2: 11 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Prof. Ignacio Javier Acosta Garc ía**

**R0015 Presentation 5 (14:00~14:15)**

Shear Capacity of Post-Tensioning Pre-Stressed Concrete Beams with High Strength Stirrups

**Hye-Sun Lim**, Byung-Koo Jun, Dong-Ik Shin, and Jung-Yoon Lee

SungKyunKwan University, Korea

*Abstract*—The yield strength of stirrups is limited to 420MPa and 600MPa in the ACI 318-14 standard and EC2-02 respectively. In this study, four beams were tested to investigate the influence of high strength stirrups on the shear behavior of PSC beams. For extension of this study, simulations to obtain the shear behavior of prestressed concrete beams with various yield strength of stirrups was conducted using a finite element analytical program (RCAHEST). The experimental and analytical results indicated that the limitation on the yield strength of shear reinforcement for prestressed concrete beams in the ACI 318-14 design code was too conservative. The simulation result also indicated that it could be possible to increase the yield strength of shear reinforcement in the ACI 318-14 design code up to 610MPa. The shear strength of prestressed concrete beams with high strength stirrups did not proportionally increase with the increase of yield strength of stirrups.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Meeting Room 3**

**Session 2: 11 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Prof. Ignacio Javier Acosta Garc ía**

**R0016 Presentation 6 (14:15~14:30)**

Torsional Behavior of Reinforced Concrete Beams Predicted by a Compatibility-Aided Truss Model

**Seung Hoon Lee**, Seok-Kwang Yoon, Sung Hyun Yoon, Yoon Ki Hong, and Jung-Yoon Lee

Sungkyunkwan University, Republic of Korea

*Abstract*—To avoid brittle torsional failure due to web concrete crushing before yielding of torsional reinforcement on reinforced concrete members, the ACI 318-14 design code and the Eurocode 2 limit the yield strength of torsional reinforcement up to 420 MPa and 600 MPa, respectively. In this study, six beams having different compressive strength of concrete and yield strength of torsional reinforcement were tested. The observed test results were compared with the torsional behavior predicted by a compatibility-aided truss model. Experimental and analytical results showed that torsional strength of reinforced concrete beams did not increase as the yield strength of torsional reinforcement increased. The beams with high strength torsional reinforcement failed due to concrete crushing before yielding of reinforcement. Test results also indicated that the limitation on the yield strength of torsional reinforcement in the ACI 318-14 design code was appropriate but not in the Eurocode 2.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Meeting Room 3**

**Session 2: 11 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Prof. Ignacio Javier Acosta Garc ía**

**R0017 Presentation 7 (14:30~14:45)**

Evaluation of the Long-Term Deflection Performance of Resilient Materials in Floor Floating Systems

**Yoon Ki Hong**, Jung Min Kim, Dong-Ik Shin, Jin Koo Kim, and Jung-Yoon Lee

Sungkyunkwan University, Korea

*Abstract*—About 60 percent of Koreans are living in a public house like multi-unit dwelling. Interlayer noise in living apartment houses rises a social problem in a densely populated country. Many countries established a law to reduce noise pollution induced by floor impact sound. This paper presents the test results of eight resilient materials in floating floor system subjected to long-term load. The main parameters of test specimens were types of materials, density of material, magnitude of load, and duration of load. Test results indicated that the duration of load strongly steadily increased deflection. In addition, long-term deflection of resilient materials was affected by types of materials, density and bottom plate shapes.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Meeting Room 3**

**Session 2: 11 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Prof. Ignacio Javier Acosta Garc ía**

**R0018 Presentation 8 (14:45~15:00)**

Confinement Effect of Concrete with Carbon Fiber Sheet Reinforcement under Compressive Loading

**Roy Reyna**, Taiki Saito, Tomoya Matsui, and Kazuhiro Hayashi

Toyohashi University of Technology, Japan

*Abstract*—Over the past 15 years, large scale construction of medium-rise buildings, built using low ductility reinforced concrete (LDRC) wall, have been commonplace in Peru. These walls do not have boundary columns and have a small quantity of reinforcing bars at each end, therefore is expected to fail in flexural mode. From past studies, where a retrofitting method was proposed by using carbon fiber sheet (CFS) over the LDRC wall, it was verified that CFS delays the concrete crushing of the wall base that occurs during flexural failure and that deformation capacity was improved. In order to verify the confinement effect of the carbon fiber sheet over the concrete, an experiment was conducted using concrete samples with CFS by changing the size, shape and amount of CFS layers. In total, 39 concrete samples were tested under compressive loading (monotonic and cyclic). From the experiment, it was confirmed that deformation performance improved and the strength of the concrete was increased due to the confinement. However, it should be noted that the stress-strain relationship of concrete with CFS depends on the shape of the concrete sample.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Meeting Room 3**

**Session 2: 11 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Prof. Ignacio Javier Acosta Garc ía**

**R0019 Presentation 9 (15:00~15:15)**

Statistical Damage Detection Approach in SHM Based on Error Prediction Model

**Kundan Kumar**, Prabir Kumar Biswas, and Nirjhar Dhang

Indian Institute of Technology Kharagpur, India

*Abstract*—Vibration-based structure health monitoring technique detects the damage by observing the change in dynamic characteristics of the structure. Change in dynamic characteristics due to operational and environmental variation may confuse with the change due to damage in the structure resulting false alarm of the damage. In SHM, data normalization technique can be used to suppress the adverse effect due to different operational and environmental variability. In this paper, a data normalization approach based on error prediction model is presented that estimates the residuals of the vibration feature due to damage. Damage is detected by processing the residual errors after applying principal component analysis (PCA) on vibration features. The residual errors due to operational and environmental variabilities are optimally minimized through the best reconstruction of vibration features using an optimal number of principal components. The variance of reconstruction error (VRE) is applied to obtain the optimum number of principal components for best reconstruction of vibration features. Relative standard deviation of the residual errors is used as damage index that quantifies the level of the damage in the structure. The proposed approach is validated on a benchmark problem of detecting damage in a three-story building under different operational and environmental variabilities. A comparative analysis is performed with previously reported work for damage detection to test the efficacy of the proposed algorithm.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Meeting Room 3**

**Session 2: 11 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Prof. Ignacio Javier Acosta Garc ía**

**R0027 Presentation 10 (15:15 ~15:30)**

Effect of Thermal Stimulation of Admixture to Workability of the Mortar

**M.S.Salehi**, Z.Tahery, S.Sasaki, and S.Date

Tokai University, Japan

*Abstract*—The objective of this research is to study the effects of thermal stimulation of PC ether high performance water-reducing agent on the workability of fresh cement-mortar. For better understanding of the behavior of these admixtures under thermal stimulation condition, two types of water-reducing agents are used, superplasticizer and high range water reducer (Air Entraining type). The chosen admixtures were heated by different temperatures, 40, 50 and 60°C for two various times, 30 minutes and 24 hours. These conditions experimentally investigated different types of cements, high early strength cement and ordinary Portland cement. As a result, influence of thermal stimulation of admixtures on the workability of fresh cement-mortar is observed. Accordingly, in a specific water cement ratio in cement concrete, the amount of the admixture can be significantly reduced by using thermal simulation technique in comparison to non-thermal stimulated ones. Therefore, it is possible to reduce the economic aspect of production with this technique.



**Afternoon, March 24, 2016 (Thursday)**

**Time: 13:00~15:45**

**Venue: Meeting Room 3**

**Session 2: 11 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Prof. Ignacio Javier Acosta Garc ía**

**R1010 Presentation 11 (15:30~15:45)**

Effects of Shear Box Size on Shear Strength between Modified Sand-Column (PFA-Sand Mixture) and Soft Soil

**Mohamad Shakri Bin Mohmad Shariff** , Nazaruddin A.T, and Hafez M.A

SEGI University and University Teknologi Mara, Malaysia

*Abstract*—Shear Box or direct shear test is widely used in the study of shear strength characteristics. Many researchers done their studies on many aspects of test including effect of shear box sizes. In this study, by implementing the different size of shear box, the shear strength of soft soil sample with modified sand column will be determined. Pulverized fuel ash (PFA) has been selected to improve the mechanical properties of sand column including shear strength. PFA can be classified as hazardous Coal Combustion by-Product (CCP), which can contributes to the environmental pollution. According to (ACAA 2009), USA itself has produced approximately 125.5 million tons per annual of CCP which merely 56 million tons of these waste by-products has been successfully employed in applications and others still remain untreated. Therefore, this study is conducted to implement PFA to solve the issue regarding environmental and at the same time benefit the engineering. 40 samples with various proportion of materials (cement, PFA and sand) were prepared. Shear box tests were performed of two shear box sizes (60 x 60 mm and 300 x 300 mm). The results shown that the shear strength decreases as the size of shear box increase.

<b>15:45-16:00</b>	<b>Coffee Break</b>
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# Session 3

**Tips:** The schedule for each presentation is for reference only. In case of missing your presentation, we strongly suggest that you attend the whole session.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 16:00~19:15**

**Venue: Breakout Gallery**

**Session 3: 13 presentations-Topic: “Bioscience & Chemistry”**

**Session Chair: Prof. Ioana Demetrescu**

**F0010 Presentation 1 (16:00~16:15)**

Effect of Various Fermentation Stages on Antioxidative Activity of Belalai Gajah  
(*Clinacanthus Nutans*) Teas

**Mohd Zin, Z.,** Jia, C.Y., and Zainol, M.K.

Universiti Malaysia Terengganu, Malaysia

*Abstract*—Belalai gajah or Sabah snake grass, with the scientific name, *Clinacanthus nutans* (*C. nutans*) Lindau (Family: Acanthaceae) is a small shrub that belong native to tropical Asia countries. *C. nutans* has been medically recognized to be effective in the treatment of skin diseases and infection. This study was conducted to evaluate and compare the antioxidant activity of methanolic extract from dried (non-fermented), green (least fermented), oolong (semi-fermented), and black (fermented) tea made from *C. nutans*. The antioxidant activities of sample extract were determined by using free radical scavenging activity (DPPH), ferric thiocyanate (FTC), and thiobarbituric acid (TBA) tests. Dried *C. nutans* showed the highest antioxidant activity in the three antioxidant tests. There was no significant different ( $P>0.05$ ) between the dried *C. nutans* and the BHT (synthetic antioxidant) in FTC method. Green *C. nutans* teas showed relatively low DPPH radical scavenging activity, but, it comparatively high antioxidant potential according to FTC and TBA methods. On the other hand, oolong and black *C. nutans* teas have relatively high DPPH radical scavenging activity than green *C. nutans* teas, but low antioxidant potential according to FTC and TBA methods.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 16:00~19:15**

**Venue: Breakout Gallery**

**Session 3: 13 presentations-Topic: “Bioscience & Chemistry”**

**Session Chair: Prof. Ioana Demetrescu**

**F0012 Presentation 2 (16:15~16:30)**

Thermal Denaturation of Proteins in the Presence of Hydrocolloids

**Esra İbanoğlu** and Şenol İbanoğlu

Gaziantep University Food Engineering Faculty, Turkey

*Abstract*—The thermal denaturation of bovine serum albumin (BSA), lysozyme and whey protein isolate (WPI) in the presence of hydrocolloids (pectin, guar gum, i-carrageenan) were investigated. A decrease in the thermal stability of lysozyme was observed in the mixture of protein with i-carrageenan. The increase in the enthalpy of denaturation ( $\Delta H$ ) of BSA and lysozyme in the presence of hydrocolloids was attributed to the protection of globular protein against aggregation upon blockage of the hydrophobic binding sites by the bulky polysaccharide moiety. Biopolymers had a stabilizing effect on WPI. The thermal stability was the highest in the presence of pectin whereas the lowest transition temperature was observed in the presence of guar gum. A single transition peak was developed with pure WPI. However, WPI exhibited two transition temperatures together with pectin and i-carrageenan. WPI was stable against heat denaturation at acidic pH values (pH:4.0) while it was denatured at a low temperature at an alkaline pH (pH:9.0) in the presence of pectin. This was attributed to the formation of extra hydrogen bonding. The increase in the concentration of pectin has a little effect on the heat stability of WPI. However, it reduces the cooperativity of transition.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 16:00~19:15**

**Venue: Breakout Gallery**

**Session 3: 13 presentations-Topic: “Bioscience & Chemistry”**

**Session Chair: Prof. Ioana Demetrescu**

**F0021 Presentation 3 (16:30~16:45)**

Extraction of 1-Deoxynojirimycin (DNJ) from Silkworms as Functional Foods for Lower Postprandial Glucose

**Chaluntorn Vichasilp**, Pichet Wechavitan, Onanong Pongchompu, and Putthaporn Wiwacharn

Rajamangala University of Technology Isan, Thailand

*Abstract*—1-deoxynojirimycin (DNJ) is natural anti -glucosidase found in mulberry leaves and silkworms. Although, DNJ contents and its activities in a mulberry leaves have been investigated for decades but DNJ content in silkworms and its application are relative lack of researches. In this study, DNJ content, -glucosidase inhibitory activity and a potential DNJ extraction were investigated. To extract DNJ, the aqueous two-phase systems (ATPS) was applied to separate DNJ from other compounds in silkworms with response surface methodology (RSM). The important 4 factors; ammonium sulfate ( $X_1$ , 20-50% w/w), ethanol concentration ( $X_2$ , 20-80% w/w), ultrasound power ( $X_3$ , 120-300 watt) and time ( $X_4$ , 10-20 min) was examined. It was found the highest extraction recovery (95%) obtained when extracted with ammonium sulfate of 9.5%, ethanol concentration of 100 %, ultrasonic powder of 390 watt and time of 15 min.

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**Session 3: 13 presentations-Topic: “Bioscience & Chemistry”**

**Session Chair: Prof. Ioana Demetrescu**

**F0024 Presentation 4 (16:45~17:00)**

Effect of Peroxide Treatment on Functional and Technological Properties of Fiber-Rich Powders Based on Spent Coffee Grounds

Wadson F. Vilela, Daniela P. Leão, Adriana S. Franca, and **Leandro S. Oliveira**

Universidade Federal de Minas Gerais, Brazil

*Abstract*—The preparation of coffee beverage, as well as the industrial production of soluble coffee, generates a considerable amount of residues, the spent coffee grounds, SCG. There are no current profitable applications for these residues and an adequate disposal must be carried out since they are heavily pollutant and can be used to adulterate roasted and ground coffee. Thus, the objective of this work was to evaluate the effect of alkaline hydrogen peroxide treatment on the chemical composition and technological properties of spent coffee grounds in order to verify its potential as source of antioxidant dietary fibers. Evaluated parameters included moisture, fat, ash, soluble and insoluble dietary fiber contents, phenolics and in-vitro antioxidant potential, hydration properties and color. Total dietary fibre contents were shown to be high in comparison to commonly employed fibre sources, and increased with peroxide concentration. Phenolics content and the antioxidant activity of the treated spent coffee grounds decreased with increasing hydrogen peroxide concentration. Luminosity values increased significantly, and hydration properties showed a slight improvement with the increase in peroxide concentration. Overall, the alkaline hydrogen peroxide treatment produced an insoluble-fiber-rich material with physical and chemical characteristics that allow for its utilization as a source of antioxidant dietary fibers.

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**Session 3: 13 presentations-Topic: “Bioscience & Chemistry”**

**Session Chair: Prof. Ioana Demetrescu**

**D0006 Presentation 5 (17:00~17:15)**

Determination of Model Kinetics for Forced Unsteady State Operation of Catalytic CH<sub>4</sub> Oxidation

**Mohammad Effendy** and Endarto Y. Wardhono

Surabaya State University, Indonesia

*Abstract*—The catalytic oxidation of methane for abating the emission vented from coal mine or natural gas transportation has been known as most reliable method. A reverse flow reactor operation has been widely used to oxidize this methane emission due to its capability for autothermal operation and heat production. The design of the reverse flow reactor requires a proper kinetic rate expression, which should be developed based on the operating condition. The kinetic rate obtained in the steady state condition cannot be applied for designing the reactor operated under unsteady state condition. Therefore, new approach to develop the dynamic kinetic rate expression becomes indispensable, particularly for periodic operation such as reverse flow reactor. This paper presents a novel method to develop the kinetic rate expression applied for unsteady state operation. The model reaction of the catalytic methane oxidation over Pt/-Al<sub>2</sub>O<sub>3</sub> catalyst was used with kinetic parameter determined from laboratory experiments. The reactor used was a fixed bed, once-through operation, with a composition modulation in the feed gas. The switching time was set at 3 min by varying the feed concentration, feed flow rate, and reaction temperature. The concentrations of methane in the feed and product were measured and analysed using gas chromatography. The steady state condition for obtaining the kinetic rate expression was taken as a base case and as a way to judge its appropriateness to be applied for dynamic system. A Langmuir-Hinshelwood reaction rate model was developed. The time period during one cycle was divided into some segments, depending on the ratio of CH<sub>4</sub>/O<sub>2</sub>. The experimental result shows that there were kinetic regimes occur during one cycle: kinetic regime controlled by intrinsic surface reaction and kinetic regime controlled by external diffusion. The kinetic rate obtained in the steady state operation was not appropriate when applied for unsteady state operation. On the other hand, the kinetic rate expression obtained in the unsteady state operation fitted quite well. It

was proven that in one cycle period the kinetic rate would always shift according to the ratio of  $\text{CH}_4/\text{O}_2$ .

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**Session 3: 13 presentations-Topic: “Bioscience & Chemistry”**

**Session Chair: Prof. Ioana Demetrescu**

**D0007 Presentation 6 (17:15~17:30)**

Antifouling Properties of Zinc Nitrate in Seawater

**M. J. Suriani**, S. Ramlan, and W. B. Wan Nik

Universiti Malaysia Terengganu, Malaysia

*Abstract*—This study aim to investigate the potential of antifouling properties of zinc nitrate for mild steel in sea water. Fourier Transform Spectroscopy Infrared (FTIR) analysis is to identify various functional groups and unknown compounds present in the zinc nitrate that contribute to the antifouling properties. Screening test is conducted by using an Antifouling Crystal Violet Biofilm Assay method in order to prove the ability of the zinc nitrate to become an antifouling agent. Specimen used is mild steel A36 at dimension of 25mm x 25mm x 3mm. All specimens coated with zinc nitrate incorporated in acrylic varnish are immersed in sea water at Chendering Port about 50 days. Data were analyses by weight measurement method and scanning electron microscope (SEM). The weight measurement results shown as the amount of zinc nitrate increase, the higher antifouling rate. Zinc nitrate evidently proved the ability to inhibit the growth and the formation of biofilm of adhesive bacteria. It is significantly prevent the attachment of the biofouling organism.



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**Session 3: 13 presentations-Topic: “Bioscience & Chemistry”**

**Session Chair: Prof. Ioana Demetrescu**

**D0010 Presentation 7 (17:30~17:45)**

Fold DNA and Gold Nanoparticles into Nanoflower with Mediation of Apoferritin

**Jing Wei, Yi-Fang Meng, and Yong Jiang**

Southeast University, China

*Abstract*—DNA has attracted great attention as an ideal programmable agent. Many researchers have applied DNA as the template to assemble gold nanoparticles (AuNPs) into well-defined superstructures. However, it is still a challenge to control the number and position of the DNA molecules modified on the surface of nanoparticles. Herein, we have developed a novel strategy to assemble AuNPs into nanoflower (Figure 1) by complementary program of DNA with mediation of apoferritin. The key of the method is that apoferritin is used as cage to wrap AuNP so as to control the number and position of AuNPs combined with DNA. Playing the crucial role is apoferritin cage's reversible self-assembly and its eight hydrophilic channels. The size of nanoflower was uniform and most of them were more than ten microns in diameter. The Figure 2 shows the gradual increase of the nanoflower's diameter. The scale bars of a-f represent 1  $\mu\text{m}$ , 2  $\mu\text{m}$ , 2  $\mu\text{m}$ , 2  $\mu\text{m}$ , 10  $\mu\text{m}$  and 10  $\mu\text{m}$  respectively. The first figure (image a) presents shape prior to self-assemble into nanoflower. The diameter of nanoflower (b-f) was 5  $\mu\text{m}$ , 9.3  $\mu\text{m}$ , 11.7  $\mu\text{m}$ , 25  $\mu\text{m}$  and 32  $\mu\text{m}$  respectively.

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**Session Chair: Prof. Ioana Demetrescu**

**D0011 Presentation 8 (17:45~18:00)**

In-Situ Upgrading of Omani Heavy Oil with Amphiphilic Bimetallic CoMo Catalyst

**Abdullahi Yusuf**

Sultan Qaboos University, Oman

*Abstract*—A study on the upgrading of Omani heavy oil under aquathermolysis conditions was carried out. The objective was to determine optimum conditions for upgrading to allow for greatest viscosity reduction and hence improved recovery of heavy oil. A high temperature high pressure reactor was used for all upgrading experiments, and a design of experiment with 3 factors and 10 levels was used with a quasi random sampling sequence to develop the response surface for optimization of viscosity reduction. In addition to the design of experiment, one-factor experiments were conducted to isolate the effects of the responses observed in the multi-factor experiments. For the design of experiment, the temperature was varied between 260oC to 300oC, water concentration varied between 0 to 30%, with the catalyst concentration varied between 0 to 0.6% CoMo metal content. Analysis of the design of experiment results show that the higher reaction temperatures experimented at, the higher the viscosity reduction, in addition, the water content used for upgrading causes an increase in viscosity as observed in 1 factor experiments. The optimized settings for viscosity upgrading was at 300oC, 0.3% CoMo metal content and 5% water content – resulting in an 93% reduction in viscosity, and a 10% reduction in sulfur content. FT-IR and H NMR confirm the occurrence of dealkylation reaction in upgrading of the heavy oil. GC-FID spectrum showed a 55% decrease in >C21 component of the heavy oil and an increase in <C21 components. The upgrading of heavy oil in-situ would allow for the recovery of higher value hydrocarbons and a reduction in decline rates of reservoirs owing to the increased production that would be associated with the less viscous oil.

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**Session Chair: Prof. Ioana Demetrescu**

**D0017 Presentation 9 (18:00~18:15)**

Investigation of the DI Diesel Engine Performance Using Ethanol-Diesel Fuel Blends

**Malee Suntikunaporn**, Snunkhaem Echaroj, and Channarong Asavatesanupap

Thammasat University, Thailand

*Abstract*—Ethanol-diesel blend is a promising candidate as a fuel for direct injection (DI) diesel engine. In this research, solubility of different compositions of ethanol-diesel blends from 2 to 15% (v/v) ethanol were tested for 20 days. Significant increases in solubility of the blends were observed after addition of 1% (v/v) n-butanol. The Kubota’s RT140 diesel engine was operated using E7B1D92 blend at several engine speeds (1,000 to 1,600 rpm). The obtained results demonstrated that, when using E7B1D92 blend at an engine speed of 1,500 rpm, the engine power and torque of the RT140 engine were increased from 8.6 PS to 10.1 PS and 4.1 kg<sub>f</sub>-m to 5.1 kg<sub>f</sub>-m compared to pure diesel fuel. However, specific consumption fuel increased when E7B1D92 blend was used during the engine test. Additionally, analysis of exhaust gas revealed a decrease in smoke density when E7B1D92 was used instead of pure diesel.

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**Session Chair: Prof. Ioana Demetrescu**

**D1015 Presentation 10 (18:15 ~18:30)**

Unraveling the Role of p21 Activated Kinase 1 (Pak1) in UV-B Induced Premalignant Skin Lesion

**Beesetti PS Swarna Latha**, Mavuluri Jayadev, and Rayala Suresh Kumar

Indian Institute of Technology Madras, India

*Abstract*—Non-melanoma skin cancer (NMSC) - which includes both squamous cell carcinoma and basal cell carcinoma, has become an increasing health problem over the recent years and is mainly caused by overexposure to Ultraviolet (UV) light. P21 activated kinase 1 (Pak1), a major mitogen-responsive serine/threonine signaling kinase is a well-known regulator of cytoskeletal remodeling that contributes to tumor formation. Alterations in Pak1 expression has been documented in many type of cancers. However, the contribution and direct role of Pak1 signaling to the etiology of Non-melanoma skin cancer has not yet been studied. In the current study, upon UV B irradiation, we observed a significant increase in Pak1 activity and subsequently its nuclear localization in cell lines and mouse models. Further to understand the role of Pak1 in UV B induced DNA damage response and survival, Pak1 overexpression and knockdown clones were generated in keratinocytes using viral transduction. Functional assays using these Pak1 modulated systems showed that Pak1 plays a significant role in cell survival upon UV B exposure. Further, we elucidate the molecular mechanism of Pak1 activation by UV-B in keratinocyte cell lines is mediated by both the CPDs (CycloPyrimidineDimers) and EGFR pathway. In addition, we validated the above findings in a clinical setting by perceiving for Pak1 in various pre-malignant lesions of NMSC and observed that Pak1 expression is associated with histological evidence of chronic sun damage. We intend to focus on molecular mechanism and contribution of Pak1 to the transforming properties that promote the progression of skin lesions to more invasive tumors.

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**Session 3: 13 presentations-Topic: “Bioscience & Chemistry”**

**Session Chair: Prof. Ioana Demetrescu**

**D1016 Presentation 11 (18:30~18:45)**

Phosphorylation Dependent Regulation of DNA Repair Function of Adaptor Protein KIBRA in Cancer Cells

**Jayadev Mavuluri** and Dr. Suresh Kumar Rayala

Indian Institute of Technology Madras, India

*Abstract*—Multifunctional adaptor proteins encompassing various protein-protein interaction domains play a central role in the DNA damage response pathway. In this study, we show that KIBRA is a physiologically interacting reversible substrate of ATM. We identified the site of phosphorylation in KIBRA as Threonine 1006 that is embedded within the (S/T)Q consensus motif by site-directed mutagenesis, and further confirmed the same with phospho (S/T)Q motif specific antibody. Results from DNA repair functional assays like  $\gamma$ -H2AX, PFGE, Comet assay, TUNEL assay and Clonogenic cell survival assay using stable overexpression clones of Wt-KIBRA, active (T1006E) and inactive (T1006A) KIBRA phosphorylation mutants showed that T1006 phosphorylation on KIBRA is essential for optimal DNA double-strand break repair in cancer cells. Further, results from stable retroviral short hairpin RNA-mediated knockdown (KD) clones of KIBRA and KIBRA Knockout (KO) model cells generated by CRISPR/Cas9 system showed that depleting KIBRA levels compromises the DNA repair functions in cancer cells upon inducing DNA damage. All these phenotypic events were reversed upon reconstitution of KIBRA into cells lacking KIBRA- Knock in (KI) model cells. Summatively, these data demonstrate the imperative functional role of KIBRA - per se KIBRA phosphorylation at T1006 site as a molecular switch that regulates DNA repair functions, suggesting that KIBRA could be a potential therapeutic target for modulating chemoresistance in cancer cells.

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**Session 3: 13 presentations-Topic: “Bioscience & Chemistry”**

**Session Chair: Prof. Ioana Demetrescu**

**D2007 Presentation 12 (18:45~19:00)**

Optimisation of Microwave Assisted Extraction of Betulinic Acid from the Leaves of *Vitex Negundo* Linn. and Its Comparison with Conventional Extraction Method

**Sunita D.Shirvalkar** and Kiran V. Mangaonkar

S.I.W.S. college (Mumbai University), India

**Abstract**—The extraction of bioactive compounds from plants is one of the most critical steps in the commercial development of natural products. Therefore rapid and efficient phytochemical extraction methods are essential. The extraction of phytochemicals from plant matrices are done using conventional methods like solvent and shake flask extraction, Soxhlet and sonication. But these methods need more time and consume large amount of organic solvent. Microwave assisted extraction (MAE) technique is a promising technique which offers high and fast extraction ability with less solvent consumption and protection offered to thermolabile constituents are some of the attractive features. In this study a sincere effort has been made to comparatively evaluate MAE and the conventional technique for their efficiency to extract the content of betulinic acid from the leaves of *Vitex negundo* Linn. Betulinic acid, a triterpenoid, is reported to occur widely in many medicinal plants. It has been shown to have important biological activities. The leaf powder of *Vitex negundo* Linn. was extracted in a modified microwave system. Various critical parameters such as use of solvent volume, power and time of irradiation were optimized. These parameters were used to carry out the betulinic acid extraction from the leaves of *Vitex negundo* Linn. The betulinic acid content by MAE was found to be more than the conventional extraction technique. The HPLC method used for the quantification of betulinic acid was found to be simple, precise, specific, sensitive and accurate and can be used for quality control of raw materials. The study revealed the superiority of microwave assisted extraction compared to the conventional extraction method.

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**Session 3: 13 presentations-Topic: “Bioscience & Chemistry”**

**Session Chair: Prof. Ioana Demetrescu**

**D2008 Presentation 13 (19:00~19:15)**

Effects of Puerarin Derivative P on Learning, Memory and MPO Activity in Vascular Dementia Model Mice

**Pei Jiang** and Yubin Ji

Harbin University of Commerce, China

Abstract—Pharmacological experiments confirmed that Puerarin could not only expand the arterial vessels, increase the local blood flow, but also could protect the myocardium, improve the blood supply of ischemic tissue, which was used to treat the cerebrovascular dementia disease in clinical practice. Its own structure particularity caused the lower bioavailability and poorer solubility. In order to improve the deficiency, the related pharmacological experiments of the newly synthesized puerarin derivative (P), so as to expect the better curative effect than puerarin in the process of treating vascular dementia. The vascular dementia model was established by permanently ligating the common carotid artery in mice. The effects of puerarin derivative (P) on learning and memory in mice by water maze, Ymaze and new object discrimination methods; The myeloperoxidase activity in the ischemic cerebral cortex was evaluated in mice by biochemical method. The experimental results showed that the mice spontaneous alternation response accuracy in Y maze could be obviously improved in 100mg/kg puerarin derivative group; In water maze, the swimming time to the safe platform would be significantly decreased in puerarin derivative group. Meanwhile, the MPO activity in the cerebral cortex of dementia mice was significantly decreased in 100mg/kg puerarin derivative group by permanently ligating the unilateral common carotid artery.

# Session 4

**Tips:** The schedule for each presentation is for reference only. In case of missing your presentation, we strongly suggest that you attend the whole session.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 16:00~19:00**

**Venue: Meeting Room 3**

**Session 4: 12 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Assoc. Prof. Yasser El-Husseini Ibrahim Mansour**

**R1019 Presentation 1 (16:00~16:15)**

Analysis of Circadian Stimulus and Visual Comfort Provided by Window Design in Architecture

**Ignacio Javier Acosta García, J.F. Molina, and M.A. Campano**

University of Seville, Spain

*Abstract*—Light is the major synchronizer of circadian rhythms to the 24-hour solar day. Compared to the visual system, the circadian system requires more light to be activated and is more sensitive to short-wavelength light. Daylighting is an ideal light source for circadian entrainment. Architectural and design features, such as window size and room reflectances impact the amount of circadian stimulus that the patient will receive. DaySim 3.2 simulations were used to determine the percentage of days that occupants would receive a minimum circadian stimulation of 0.50 for at least an hour during the morning. According to a phototransduction model of the human circadian system, a circadian stimulation of 0.50 is equivalent to suppressing the hormone melatonin by about 50%. This circadian stimulus criterion is examined for different window to wall ratios, for two average room reflectances, and for four latitudes. The present paper provides an example of a tool that could be used to assist designers in fenestration and interior design.



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**Session Chair: Assoc. Prof. Yasser El-Husseini Ibrahim Mansour**

**R0006 Presentation 2 (16:15~16:30)**

Numerical Investigation of Flow around Groins in Barotropic Condition

Omdehghiasi Hamed, **Mojtahedi Alireza**, Lotfollahi-Yaghin Mohammad Ali, and  
Hokmabady Hamid

University of Tabriz, Iran

*Abstract*—Groins are a kind of structures which constructed to prevent the coastal areas from erosion and to manage the direction of flow. However, the groin body and related flow features are the main causes of local corrosion. In this study, we investigate the flow patterns around refractive and right-angle groins. The flow characteristics around a refractive groin are compared numerically and study to achieve a reliable right-angle groin of various projected lengths. The results indicate that the relation between the thalweg height and geometry of the channel and groin length can be approximated using linear formulas regardless of internal celerity in the flow region.

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**Session Chair: Assoc. Prof. Yasser El-Husseini Ibrahim Mansour**

**R0007 Presentation 3 (16:30~16:45)**

Urban Decentralisation as a Conversion Process for Restoring Structures of Urban Space

**Martin Brabant**

Rajamangala University of Technology Isan, Thailand

*Abstract*—In terms of their geographical definition, decentralised and central locations are inseparable from each other. Centres influence cities, both in their dominance over competing cities and in their regional development – decentralised locations in the context of such urban structures are an important stimulus for innovation. Centres exert significant influence on the evolution and development of density of the location, on the economy, the environment, social infrastructure and on society in general. These interlinked factors describe urban space, meaning the concentration of a wide range of products and services on offer in a confined space. “The term urban development may refer to all the different ways in which urban structures can change in regard to their demographic structure, composition of the workforce, jobs, the spatial distribution of the population and land use. Equally, such changes may refer to the city or to individual parts of the city. Hence urban development is a collective term for different processes, for example de-industrialisation, suburbanisation, gentrification, decline and revitalisation. An overarching theory of urban development is a chimera: no single theory is able to describe all the processes involved and explain the dependent variables behind all the changes

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**Session Chair: Assoc. Prof. Yasser El-Husseini Ibrahim Mansour**

**D0012 Presentation 4 (16:45~17:00)**

ESCO Project for Buildings of Government Agencies in Thailand

**Monchai Prukvilailert** and Prapat Wangskarn

Thammasat University, Thailand

*Abstract*—In Thailand, Department of Alternative Energy Development and Efficiency (DEDE) have organized the ESCO project to promote and encourage the use of machinery, materials and equipment having high efficiency for government buildings. ESCO company provides the invest and management for changing equipments in the buildings. In this paper, the evaluation of the project has been presented. The potential of electricity savings is about 77 million kwhr/year. It can reduce imports of crude oil about 6.58 thousand tons of crude oil (Ktoe/year). The budget to invest is BHT 1,504 million, with an average payback period of 4.85. However, we found that the establishment of the budget is the barriers. The recommendations and solutions using legal process have been presented to proceed the project in the future.

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**Session Chair: Assoc. Prof. Yasser El-Husseini Ibrahim Mansour**

**D0013 Presentation 5 (17:00~17:15)**

Energy Conservation of the Designated Government Buildings in Thailand

**Prapat Wangskarn** and Monchai Prukvilailert

Thammasat University, Thailand

*Abstract*—The designated government buildings have implemented and administered energy program under the energy development and promotion Act 2007 for many years continuously until 2015. Appointment person responsible for energy, performing energy management and implementing the energy conservation work plan and measures are legal requirements for the designated buildings. Therefore, the ministry of Energy has launched the project to support the implementation of energy management. The aim of the project was to create the energy management system in the designated government buildings, and to reduce energy consumption. In this paper, the evaluation of the project has been presented from the achievements of 839 designated government buildings. The energy saving is more than 440 ktoe/year. This is about 3% of energy consumptions of buildings.

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**Session Chair: Assoc. Prof. Yasser El-Husseini Ibrahim Mansour**

**R0014 Presentation 6 (17:15~17:30)**

Paper Reduction of Maximum Torque Contribution Ratio of driving Shafts for Monorail Traveling on Worn Rack Rail in Urban Constructions and Forest Industries

**Kohei Nagao**, Kazuya Okubo, Toru Fujii, and Shoji Uchida

Doshisha University, Japan

*Abstract*—The purpose of this study is to propose a technique to reduce the torque applied onto driven shafts of monorail for urban constructions and forest industries. To reduce the maximum torque contribution ratios of driven shafts, a modified transmitting system for the monorail was proposed. The system is concurrently driven by two v-belts in which the phase difference of rotational angle was allowed. To evaluate the difference of torques produced on the shaft, two types of gearboxes of the vehicle were prepared to experimentally drive on the rack rail with short range (250mm) in test field. Two rack rails in which observed wear depth of the rack tooth was  $w=0$  and 3mm were prepared to experimentally investigate the behavior of monorail passing on the original and worn rack rail, respectively. The variations of torques of driven shafts were measured with respect to the rotational angle of the shaft when the driven pinion gears were engaged with original and worn rack rail in which the wear depth of tooth was  $w=3\text{mm}$ , respectively. When the modified power train was driven on original rack rail, the reduction ratio of the maximum torque of rear driven shaft was obtained about 8%. The reduction ratio of the maximum torque of rear driven shaft was about 30% by applying modified power train when the pinion gears were engaged with worn rack rail in comparison with those by applying the conventional power train. The torque contribution ratio of rear driven shaft was reduced down to about 63% by applying modified power train, while that was highly 89% through the conventional power train, even when the test systems were driven on worn rack rail. The increase of the torque contribution ratio of driven shafts was prevented in comparison with those by applying the conventional power train. This study found that the modified power train where two pinion gears were concurrently driven by two v-belts should be applied to reduce the maximum torque contribution ratio of driven shafts.

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**Venue: Meeting Room 3**

**Session 4: 12 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Assoc. Prof. Yasser El-Husseini Ibrahim Mansour**

**R0024 Presentation 7 (17:30~17:45)**

Analyses the Driving Forces for Urban Growth by Using IDRISI@Selva Models Abouelreesh  
- Aswan as a Case Study

**Omar Hamdy** and Shichen Zhao

Kyushu University, Japan

*Abstract*—Urban growth is very dynamic and complex processes, It has many factors affects on the directions and value of urban extensions, the factors that drive urban development must be identified and analyzed, The study of relative research shows that the driving forces which lead and redirect the urban sprawl, and try to classified these driving forces based on the value of its effectives on urban growth, Achieving the classification of driving forces needs using statistical method, our study used the logistic regressions to analysis and classes the driving forces for urban sprawl, Identifying the driving forces is the most important step to prediction the urban growth in future by using the cellular automata models so that the research try to prepare this step to complete the procedure to expect the urban extensions, This study takes Aswan area as a case study in period from 2001 to 2013 by analysis the official detailed plan and google earth historical imagery, Almost data prepared to logistic regressions analysis using ArcGIS software and IDRISI@Selva. We studied historical imagery of the area using Google Earth to examine changes in urban growth in 2001 and 2013, over a span of 12 years. The results showed urbanization in risk areas to be 59.79 % in 2001, then rising to 65.45 % in 2013, by the end of this paper it can be classified the effect of the driving forces in study area.

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**Venue: Meeting Room 3**

**Session 4: 12 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Assoc. Prof. Yasser El-Husseini Ibrahim Mansour**

**R0028 Presentation 8 (17:45~18:00)**

Study on the Durability of Concrete Lining Using Early-Strength Agent

**Taiki Yokoyama**, Y. Uno, T. Saito, and S. Date

Tokai University, Japan

*Abstract*— The purpose of this study is an evaluation of the effect of the new accelerator for cement (early strength agent). This admixture had been developed to achieve rapid construction. Original use of the admixture is to improve the productivity of pre-cast concrete products (here in after as “PCa”). However, in view of the characteristics of this accelerator, it was considered that an application to the tunnel lining concrete of which is being demolded in relatively small strength, could be expected. Then, pursuing the possibility of realizing the shortening of the construction period, is applied to the tunnel construction by NATM, it was measured such as compression strength and air permeability coefficient as the physical properties of the hardened concrete.

In this study, we describe the results of a study regarding the possibility of improving the durability in addition to the improvement of productivity.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 16:00~19:00**

**Venue: Meeting Room 3**

**Session 4: 12 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Assoc. Prof. Yasser El-Husseini Ibrahim Mansour**

**R2001 Presentation 9 (18:00~18:15)**

Empirical Study on the Energy Saving Effect of Different Wall Insulation Configurations with the Intermittent and Compartmental Heating Method

**Fang Ruan**, Xiaoqian Qian, and Kuangliang Qian

Zhejiang University, China

*Abstract*— In hot summer and cold winter zone of China, the intermittent and compartmental heating method of air conditioning is widely adopted. The intermittent heating method makes the heat storage in walls become the main way for heat dissipation. The compartmental heating method results in a large amount of heat loss not only in exterior walls, but also in interior walls. Based on this heating method, a series of experiments were conducted in Shaoxing, a typical city in the hot summer and cold winter zone. The results showed that, internal insulating method for exterior wall could save more energy than external insulating method by reducing the wall heat storage amount. Besides, both the exterior walls and interior walls should be insulated as the heat loss in interior walls accounts for a large proportion of the total heating load and whether the adjacent room heating or not has little effect on reducing it.



**Afternoon, March 24, 2016 (Thursday)**

**Time: 16:00~19:00**

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**Session Chair: Assoc. Prof. Yasser El-Husseini Ibrahim Mansour**

**R3004 Presentation 10 (18:15 ~18:30)**

An Overview of the Modelling of Infill Walls in Framed Structures

**Uğur Albayrak, Eşref Ünlüoğlu, and Mizam Doğan**

Eskisehir Osmangazi University, Turkey

*Abstract*—Infill walls are considered to non-bearing structural members but affect not only structure masses also lateral rigidities which may cause free vibration behavior of the buildings. Although infill walls are not considered structural members, they are acting together with the frame when subjected to seismic loads. Analyze and calculation models including infill wall contribution are difficult and complex especially on major construction projects. Behavior of masonry infilled R.C. frames under seismic loads should be modeled to consider the effect of the infill walls on the seismic performance of the structure. In this study an overview of the modelling methods of infill walls in reinforced concrete frames is presented. The advantages or disadvantages of the presented methods are discussed and an easy and effective procedure is suggested for using in practice design.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 16:00~19:00**

**Venue: Meeting Room 3**

**Session 4: 12 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Assoc. Prof. Yasser El-Husseini Ibrahim Mansour**

**R3005 Presentation 11 (18:30~18:45)**

A State of Art Review on Metaheuristic Methods in Time-Cost Trade-Off Problems

**Gülçağ Albayrak** and İlker Özdemir

Eskisehir Osmangazi University, Turkey

*Abstract*—The project managers encounter with difficult conditions with regard to fulfilling projects on time and within reserved resources. This sophisticated relationship among time and cost has been one of the challenging problems among project managers at all times. These types of problems were formerly defined and solved by traditional exact methods such as crashing method and linear programming. However, the complexity of the trade-off problem makes difficult to solve. Hence a number of methods called metaheuristics have evolved over the past few years. Although a few algorithms can be applied to time cost trade-off problem to make it more useful and valid with less computational time, some algorithms have not been studied adequately. This paper summarizes the existing metaheuristic methods and algorithms which are applied for solving time-cost trade-off problem, including genetic algorithm, swarm based algorithms, bio-inspired algorithms and etc. The potential contribution of this paper is to provide the current literature for researchers.

**Afternoon, March 24, 2016 (Thursday)**

**Time: 16:00~19:00**

**Venue: Meeting Room 3**

**Session 4: 12 presentations-Topic: “Civil & Urban Engineering”**

**Session Chair: Assoc. Prof. Yasser El-Husseini Ibrahim Mansour**

**R0034 Presentation 12 (18:45~19:00)**

Variations in Pressuremeter Testing Results

**Radhi Alzubaidi**

University of Sharjah, United Arab Emirates

*Abstract*—The project managers encounter with difficult conditions with regard to fulfilling projects on time and within reserved resources. This sophisticated relationship among time and cost has been one of the challenging problems among project managers at all times. These types of problems were formerly defined and solved by traditional exact methods such as crashing method and linear programming. However, the complexity of the trade-off problem makes difficult to solve. Hence a number of methods called metaheuristics have evolved over the past few years. Although a few algorithms can be applied to time cost trade-off problem to make it more useful and valid with less computational time, some algorithms have not been studied adequately. This paper summarizes the existing metaheuristic methods and algorithms which are applied for solving time-cost trade-off problem, including genetic algorithm, swarm based algorithms, bio-inspired algorithms and etc. The potential contribution of this paper is to provide the current literature for researchers.

# Poster Session

**Tips:** The poster session will last from 9: 00 to 19:00. Please provide your home-made poster to the conference specialist in advance before the conference beginning.

**March 24, 2016 (Thursday)**

**Time: 9:00~19:15**

**Venue: Breakout Gallery**

**Poster Session: 3 posters -Topic: “Food Science”**

**F0009**

Phenotypical and Genotypical Detection of Methicillin Resistance in *Staphylococcus Aureus* Isolates of Water Buffalo Milk and Dairy Product

Erdem Saka and **Goknur Terzi Gulel**

Ondokuz Mayıs University, Facult of Veterinary Medicine, Turkey

*Abstract*—The aim of our study was to investigate genotypic and phenotypic characteristics of methicillin resistance in *Staphylococcus aureus* isolates and as well as to determine MIC value. A total of 99 *S. aureus* isolates obtained from water buffalo milk and dairy product was used in the study. Methicillin resistance was measured using oxacillin (1µg) and cefoxitin (30µg) disc diffusion method according to Clinical and Laboratory Standards Institute (CLSI). Oxacillin and cefoxitin MIC value was determined by E test. Genotypic methicillin resistance was evaluated using Polymerase Chain Reaction (PCR) for the *mecA* gene. Out of 99 isolates, 14 (13.8%) were found to be methicillin resistant by oxacillin disc diffusion test, and nine (9%) were found to be resistant with cefoxitin by disc diffusion. Nine (9%) isolates were *mecA* gene positive by PCR.

**March 24, 2016 (Thursday)**

**Time: 9:00~19:00**

**Venue: Breakout Gallery**

**Poster Session: 3 posters -Topic: “Energy & Biology”**

**F0014**

Reduction of *Escherichia coli* O157, *Salmonella* Typhimurium, *Listeria Monocytogenes* and *Staphylococcus aureus* Populations on Fresh Green Leaf Lettuce with Ozone Treatment

**Hilal Colak**, Hamparsun Hampikyan, Enver Baris Bingol, Esra Akkaya, and Omer Cetin

Istanbul University, Turkey

*Abstract*—Fresh green vegetables, such as lettuce, iceberg, and romaine are important components of the human diet and are increasingly consumed as a healthy diet ingredient in recent years. However, green leafy vegetables have been associated with severe food-borne disease outbreaks caused by bacteria contamination during the various farming or post-harvest stages. Since ozone does not leave hazardous residues on food, ozone may serve as a potential alternative to eliminate the bacterial population of food plants. For this purpose, 2,5 and 5 ppm ozone concentrations were treated on washing water for 5, 10, 15 and 20 minutes to investigate the reduction of *Escherichia coli* O157, *Salmonella* Typhimurium, *Listeria monocytogenes* and *Staphylococcus aureus* in fresh green leaf lettuce. As a result, treatments of ozone for different exposure times caused reduction ranging between 1.9 -3.4 log CFU/g for *Escherichia coli* O157, 1 – 2.4 log CFU/g for *Salmonella* Typhimurium, 1.4 – 2.6 log CFU/g for *Listeria monocytogenes* and 1.3 – 3.2 log CFU/g for *Staphylococcus aureus*, respectively. It is concluded that the inhibitory effect of ozone on the pathogens increased significantly with the concentration and time.

**March 24, 2016 (Thursday)**

**Time: 9:00~19:00**

**Venue: Breakout Gallery**

**Poster Session: 3 posters -Topic: “Energy & Biology”**

**F0015**

Effect of Ozonized Water on the Sensory and Microbiological Quality of Fresh Green Leaf Lettuce during Refrigerator Storage

**Enver Baris Bingol**, Hamparsun Hampikyan, Omer Cetina Akkaya, and Hilal Colak

Istanbul University, Turkey

*Abstract*—Ozone disinfection technology gains more attention on food industry during the last years due to its distinct antimicrobial effects against bacteria, fungi, viruses and bacterial and fungal spores. Ozone has been recognized as a Generally Safe (GRAS) substance and was also approved as a direct food additive for the treatment, storage and processing in foods. Fresh green leaf lettuce, which contains several vitamins and minerals, is indispensable for human diet, and can be contaminated with pathogenic bacteria such as *Escherichia coli*, *Listeria monocytogenes*, *Salmonella* spp., and *Staphylococcus aureus*. Ozonisation is widely used decontamination method in food industry in the last decade as an alternative application to eliminate the bacterial population. Besides this positive effect, high concentration of ozone can deteriorate the quality of the product. This study was then conducted to provide information on the effectiveness of ozone treatments (2.5 and 5 ppm O<sub>3</sub> for 5, 10, 15 and 20 minutes) on sensorial and textural properties of lettuce and also to improve the hygienic quality of the product during refrigerator storage. The lightness of lettuce could be preserved like in the first day during 5 days of the refrigerator storage, whereas redness and yellowness values were dramatically decreased in both concentrations parallel to the sensorial evaluations. Hardness of lettuce was softened depending on increasing concentration and time. However, inactivation effect of ozone may give a practical and easy way to provide food safety, high concentration usage may negatively influence consumer preferences due to the product visuality.

Dinner	
19:30	Hotel Restaurant

# Conference Venue

## Mercure Hotel Amsterdam City

Joan Muyskenweg 10, 1096 CJ AMSTERDAM - NETHERLANDS

Tel: (+31)20/7219176 - Fax : (+31)20/6948735

<http://www.mercure.com/gb/hotel-1244-mercure-hotel-amsterdam-city/index.shtml>



The Mercure Hotel Amsterdam City is set in a beautiful location by the river and provides easy access to the ArenA, Ziggo Dome, Zuid-As business district and the center of Amsterdam. The hotel is just 5 minutes away from the RAI Convention Center. Ample, enclosed parking is available (charged parking areas), which makes this central hotel ideal not only for business trips but also weekends away! You can also reach the city center by public transport in just 10 minutes.

**Contact Person:**

Wendy Vontsteen

Groups & Events Coordinator

+31 207179528

[h1244-sb@accor.com](mailto:h1244-sb@accor.com)

# One-Day Tour in Amsterdam

March 25, 2016 (Friday) 9:00-17:00

## (Departure from Hotel Lobby)

Leave from **Mercure Hotel Amsterdam City** at **9:00 am**, March 25, 2016

1. visiting **Zaanse Schans Windmill** (If you want to have tour by ship, you must pay for it by yourself)



### Optional tour

(1). A cruise ship in Zaanse Schans Windmill: 30 euros per person

(2). The museums: 15 euros per person

### Lunch Time

2. A city tour of Amsterdam-**Dam Square, National Monument, Royal Palace and so on.**



We will leave at **5:00 pm** for hotel.

**Note:** Kindly inform you that registration of one day tour includes transportation and lunch only, excluding any tickets for museum. Hope you have a nice day in Amsterdam.



# APCBEES Forthcoming Conferences

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

CONFERENCE INFORMATION		PUBLICATION
<b>June 25-27, 2016, Bali, Indonesia</b>		
<b>ICNFS 2016</b>	2016 5th International Conference on Nutrition and Food Sciences (ICNFS 2016) <a href="http://www.icnfs.org/">http://www.icnfs.org/</a>	International Proceedings of Chemical, Biological and Environmental Engineering (IPCBE, ISSN: 2010-4618)
<b>July 7-9, 2016, Shanghai, China</b>		
<b>CCEA 2016</b>	2016 7th International Conference on Chemical Engineering and Applications (CCEA 2016) <a href="http://www.cbees.org/ccea/">http://www.cbees.org/ccea/</a>	International Journal of Chemical Engineering and Applications (IJCEA, ISSN: 2010-0221)
<b>ICABC 2016</b>	2016 3rd International Conference on Advances in Biology and Chemistry (ICABC 2016) <a href="http://www.icabc.org/">http://www.icabc.org/</a>	International Journal of Bioscience, Biochemistry and Bioinformatics (IJBBS, ISSN: 2010-3638) Or International Journal of Chemical Engineering and Applications (IJCEA, ISSN: 2010-0221)
<b>August 14-16, 2016, Porto, Portugal</b>		
<b>ICCCE 2016</b>	2016 7th International Conference on Chemistry and Chemical Engineering (ICCCE 2016) <a href="http://www.iccce.org/">http://www.iccce.org/</a>	Conference Proceedings Or International Journal of Chemical Engineering and Applications (IJCEA, ISSN: 2010-0221)
<b>August 19-21, 2016, Budapest, Hungary</b>		
<b>ICNFE 2016</b>	2016 International Conference on Nutrition and Food Engineering (ICNFE 2016) <a href="http://www.icnfe.org/">http://www.icnfe.org/</a>	International Proceedings of Chemical, Biological and Environmental Engineering (IPCBE, ISSN: 2010-4618) Or International Journal of Food Engineering (IJFE, ISSN: 2301-3664)
<b>ICBMS 2016</b>	2016 4th International Conference on Biological and Medical Sciences (ICBMS 2016) <a href="http://www.icbms.org/">http://www.icbms.org/</a>	International Journal of Pharma Medicine and Biological Sciences (IJPMBS, ISSN: 2278-5221) Or International Journal of Pharmaceutical Sciences (IJPPS, ISSN: 0975-1491)

2016 APCBEES AMSTERDAM CONFERENCES

<b>September 9-11, 2016, Hong Kong</b>		
<b>ICSCE 2016</b>	2016 International Conference on Structural and Civil Engineering (ICSCE 2016) <a href="http://www.icsce.org/">http://www.icsce.org/</a>	International Journal of Structural and Civil Engineering Research (IJSCER, ISSN: 2319-6009)
<b>ICBMM2016</b>	2016 International Conference on Building Materials and Materials Engineering (ICBMM 2016) <a href="http://www.icbmm.org/">http://www.icbmm.org/</a>	Volume of conference proceedings
<b>September 24-26, 2016, Toronto, Canada</b>		
<b>ICBEM 2016</b>	2016 6th International Conference on Biotechnology and Environmental Management (ICBEM 2016) <a href="http://www.icbem.org/">http://www.icbem.org/</a>	International Journal of Bioscience, Biochemistry and Bioinformatics (IJBBB, ISSN:2010-3638) Or Journal of Environmental Science and Development (IJESD, ISSN: 2010-0264)
<b>ICBEE 2016</b>	2016 8th International Conference on Chemical, Biological and Environmental Engineering (ICBEE 2016) <a href="http://www.icbee.org/">http://www.icbee.org/</a>	International Proceedings of Chemical, Biological and Environmental Engineering (IPCBE, ISSN: 2010-4618)
<b>October 12-14, 2016, Incheon, Republic of Korea</b>		
<b>ICEBS 2016</b>	2016 6th International Conference on Environment and Bioscience (ICEBS 2016) <a href="http://www.icebs.org/">http://www.icebs.org/</a>	International Journal of Pharma Medicine and Biological Sciences (IJPMBS, ISSN: 2278-5221) Or Journal of Environmental Science and Development (IJESD, ISSN: 2010-0264)
<b>October 26-28, 2016, San Francisco, USA</b>		
<b>ICABB 2016</b>	2016 2nd International Conference on Advances in Bioscience and Bioengineering (ICABB 2016) <a href="http://www.icabb.org/">http://www.icabb.org/</a>	International Journal of Bioscience, Biochemistry and Bioinformatics (IJBBB, ISSN:2010-3638) Or International Journal of Life Sciences Biotechnology and Pharma Research (IJLBPR, ISSN: 2250-3137)

## 2016 APCBEES AMSTERDAM CONFERENCES

<b>ICBEC 2016</b>	2016 7th International Conference on Biology, Environment and Chemistry (ICBEC 2016) <a href="http://www.icbec.org/">http://www.icbec.org/</a>	International Proceedings of Chemical, Biological and Environmental Engineering(IPCBEE, ISSN: 2010-4618)
<b>November 26-28, 2016, Sydney, Australia</b>		
<b>ICCEN 2016</b>	2016 5th International Conference on Civil Engineering (ICCEN 2016) <a href="http://www.iccen.org/">http://www.iccen.org/</a>	Volume of conference proceedings Or International Journal of Structural and Civil Engineering Research (IJSCER, ISSN: 2319-6009)

Welcome to participate in APCBEES upcoming conferences.

Good news! To join in APCBEES member is free now. If you are interested, please check the information on the website: <http://www.cbees.org/membership/>. Any question regarding to membership, please feel free to contact [membership@cbees.org](mailto:membership@cbees.org).

### Note

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**Note**

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## Feedback Information

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

<b>Personal Information</b>					
Conference Name and Paper ID					
Full Name					
E-mail Address					
Area of Research					
Affiliation					
<b>Please indicate your overall satisfaction with this conference with “√”</b>					
	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 APCBEES	Yes <input type="checkbox"/> No <input type="checkbox"/> (If “No”, you may apply membership from <a href="http://www.cbees.org/member.htm">http://www.cbees.org/member.htm</a> )				
Do You Willing to Receive APCBEES Future Conferences Information Via E-mail	Yes <input type="checkbox"/> No <input type="checkbox"/>				
Where did you get the conference information?					
Would you please specify the main reason for attending this conference?					

## 2016 APCBEES AMSTERDAM CONFERENCES

Did the conference fulfill your reason for attending?	Yes– Absolutely <input type="checkbox"/> Yes- But not to my full extent <input type="checkbox"/> No <input type="checkbox"/> (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!