2014 APCBEES COPENHAGEN, DENMARK CONFERENCES SCHEDULE

2014 3rd International Conference on Nutrition and Food Sciences (ICNFS 2014)
2014 3rd International Conference on Bioinformatics and Biomedical Science (ICBBS 2014)
2014 International Conference on Environmental and Engineering Geoscience (ICEEG 2014)

Copenhagen, Denmark

June 18-20, 2014

CABINN Scandinavia Hotel

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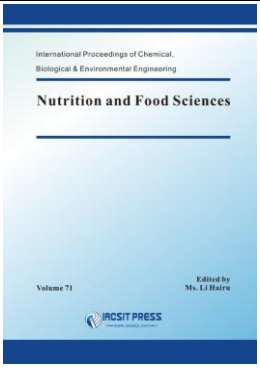
2014 APCBEES Copenhagen, Denmark Conferences Introduction

Welcome to CBEES 2014 conferences in Copenhagen, Denmark. The objective of the Copenhagen, Denmark conferences are to provide a platform for researchers, engineers, academicians as well as industrial professionals from all over the world to present their research results and development activities in Nutrition and Food Sciences, Bioinformatics and Biomedical Science, and Environmental and Engineering Geoscience.

2014 3rd International Conference on Nutrition and Food Sciences (ICNFS 2014)

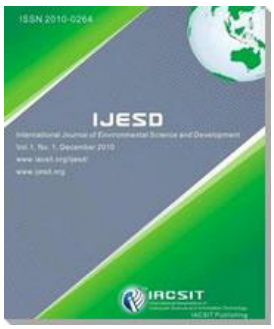


- **Paper publishing and index:** All ICNFS 2014 papers will be published in the Volume of Journal (IPCBEE, ISSN: 2010-4618), and all papers will be included in the Engineering & Technology Digital Library, and indexed by Ei Geobase(Elsevier), Ulrich's Periodicals Directory, Ulrich's Periodicals Directory, EBSCO, CNKI(中国知网), WorldCat, Google Scholar, Cross ref and sent to be reviewed by Compendex and ISI Proceedings.
- **Conference website and email:** http://www.icnfs.org/; icnfs@cbees.org.

2014 3rd International Conference on Bioinformatics and Biomedical Science (ICBBS 2014)

- **Paper publishing and index:** All papers of ICBBS 2014 will be published in the International Journal of Bioscience, Biochemistry and Bioinformatics (IJBBB, ISSN: 2010-3638), and all papers will be included in the Engineering & Technology Digital Library, and indexed by EBSCO, WorldCat, Google Scholar,Cross ref, ProQuest and sent to be reviewed by Ei Compendex and ISI Proceedings.
- **Conference website and email:** http://www.icbbs.org/; icbbs@cbees.org.

2014 International Conference on Environmental and Engineering Geoscience (ICEEG 2014)



- **Paper publishing and index:** All ICEEG 2014 papers will be published in the Journal of Environmental Science and Development (IJESD, ISSN:2010-0264), and all papers will be included in the Engineering & Technology Digital Library, and indexed by EBSCO, WorldCat, Google Scholar, Cross ref, ProQuest, CABI and sent to be reviewed by EI Compendex and ISI Proceedings.
- **Conference website and email:** http://www.iceeg.org/; iceeg@cbees.net.

Excellent Paper Award

- One excellent paper will be selected from each oral presentation sessions, and the Certificate for Excellent Papers will be awarded at the end of each session on June 19, 2014.

Instructions for Oral Presentations

Devices Provided by the Conference Organizer:

Laptops (with MS-Office & Adobe Reader)
Projectors & Screen
Laser Sticks

Materials Provided by the Presenters:

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

Duration of each Presentation (Tentatively):

Regular Oral Presentation: about 8 Minutes of Presentation and 2 Minutes of Q&A
Keynote Speech: 30 Minutes of Presentation and 10 Minutes of Q&A

Brief Schedule for Conferences

June 18, 2014
10:00am-5:00pm
Arrival and Registration

⇩

June 19, 2014
8:30am-6:30pm
Registration and Conference Presentation

⇩

Rooms Plenum

Opening Remarks	08:30am~08:40am
Keynote Speech I	08:40am~09:20am
Keynote Speech II	09:20am~10:00am
Coffee Break&Taking Photo	10:00am~10:20am

⇩

Session 1 10:20am-12:30pm
ICNFS 2014 for 13 presenters

⇩

Lunch 12:30pm~1:30pm

⇩

Session 2 1:30pm-3:50pm
ICNFS 2014&ICEEG 2014 for 14 presenters

⇩

Coffee Break 3:50pm-4:10pm

⇩

Session 3 4:10pm-6:10pm
ICBBS 2014 for 12 presenters

⇩

June 20, 2014
9:00am-11:00am
Academic Official Visit in DTU National Food Institute

Detailed Schedule for Conferences

June 18, 2014 (Wednesday)

Venue: Lobby

10:00am-5:00pm	**Arrival and Registration**

Note: (1) You can also register at any time during the conference.
(2) The organizer doesn't provide accommodation, and we suggest you make an early reservation.
(3) One excellent paper will be selected from each oral presentation sessions, and the Certificate for Excellent Papers will be awarded at the end of each session on June 19, 2014.

Morning, June 19, 2014 (Thursday)

Venue: Rooms Plenum

8:30am-8:40am	**Opening Remarks** Prof. Anders Permin Deputy Director at National Food Institute of Danmarks Tekniske Universitet
8:40am-9:20am	**Keynote Speech I** Prof. Edward Sazonov Department of Electrical and Computer Engineering at the University of Alabama, Tuscaloosa, AL, USA  "WOW: the World Of Wearables"
9:20am–10:00am	**Keynote Speech II** Prof. Anders Permin Deputy Director at National Food Institute of Danmarks Tekniske Universitet  "New bio-economy. Optimising the food industry creating new by-products"
10:00am-10:20am	**Coffee Break&Taking Photo**

Morning, June 19, 2014 (Thursday)

SESSION–1 (ICNFS 2014)

Venue: Rooms Plenum

Session Chair: Prof. Anders Permin

Time: 10:20am-12:30pm

A0005	Seasoning Sauce Fermentation Using Tuna Processing Waste Chawin Aungkatawiwat, Nichaphat Detkamhaeng and **Jirapa Hinsui** Kasetsart University *Abstract*—Tuna viscera were sources of enzyme and protein in tuna processing waste. The objective of this research was to produce seasoning sauce using tuna processing waste. Skipjack viscera were fermented in 0, 5 and 10% salt at room temperature. The 0% salt fermentation contained higher protein content than the sample at 5 and 10%, respectively. The best conditions for skipjack viscera fermentation were 0% salt for 5 days. The seasoning sauce contained amounts of crude protein, salt and fat of 18.62±0.14, 1.83±0.99 and 0.59 ± 0.24%, respectively. It contained essential amino acids, histidine, isoleucine, leucine, lysine, methionine, phenylalanine and tryptophane. The level of histamine (267.66 mg / kg) was below the level the safe level for human consumption. The seasoning sauce was brownish-yellow color which was different from anchovy fish sauce.
A0007	The Potential Effect of Fruits and Vegetables on Liver Functions and Liver Alterations Induced by Acrylamide in Mice Hala M Nagi, Walaa S M Amin and **Shafika A Zaki** Department of Food Science, Faculty of Agriculture, Cairo University, Giza, Egypt *Abstract*—The study aimed to assess the effect of some dried fruits and vegetables on liver functions and alterations against acrylamide that administered for Swiss adult male albino mice. A total of 49 mice (25±2g) were divided to seven groups. First group was considered as negative normal. The remaining mice were subjected for oral administration of 40 µg acrylamide / kg body weight daily for 8 weeks. Group 2 was considered as positive control. First and Second groups were fed on basal diet. Groups 3, 4, 5, 6 and 7 were given basal diets with 20% of with raisins, apricot, figs, tomato and carrot, respectively. Inverse associations were observed between the consumption of vegetables and fruits and liver changes. These diets significantly reduced the activity of transaminases (ALT and AST) and Liver histopathological alterations compared to positive control.
A0008	Prediction of Metabolized Sugar Levels from the IAUC (incremental area under the curve) of Rats **Seongweon Jeong**, Jongchan Kim and Jungmin Ha Korea Food Research Institute *Abstract*—Modern people's nutrient intakes in life are much higher than levels typically required. The excessive sugars in processed foods are being recognized as serious social problems and it has become important to predict the metabolized sugar levels in blood. In this study, the modified measurement methods of ISO 26642 international standard

	(Determination of glycemic index and recommendation for food classification) using animal testing were conducted. The levels of blood glucose and IAUC (incremental area under the curve) from animal testing compared with the results from those of Sydney University. The results showed the possibility of overcoming the problems of high costs and a relatively long experimental period in traditional GI (glycemic index) experiments.
A0009	Natural Nanoencapsulant Antioxidants Based on Kecombrang Fruit (*Nicolaia speciosa*) **Rifda Naufalin** and Herastuti Sri Rukmini JENDERAL SOEDIRMAN UNIVERSITY *Abstract*—Kecombrang Fruit has a bioactive compound as antioxidant; however the extract of kecombrang fruit has many weaknesses such as volatile and less stable in light and oxygen. Furthermore, it need expand of extraction in case of nanoencapsulant. It is a closure to get more stable product and easier to apply in food product. The research aims to produce practical nanoencapsulant antioxidants, stable and can be applied to food products. The method used is the extraction and formulation nanoenkapsulation extract. The results showed that the formulas based nanoencapsulant kecombrang fruit extract with fillers maltodextryn and soy protein and tween 20 has potential as a natural antioxidant, with the total phenolic content of 289.86 mg/100 g and antioxidant activity of 32.165%.
A1008	The Relation between Protein-Protein and Polysaccharide-Protein Interactions on Aroma Release from Brined Cheese Model **Mehrnaz Aminifar** and Farnoosh Attar Standard Research Institute (SRI), Karaj, Iran *Abstract*—The relation between textural parameters and casein network on release of aromatic compounds was investigated over 90-days of ripening. Low DE (Dextrose Equivalent) maltodextrin and WPI (Whey Protein Isolate) were used to modify the textural properties of low fat brined cheese. Hardness and compaction of casein network were affected by addition of maltodextrin and WPI. Textural properties and aroma release from cheese texture were affected by interaction of WPI protein-cheese protein and maltodexterin-cheese protein.
A1010	Spectroscopic Techniques Used for Enzyme Evaluation in Food Industry **Farnoosh Attar** and Mehrnaz Aminifar Standard Research Institute (SRI), Karaj, Iran *Abstract*—Since applications of enzymes in the food industry are many and diverse, monitoring the activity and structure of these bio-catalysts has become a major concern. For this purpose, an *in vitro* study was conducted on beef liver catalase (BLC; EC. 1.11.1.6), as an enzyme model. The enzymatic activity was measured by following H_2O_2 dismutation to H_2O and O_2 under steady-state kinetics conditions. Whereas structural alterations were assessed by series of spectroscopic techniques such as electronic absorption, fluorescence, and circular dichroism at 25°C in 0.1 M phosphate buffer solution at pH 7.0. Our results suggested that enzymes used in the food industry could be followed by various spectroscopic techniques to ensure the quality and safety of food products.
A1012	Cast a New Light on the Retrogradation-retardation Technology for Rice Cake Seoyoung Han, Hyeyoung Park, Dongsun Shin, Kyungmi Kim and **Gwijung Han**

	National Academy of Agricultural Science, Rural Development Administration *Abstract*—The present study was carried out to determine optimum manufacturing condition for maintenance of rheological properties and retrogradation retardation of rice cake during shelf life. It has been selected four key elements in each manufacturing procedure. We investigated the effect of added moisture volume(in step 1), cooling temperature for steamed dough(in step 2), quantity of added wheat flour(in step 3) and physical impacting force(in step 4) on several rheological and the related quality properties of rice cake. In this study, we set up experimental condition as variable in each process as following; adding moisture volume (15~24%), cooling temperature (65~95 ℃), different volume of starch (wheat flour, 0~0.7% w/w of swelling rice), and punching time (2~20 min, with rotor speed of 400 rpm). At results, we found that the best standard manufacturing procedure for retrogradation-retardation technology(RRT) is moisture (24%), cooling down under 65 ℃ for steamed dough, wheat starch (0.2%), and punching for 13 min with rotor speed of 400 rpm. It can be assumed that the principle of RRT is not one factor but interaction among moisture content, temperature, punching time, and grain starch property.
A1013	Characterization of Vegetable Surface during Drying Using Fractal Analysis Technique **Chanthima Phungamngoen**, Naphaporn Chiewchan and Sakamon Devahastin King Mongkut's University of Technology Thonburi, Thailand *Abstract*—Combined fractal and image analysis technique was used to quantify the changes of vegetable surface characteristics during drying. Cabbage leaves were used as a test material and were allowed to undergo hot air drying, vacuum drying or low-pressure superheated steam drying (LPSSD) at 60 °C. Images of cabbage samples at time intervals during drying were obtained using a scanning electron microscope. An original image was transformed from gray scale to a black and white format. The fractal dimension (FD) of a black and white image was calculated using the box counting method. The changes of surface characteristics were quantified in terms of $\triangle FD/FD_0$. By comparing among the samples having similar moisture content, samples dried by hot air drying and vacuum drying exhibited more shrinkage (wrinkle) than those dried by LPSSD. The evolution of $\triangle FD/FD_0$ was found to relate well with % volumetric shrinkage of cabbage during drying.
A1017	Comparison of Tools for Nutrition Assessment in Queen Sirikit Heart Center of the Northeast, Thailand **Chutikan Sakphisutthikul**, CDT and Waraporn Chur-Inn, MD Queen Sirikit Heart Center in the Northeast of Thailand. Khon Kaen University *Abstract*—This study was to determine the prevalence of malnutrition and compare 2 assessment tools - the NRI and SGA, and non-nutritional factors in hospitalized patients. **Methods:** This prospective study was done in the Queen Sirikit Heart Center (QHSC) of the Northeast, Thailand. 150 consecutive patients hospitalized were studied. On admission, SGA, NRI, age, BMI, anthropometric measurements, and laboratory data were assessed. **Results:** On admission, 38% of patients were malnourished according to the SGA and 42% according to the NRI. Malnutrition scores correlated significantly with age, % of weight loss, and LOS. BW, anthropometric data, albumin, LC, and TC correlated inversely with both techniques. Concordance was observed in 139 of the 150 (92.67%) patients with both assessments. Good

	level of agreement was achieved (κ = 0.426, P = 0.000). **Conclusions:** Both tests correlated with each other with respect to age, LOS, and anthropometric and laboratory data in hospitalized patients. Therefore, these two techniques can be used for nutritional assessment in QHSC patients.
A1018	Evaluation of Heavy Metals Contamination and Assessment of Mineral Nutrients in Poultry Liver Using Inductively Coupled Plasma-Mass Spectrometry **Oana-Mărgărita Ghimpeţeanu**, Cristina Ţoca, Florin Furnaris, Manuella Militaru University of Agronomical Sciences and Veterinary Medicine of Bucharest, Faculty of Veterinary Medicine *Abstract*—The aim of this study was to perform a short characterization of heavy metals and mineral nutrients concentration in poultry liver samples with macroscopic lesions and their possible effect on food safety. Thirty-eight poultry liver samples with macroscopic lesions were submitted to analysis. Heavy metals (Cd, Pb, Al) and mineral nutrients (Cr, Mn, Cu, Fe, Zn, Ca, Mg, K, Na) were determined by ICP-MS. The concentrations for heavy metals ranged from 0,1 to 1,29 mg/kg for Cd, 0,02 to 0,08 mg/kg for Pb and 0,13 to 8,85 mg/kg Al. For mineral nutrients, concentrations ranged from 0,13 to 2,66 mg/kg for Cr; 0.24 to 1,08 mg/kg for Mn; 0.74 to 2,92mg/kg for Cu; 14,11 to 54,65 mg/kg for Fe; 4,37 to 17,86 mg/kg for Zn, 43,2 to 199,51 mg/kg for Ca, 78,35 to 275,81 mg/kg for Mg, 989,54 to 3108,65 mg/kg for K, 276,28 to 1059,16 mg/kg for Na. Although it is known that people ingest heavy metals from animal products, the concentrations obtained in this study showed that there is no risk for human health linked to the consumption of poultry liver.
A1019	Effect of Marinating on Formation bf Polycyclic Aromatic Hydrocarbons in Grilled Chicken Meat **Afsaneh Farhadian**, Jinap Selamat and Faridah, Abass University Malaysia S abah *Abstract*—The study was conducted to investigate the effect of marinating on the formation of Polycyclic Aromatic Hydrocarbons in grilled chicken meat. Seven marinade treatments containing Basic marinade (mix of sugar, water, onion, turmeric, lemongrass, salt, garlic, coriander and cinnamon); Basic-oil marinade (the common marinade treatment for satay in Malaysia); Commercial marinade (packed powder of the satay marinade available in the local grocery stores); Basic-lemon marinade; Basic-oil-lemon marinade; Basic-oil-tamarind; and Commercial-tamarind marinade at four time intervals (0, 4, 8 and 12 hr) were applied to meat samples before charcoal grilling. Tandem solid-phase extraction (SPE) was used to clean the samples. A high performance liquid chromatography (HPLC-Fl) was used for PAHs analysis. Acidic marinade (addition of lemon juice to the basic marinade) showed the most important and significant effect on the lower concentration of PAHs formation. The study showed significant reduction (27% to 60%) of sum of three PAHs formation by basic-lemon juice marinating followed by commercial-tamarind, basic-oil-tamarind and basic-oil-lemon juice marinating.
A1021	Chemical and Microbiological Changes during Shrimp Seasoning Fermentation Using Seafood Processing Waste **Potjanan Reerueangchai**, Yardrung Suwannarat and Jirapa Hinsui

	Kasetsart University *Abstract*—Shrimp processing industries generate a lot of waste such as head and shell in each year. Objective in this research was to study chemical and microbiological changes during shrimp seasoning fermentation. Shrimp head and shell were fermented at various ratios of materials to salt (1:1, 1:2 and 1:3) at room temperature for 4 months. Shrimp seasoning was sampled every month to determine soluble protein, salt content and pH. The pH of shrimp seasoning was around 7.00 and salt content was 2.0-2.5% for all fermentation period. Soluble protein increased as fermentation time was progressed. The best condition for shrimp seasoning production using shrimp head and shell were at a ratio of materials to salt 1:1 for 3 and 4 months, respectively. Soluble protein content in head shrimp seasoning was higher than shell. Therefore shrimp head might be a good source for shrimp seasoning production.
A1028	Effect of Freeze-Dried Celery Products on the Glutamic Acid Content in Model Meat Systems under Different Ripening Conditions Viktorija Eisinaitė, **Rimantė Vinauskienė**, Ina Jasutienė, Daiva Leskauskaitė Kaunas University of Technology *Abstract*—The effect of celery products (3 %), starter culture and ripening conditions on pH and free glutamic acid content in model meat system were evaluated. For that reason model meat system from minced pork, lyophilized celery products and starter cultures were formulated and ripened at different conditions. It was determinated that carbohydrates presented in celery products and higher temperature (20 – 24 ^{o}C) influenced the faster decrease of pH in model meat system. Ripening process for 10 hours at +8 ^{o}C was too short for protein degradation and free glutamic acid formation. Due to the action of starter culture and endogenous meat enzymes free glutamic acid content increased in 4 – 5 times after 4 days of ripening at 20 – 24 ^{o}C temperature. Added freeze-dried celery products did not affect glutamic acid content.

12:30pm-1:30pm	**Lunch**

Afternoon, June 19, 2014 (Thursday)

SESSION–2 (ICNFS 2014&ICEEG 2014)

Venue: Rooms Plenum

Session Chair: Prof. Shafika A Zaki

Time: 1:30pm-3:50pm

A1022	Evolutions of β-carotene and Lycopene in a Natural Food Colorant from Gac (Momordica cochinchinensis Spreng) Arils during Drying **Yardfon Tanongkankit**, Thammanoon Sutthaphan, Jutarut Kaewmanas, Poonpat Poonnoy and Kanjana Narkprasom Maejo University *Abstract*—The use of a natural food colorant is recently of interest from the health benefit

	viewpoint. Gac aril has been reported to be a potential raw material for production of food colorant since it contains significant amounts of β-carotene and lycopene that are responsible for a yellow red color. However, drying which is an important step for a food colorant production may cause losses of those compounds in Gac aril. This study was aimed to investigate the effect of hot air drying temperature (60-80 ℃) on the evolutions and retention of β-carotene and lycopene in Gac aril. Color of the dried Gac aril was also determined. The results illustrated that both β-carotene and lycopene significantly degraded during drying. Higher drying temperature made higher degradation rate of β-carotene and lycopene. However, the drying temperature did not significantly affect the color of dried samples. Hot air drying at 60 ℃ of Gac aril was recommended for producing natural food colorant by providing the highest retention of β-carotene and lycopene.
A1024	Exclusive Breastfeeding & Non-Nutritive Sucking (Pacifier) Affect the Nutritional Status of Infants **Magda I. Hassan** Cairo University *Abstract*—Mothers' decision to practice both of breast-feeding and using pacifier or not is the most important decisions that have an impact on the child health. The aim of study was assessment the effect of feeding type and non-nutritive sucking activity on nutritional status of infants. Methods: Questionnaire was designed to assess nutritional status of infants (N=86) who came to outpatient clinic in Misr Al-Kadema Center for motherhood and child care, affiliated to Ministry of health in Egypt in 2011. Questionnaire sheet included socioeconomic characteristics, maternal obstetric history and initiation time of breastfeeding, type of feeding and using a pacifier. Results: Significant relationship could be noticed between weight, length, head circumference and type of feeding. Compared with no breast-feeding, exclusive breast feeding had lower weight, length and head circumference. Chi-square showed significant relationship between using pacifier and weight/length percentiles. The infants who use pacifiers were less weight /length percentiles.
A1025	Sanitary Practices, Nutritional and Health Status of Street Children in Matazu Local Government Area of Katsina State, Nigeria **Mercy Sosanya** and Adamu Ibrahim The Federal Polytechnic *Abstract*—This cross-sectional study assessed the sanitary practices, nutritional and health status of 105 street children in Matazu Local Government Area of Katsina State, using questionnaire, anthropometry and Food Frequency Questionnaire. Frequencies, percentages, means and standard deviations were computed using SPSS. 99(94.3%) of respondents were males, while 6(5.7%) were females, with mean ages of 13.6±2.3 years. Only 36(34.3%) used soap+water to wash their hands after using the toilet. 26(24.8%) and 14(13.3%) respondents respectively were moderately and severely stunted, while 24(22.9%) and 19(18.1%) were moderately and severely underweight respectively. No respondent (0%) consumed animal protein up to four times a week, while guinea corn (96.2%) and millet (94.3%) were consumed >4times per week. Headache (91.4%), fatigue (89.5%) and respiratory conditions, (82.9%) were the most frequently experienced illnesses. The sanitary habits, nutritional and health status of street children in Matazu are poor and need to be improved.

A1027	Potential of Biopigments from *Monascus purpureus* Went as Natural Food Colorant for Philippine Native Sausage (*Longganisa*) **Henry F. Mamucod** and Erlinda I. Dizon Philippine Rice Research Institute *Abstract*—Potential of *Monascus pigments* as substitute to sodium nitrite ($NaNO_2$) in Philippine native sausage, *longganisa*, was evaluated. Three pigment levels (1, 2, and 3%) were added and tested for their effects on the microbial, physicochemical and sensory properties of the product. *Monascus* pigments, regardless of concentration, showed good microbial inhibition against bacteria and yeast. Both *Monascus* pigments and $NaNO_2$ had no significant effect on the moisture content, titratable acidity, and water activity of the sausages. All Monascus-treated sausages received flavor ratings comparable with that of nitrite-treated samples. However, sausages treated with 2 and 3% *Monascus* pigments had pronounced off-flavor which resulted in their significantly lower over-all acceptability ratings. *Longganisa* added with 1% Monascus pigments received the highest over-all acceptability, with ratings comparable with that nitrite-treated sausage. Therefore, addition of *Monascus* pigments at 1% level could be a natural alternative to the use of nitrite in *longganisa*.
A1030	Dietary Fiber Extraction from Soy Sauce Residue **Lin Li**, Xiaowen Li, Zhenbo Xu, Bing Li College of Light Industry and Food Science, South China University of Technology *Abstract*—Dietary fiber was extracted from soy sauce residues by enzyme treatment and alkali solution. The effects of extraction temperature, concentration of alkaline, ratio of material to solution and **extraction** time on extraction yield were investigated. The extraction conditions were optimized by $L_9(3^4)$ orthogonal design. The results showed that the optimal conditions were under extraction temperature 80°C, the concentration of alkaline 4%, the extraction time 30 min, and solid-liquid ratio 1:12, which led to the yield as high as 65.31%. The water capacity of insoluble dietary fiber is 5.14 g/g, and swelling capacity of insoluble dietary fiber is 5.46 mL/g.
A1031	Influence of Lipid composition, Solid Fat Content and Temperature on Hardness of Margarines Zhili Liang, Lin Li, Zhenbo Xu, **Bing Li** College of Light Industry and Food Science, South China University of Technology *Abstract*—By studying the lipid composition, crystallization behavior on hardness of margarines at different temperatures, the results generally show that there is no linear correlation between the hardness and temperature, which is different from the customary view. On the basis of these results, the reasons of hardness change are discussed, including triacylglycerol (TAG) composition, solid fat content (SFC), the experimental results reveal that the temperature influences these factors. Hardness is controlled not solely by any one of the lipid composition, solid fat content, it is the result of combined effects of lipid composition, solid fat content.
A1032	Ultrasonic Field on The Sublethal Injury of *Saccharomyces cerevisiae* Cell **Zhenbo Xu**, Rong Zhou, Lin Li, Bing Li College of Light Industry and Food Science, South China University of Technology

	Abstract—This study aims to investigate the sublethal injury of *saccharomyces cerevisiae* cell caused by ultrasonic field with osmotic pressure selective plate method and preservation experiment. The absorbance of cell suspensions and preservation activity are studied for sublethal injury. According to the results, increase of intensity of ultrasonic field lead to higher extension of cell exudation and structure destruction, which indicated the positive correlation between intensity of ultrasonic field and degree of cell injury. Cellular damage and destruction of its structure may cause cell death. However, the rate of cellular injury was found to be less than 5% under high ultrasonic field, indicating an insignificant sublethal effect. In conclusion, treatment of ultrasonic field at high intensity may potentially aid in the non-thermal sterilization of food.
A1026	Effect of Ultrasonic Treatment on Efficiency of Membrane Clarification of Pomegranate Juice Morteza Aliasghari Aghdam, Reza Sharifanfar, **Hossein Mirsaeedghazi**, Mohammad Aboonajmi, and Mohammad Hossein Kianmehr University of Tehran *Abstract*—Creation of fouling phenomenon is the most important problem against the membrane clarification of fruit juice. Ultrasonic treatment was used to evaluate its effect on the membrane clarification of pomegranate juice. Two different ultrasonic treatments (ultrasonic bath and ultrasound transducer probe) were selected in current work. Clarification process was performed with mixed cellulose ester membrane with pore size of 0.22 μm at transmembrane pressure of 0.5 bar and feed flow rate of 17 ml/s. Results showed that volumetric concentration factor (VCF) increased at the membrane treatment in ultrasonic bath due to reduction of blocking index. Also application of ultrasound probe over the membrane surface can increase VCF; however application of ultrasound probe below the membrane surface prevents permeate flow and decreases VCF in membrane clarification of pomegranate juice.
N0013	The Role of Inland Wetlands in Food Security at Ede Wetlands, Southwestern Nigeria **Gasu Martin Binde** Osun State University *Abstract*—The study investigates the utilization of wetland resources in Ede region with a view to exploring them for agricultural production and food security. Data for the study was sourced from primary and secondary sources. The Global Positioning System (GPS) which equally served as a primary source of data was utilized for ground truthing and validation of potential Fadama sites identified by the Digital Terrain Model (DTM). Topographic map which served as secondary data was processed using geospatial techniques and the contours interpolated to create a Digital Terrain Model (DTM) to determine the most appropriate locations for Fadama activities. The results show that areas below 213.4m above sea level are the most appropriate sites for Fadama activities suitable for the cultivation of food crops such as rice; maize as well as for fish farming and market gardening. The study identified anthropogenic activities: pressure from increasing human population as a threat to wetlands existence and human survival especially low income earners. The study concluded that wetland resources potentials and utilisation have not been fully and properly harnessed to ensure food security and reduce the incidence of poverty in the study area.

E0001 poster	Biodiesel from Soybean Oil Transesterification Assisted by Ultrasonic Irradiation **José M. Encinar**, Gloria Martínez, Juan F. González, Nuria Sánchez, and Dolores Álvarez Extremadura University *Abstract*—Biodiesel has been produced by transesterification of soybean oil by methanol. This reaction, heterogeneous, only takes place in the interphase alcohol triglyceride. Low-frequency ultrasonic irradiation produces an emulsion of the two immiscible liquids, improving mass transfer and getting that the chemical reaction controls the kinetic of the process. This causes an increase of the reaction rate, decreasing time of reaction. A batch and a continuous process were carried out, using potassium hydroxide as catalyst. A Branson processor of 20 kHz was used in all of the experiments. In the batch process methanol:oil molar ratio (3:1 to 15:1), maximum temperature (70 and 100 ℃) and ultrasound amplitude (40 to 100%) were studied. In the continuous process, methanol:oil molar ratio (6:1, 12:1 and 15:1) and catalyst concentration (0.28 to 0.70 $g.mL^{-1}$) were evaluated. In the first process, MeOH:oil molar ratio influenced on the yield, while temperature did not exercise influence. Amplitude affected reaction rate, but the conversion achieved was similar after 15 minutes. In the continuous process, the MeOH:oil molar ratio influenced in the reaction, while the concentration of catalyst had a positive effect only to low residence times.
E0002 poster	Biodiesel Production from Castor Oil under Subcritical Methanol Conditions **Nuria Sánchez**, José M. Encinar, Gloria Martínez, and Juan F. González University of Extremadura *Abstract*—Biodiesel is a potentially sustainably renewable fuel for diesel engines; transesterification is the most used method to produce it and high quality vegetable oils are the most usual raw material. Non-edible vegetable oils such as castor oil can provide an alternative feedstock. In this work biodiesel was obtained by transesterification of castor oil with subcritical methanol; the reaction was carried out in an hermetic reactor at temperatures higher than methanol boiling point and with a small amount of potassium methoxide as catalyst. The effect of methanol:oil molar ratios were analyzed, observing that high proportion of alcohol is needed to reach high ester content, the best results were reached with 24:1 MeOH:oil molar ratio. Regarding catalyst concentration, 8.7 mM (0.12 wt%) were enough to achieve good results. A temperature of 150 ℃ and 1 h of reaction, at 10 bar, were the mildest conditions to reach an ester content higher than 90 wt %. The highest ester content, 94.7 wt %, was achieved at 220 ℃, 36 bar and 4 h of reaction time. Hence good quality biodiesel from castor oil can be produced in subcritical methanol conditions, using a small amount of basic catalyst.
E0004	Environmental Dilemma of Humic Substances: Being Adsorbents and Being Carcinogens **Esra Yel** and Gulnare Ahmetli Selcuk University *Abstract*—Humic materials can be classified as soluble in high pH, soluble in all pH's, and insoluble in all pH's (IHA). In this study, humic substances in the environment were discussed, and their different environmental contributions, either positive or negative, were investigated. Some humic substances help the water treatment while some others cause carcinogenic matter accumulation in water. This dilemma was discussed with different

	examples. In the first part of this study, IHA was used as adsorbent in removal of some metals, chemical oxygen demand (COD) and color from water. The results were presented together with literature results. IHA could adsorb various heavy metals in 10 to 300 mg/g capacity interval, while COD removal performance was 2270 mg/g. In the second part of the study, soluble humic matter in natural waters and disinfection by-products (DBP) formation upon chlorination of such waters were discussed. Humic fractions were important precusors of DBP's such as trihalomethanes (THMs) and haloacetic acids (HAAs). Depending on the water resource, the humic substances, THM and HAA formation potentials and types and quantities of the compounds may differ, but all are bioaccumulative and potentially carcinogenic. The study investigated the two different faces of humic substances in the environment.
E0005	Biosorption of Pb(II) Ion by Crosslinked Pectin-CMC with BADGE (Bisphenol A Diglycidyl Ether) through Reflux Method **B. Hastuti**, Mudasir, D. Siswanta, Triyono, and S. A. Lilis Sebelas Maret University *Abstract*—The aim of this study was to develop a procedure for preparing biosorbent from natural material pectin and chitosan. The method to prepare biosorbent Pectin-CMC-BADGE is established by using Reflux method. Pectin–carboxymethyl chitosan crosslinked with BADGE (bisphenol A diglycidyl ether) where BADGE was used as the crosslinking agen and chitosan was grafted with acetate to form carboxymetyl chitosan (CMC). The result of this study was biosorbent Pectin-CMC-BADGE could increased sorption capacity for remove heavy metal ions in waste water by adsorb lead (II) ion. The structure and the morphology of the resulting adsorbent were characterized by Fourier transform infrared spectroscopy (FT-IR) and scanning electron microscopy (SEM). The mass adsorbent adsorb Pb (II) was 15 mg with 94.78% of adsorption and adsorption capacity was 30.29 mg/g. Optimum contact time to adsorb Pb (II) was 60 minutes with 99.13% of adsorption and adsorption capacity was 44.33 mg/g. Optimum pH to adsorb Pb (II) was at pH 5 with 97.73% of adsorption and adsorption capacity was 45.03 mg/g.
E1006	Study of Heavy Elements and Radioactivity Concentrations in some Eye Cosmetics Commonly Used in Arabic Regions M. M. Sherif, **M. Orabi**, and O. R. Abdurahem Cairo University *Abstract*—Thirteen samples of eye cosmetics including five samples of artificial eye cosmetics and eight samples of traditional eyeliner (kohl) were collected from various Arabic markets, and analyzed using Inductively Coupled Plasma-Optical Emission Spectrometer (ICP-OES) to assess concentrations of the most toxic elements (arsenic (As), cadmium (Cd), mercury (Hg) and lead (Pb)), and High Purity Germanium detector (HPGe) to determine radioactivity concentrations of the natural radionuclides ^{238}U, ^{235}U, ^{226}Ra, ^{232}Th and ^{40}K. The average concentrations of the elements As, Cd, Hg and Pb are a bit high in some samples in a way that they might cause some harm to human health, while the average values of the activity concentrations for ^{238}U, ^{235}U, ^{226}Ra, ^{232}Th and ^{40}K are not that high. Annual absorbed amounts of heavy elements from daily applied kohl were calculated based on roughly assumption that about 50 % of the applied kohl is absorbed into the body. An appropriate

	simulation has been done for the eye using the MCNP code to estimate the dose rate of the lens of the eye as a result of using contaminated kohl.
E1009	Multivariate Statistical Analysis of Hydrochemistry of Saline Water-A Case Study: Sabkha Om LeKhialate (Tunisia) **Nesrine Nasri**, Rachida Bouhlila, and Ahmed Riadh National School of Engineering of Tunis *Abstract*—The hydrochemistry of the saline system in high arid environment is controlled by several processes including evaporation, water-rock interaction, precipitation /dissolution etc. Hydrochemical data of 80 wells from the catchment area of sabkha Oum leKhialate, southern Tunisia and 9 parameters (pH, TDS, Na^+, Ca^{2+}, SO_4^{2-}, Mg^{2+}, K^+, Cl^-, HCO_3^-) show that the abundance of major ions from the sabkha is as follows: Na>Ca>Mg>K and SO_4>Cl>HCO_3. Multivariate statistical analysis methods such us correlation analysis, principal component analysis (PCA) and hierarchical cluster analysis (HCA) were used to identify the geochemical processes controlling the chemistry of saline water in the catchment area of the sabkha. HCA reveals four major water groups (C1-C4). Samples of the sabkha from clusters C1, C2 to C3 have Na-SO_4-Cl, Na-SO_4 and Na-Cl-SO_4 water type respectively. Samples from C4 show Ca-HCO_3-SO_4-Cl water type are located in recharge area. Using PCA, two factors account for 72.69 % of the total variance of the data set. Results of statistical analysis reveal that the major source of sulfate sodium deposit is the process of evaporation, cationic exchange between Ca and Na in clay formation and mineral precipitation.
E1010	Simulation and Analysis of Small-Scale Solar Adsorption Cooling System for Cold Climate Karolis Januševičius, Giedrė Streckienė, and **Violeta Misevičiūtė** Vilnius Gediminas Technical University *Abstract*—In the current study, research on the performance characteristics of an adsorption cooling system supplied by solar energy is presented. The main task for the analyzed system was to ensure cooling load for the non-residential building in cold climate country. A 8.0 kW adsorption thermal cooling system was studied. The system got heat produced by evacuated tube solar collectors. The parametric simulation study was carried using a TRNSYS (Transient Systems Simulation) program to determine the influence of various parameters on the system performance. The dependencies of collector slope and the total absorber area on solar fraction, discarded energy, coefficient of performance, seasonal performance factor were studied. The highest solar fraction, coefficient of performance and seasonal performance factor values were obtained if the collector slope was approximately 30 degrees and the absorber area was 16 m^2 for the analyzed cases. The total primary energy consumption of the system was examined for various cases of primary energy factor for auxiliary heat and consumed electricity. On the basis of the results, it was proposed the expression of total primary energy consumption. The obtained results could be used for the recommendation preparations for decision makers to select a small scale solar cooling adsorption system.

3:50pm-4:10pm	**Coffee Break**

Afternoon, June 19, 2014 (Thursday)

SESSION–3 (ICBBS 2014)

Venue: Rooms Plenum

Session Chair: Prof. Edward Sazonov

Time: 4:10pm-6:10pm

C0002	Comparison of Various Sitting Postures on Pulmonary Function, Lumbar Curvature, and Comfort Evaluations Chun-Ting Li, Chih-Han Chang, Jheng-Hung Huang and **Kuen-Horng Tsai** Graduate Institute of Mechatronic System Engineering, National University of Tainan, Taiwan *Abstract*—This study aims to explore the effects on pulmonary function, lumbar curve, and comfort evaluations in the postures as slumped sitting, lumbar support sitting, sacrum support sitting, and slanting sitting. 10 healthy people were recruited to join this study. An experimental chair was innovated so that the regions corresponding to thoracic vertebrae, lumbar vertebrae, and sacrum were adjustable separately. The researchers then employed gas analyzers, goniometer, and comfort evaluation questionnaires to collect data and conduct statistic analyses. The results show that pulmonary function and comfort evaluation in sacrum support sitting posture appear to be substantially better than all the others. Regarding lumbar angle, lumbar support sitting posture results in a significant lordosis, and is closer to the lumbar curve in standing posture.
C0004	Intelligent Knowledge Management System for Distributed e-Home Healthcare U-Hou Choi, Jia-Li Ma, Ran Guo, **Ming-Chui Dong** University of Macau, China *Abstract*—With the functions of on-site multi-vital-signs acquisition, real-time transmission, diagnosis and detailed interpretation, an embedded-link e-home healthcare system on mobile devices brings lots of conveniences for prevention and detection of cardiovascular diseases (CVD). Due to the intrinsic source restriction in those devices, a backyard remote uplink, update and synchronize (UUS) system is imperative to manage the uplinked requests from local mobile devices and feedback promptly the update package. To guarantee the efficiency and availability of UUS when facing thousands of concurrent requests and user clients, an intelligent knowledge management system (KMS) becomes the most significant concern. In this paper, a dedicated customized knowledge base (KB) with simplicity, conformity, extensibility, and flexibility is proposed to release the burden on UUS by reduction of unnecessary help requests. In addition, an intelligent KB update scheme with delta-change and master-slave approach is pioneered to perform automatic rules update with minimum dataflow while ensuring the reliability and safety of overall system. Via the constructed KB, an intelligent diagnosis system is implemented to provide detailed diagnostic results as well as comprehensive pathological warning messages.
C0008	Finding the Core-Genes of Chloroplasts **Bassam Alkindy**, Jean-Fran ̧ois Couchot, Christophe Guyeux, Arnaud Mouly, Michel

	Salomon, Jacques Bahi University of Franche-Comté, France *Abstract*—Due to the recent evolution of sequencing techniques, the number of available genomes is rising steadily, leading to the possibility to make large scale genomic comparison between sets of close species. An interesting question to answer is: what is the common functionality genes of a collection of species, or conversely, to determine what is specific to a given species when compared to other ones belonging in the same genus, family, etc. Investigating such problem means to find both core and pan genomes of a collection of species, i.e. genes in common to all the species vs. the set of all genes in all species under consideration. However, obtaining trustworthy core and pan genomes is not an easy task, leading to a large amount of computation, and requiring a rigorous methodology. Surprisingly, as far as we know, this methodology in finding core and pan genomes has not really been deeply investigated. This research work tries to fill this gap by focusing only on chloroplastic genomes, whose reasonable sizes allow a deep study. To achieve this goal, a collection of 99 chloroplasts are considered in this article. Two methodologies have been investigated, respectively based on sequence similarities and genes names taken from annotation tools. The obtained results will finally be evaluated in terms of biological relevance.
C0014	Hierarchical Probabilistic Support Vector Machine for Detecting Cardiovascular Diseases **Mubo Chen**, Binbin Fu, Taichun Tang, Jiali Ma and Mingchui Dong University of Macau, China *Abstract*—32 Hemodynamic parameters (HDPs) derived from sphygmogram (SPG) and 5 physiological parameters (PPs) are widely used for cardiovascular diseases (CVDs) detection. All these parameters are divided to groups naturally for diagnostic usage, which conforms to doctors' clinical diagnosis procedure. The number and type of HDP&PP in groups are varied according to detecting different CVDs, in another word the grouping is disease-oriented, which leads to a bottleneck problem: how to construct a hierarchical high-efficient classifier to diagnose CVDs based on grouped HDPs & PPs? To tackle such a formidable problem, a hierarchical classifier HPSVM based on support vector machine with probabilistic outputs (PSVM) is proposed. Such formed classifier has good generalization ability with unique global solution even with small training dataset. It also conforms to the doctors' hierarchical diagnosis procedure and reduces the deduction complexity with high diagnostic accuracy. Site-measured datasets obtained from Beijing Changping Chinese Medicine Hospital are used for testing and the results verify the prospect of this technology with higher than 90% accuracy in detecting three typical and frequently encountered CVDs.
C0015	Noninvasive and Invasive Comprehensive Intelligent Cardiovascular Diseases Diagnosis in e-Home Healthcare **TaiChun TANG**, JiaLi MA, MuBo CHEN, MingChui DONG, ZhaoXiong FANG and LiChun LUO University of Macau, China *Abstract*—To release the burden of medical personnel and satisfy users with diversified backgrounds and requirements, a hierarchical intelligent cardiovascular diseases (CVDs)

	diagnosis system in e-home healthcare is pioneered to perform noninvasive and invasive comprehensive diagnosis with ranked levels and accuracies. As the top-level diagnosis and authoritative reference, the diagnostic results in upstream must be eminently high precise to support functionality of the overall system, yet it is woefully inadequate by only relying on the noninvasive multi-vital-signs employed in lower streams diagnosis. Tackling this, invasive blood test parameters (BTPs) extracted from routine blood test are exploited as complementary. In this paper, an intelligent BTPs diagnosis system is initiated and integrated to entire e-home healthcare. The dedicated frame-based medical database (DB) and knowledgebase (KB) provide the standard for BTPs related studies. An intelligent inference engine (IE) is constructed to perform integrative seamless diagnosis for home users. Experimental results validate the high performance of the proposed system with averaged diagnostic accuracy of 84.38% for 241 site-sampled CVDs records. With such an organic combination of noninvasive and invasive diagnosis, it provides a solid and reliable mainstay for the functionality of the entire system.
C0016	Increasing Microbial Biofuel Production by *In-silico* Comparative Genomic Studies **Gautham Subramaniam Ramakrishnan**, **Manali Mukund Kamath** and Vidya Niranjan Dayananda Sagar College of Engineering, India *Abstract*—Algal biofuels may be a viable alternative to fossil fuels; however, this technology must overcome a number of hurdles before it can be considered for use in the market and be broadly deployed. One of the major hurdles is the low fuel yields per unit of biomass. In this study, we aim to overcome this challenge by identifying several genes, responsible for increased lipid production, from numerous sources that can potentially increase the lipid synthesis in the autotrophic alga, *Chlamydomonas reinhardtii*. Using *in-silico* comparative genomics, we have shortlisted a total of 17 genes which, if incorporated into the genome of *Chlamydomonas reinhardtii* and overexpressed, could increase lipid production.
C0017	Identification of Mislabeled Samples and Sample Mix-ups in Genotype Data using Barcode Genotypes **Christian Theil Have**, Emil Vincent Appel, Jette Bork-Jensen, Niels Grarup and Torben Hansen Novo Nordisk Foundation Center for Basic Metabolic Research, Section of Metabolic Genetics, Copenhagen University, Denmark *Abstract*—Undetected mislabeled samples may affect the results of genotype studies, particular when rare genetic variants are investigated. Mislabeled samples are often not detected during quality control and if they are detected, they are normally discarded due to a lack of a reliable method to recover the correct labels. Here we describe a statistical method which given a few extra independent genotypes (barcode genotypes) detects mislabeled samples and recovers the correct labels for sample mix-ups. We have implemented the method in a program (named Wunderbar) and we evaluate the reliability of the method on simulated data. We find that even with only a small number of barcode genotypes, Wunderbar is capable of identifying mislabeled samples and sample mix-ups with high sensitivity and specificity, even with a high genotyping error rate and even in the presence of dependency between the individual barcode genotypes. To detect mislabeled samples we calculate the probability that the discordance between

	genotypes in the data and in the independent genotypes can be attributed to random (non-mislabeling) genotyping errors. To identify mix-ups we calculate the probability of identifying the set of identical genotypes between sample x and sample y by chance. Based on this we calculate a mix-up confidence score with penalization for introducing mismatches in the proposed new label and adjustment for independency among the genotypes. This confidence score is used to identify probable mix-ups.
C0020	Integrating Biological Databases in the Context of Transcriptional Regulatory Networks **Rafael Pereira** and Rui Mendes University of Minho, Portugal *Abstract*—Several studies show that biological knowledge is growing at a continuous rate and distributed among different databases, making the process of data integration a hard task to perform, because they have different structures, different ways of storing data and also different approaches to export information, and are usually developed to provide information for a specific organism. Due to the large amount of biological data, the process of data integration has been one of the major challenges in the field of bioinformatics as well as discovering information about Transcriptional Regulatory Networks (TRN). When using a single source, this task is not easy to perform since the source often lacks enough information for the successful completion of the task. Therefore it is necessary to find information in several databases in order to create a useful body of knowledge. This work presents a new approach of integrating data related with TRNs for the Escherichia coli by creating a new integrated data repository gathering information from KEGG, EcoCyc, Regulon and NCBI databases.
C1006	Localizing Uterus Region from Low-Resolution Ultrasonography Device Using Template Matching Method **Retno Supriyanti**, Iman Ardhi Pradana, Eko Murdyantoro, Haris B. Widodo Jenderal Soedirman University, Indonesia *Abstract*—Template matching method widely used in pattern recognition such face recognition as a part of cases in image processing field. However, although this method is widely used in image processing field, usually it is applied to digital images that have enough resolution. This paper will discuss about using template matching for noisy digital images produced by low-resolution ultrasonography device especially for localizing uterus region.
C1007	The Effect of Cadmium Absorption on Ghrelin and Malondialdehyde Levels in White Rats (*Rattus norvegicus*) **Triawanti** Medical Faculty of Lambung Mangkurat University, Indonesia *Abstract*—Cadmium is expected to affect the absorption of other nutrients and appetite through the competition with the nutrients, causing damage to cell membranes through lipid peroxidation reactions. Damaged intestinal cells may disrupt the secretion of one of digestive hormones, ghrelin, the orexigenic hormone. The purpose of this study was to analyze the effect of cadmium exposure on the levels of ghrelin and malondialdehyde (MDA) in rats (*Rattus norvegicus*). The study used post-test-only control group design, with 2 groups of

	white rats: control group (P0) was given placebo and treatment group (P1) was exposed to cadmium. Parameters measured were the levels of MDA and ghrelin. The results showed that there was no difference in body weights (p=0.057) and ghrelin concentrations (p=0.910) between the white rats in the control group and the treatment group. There were significant differences in the levels of MDA, the treatment group had a higher MDA level compared with control (p=0.001). It was concluded that the cadmium exposure for 4 weeks did not affect the secretion of ghrelin hormone and body weights of white rats, but might cause lipid peroxidation in white rats, as evidenced by the increased MDA level.
C1008	Weight of Evidence: Application in Tracking Changes in HIV Risk Profile Using 10 Year Annual Antenatal HIV Seroprevalence Data **Wilbert Sibanda** and Philip Pretorius North-West University, South Africa *Abstract*—A weight-of-evidence model based on antenatal HIV seroprevalence data is explored to study the effect of demographic characteristics on the risk of acquiring an HIV infection amongst pregnant women in South Africa. Antenatal data obtained from each pregnant woman contains a wealth of information in the form of demographic characteristics. In this research we use weights-of-evidence models (WOE) and information values (IV) as measures of the risk of acquiring an HIV infection to monitor changes in HIV risk over a period of 10 years from 2001 to 2010. The study demonstrated that the risk of acquiring an HIV infection amongst pregnant women in South Africa was higher for the younger women below the age of 28 during the early years of 2001 to 2005. However, during the subsequent years of 2006 to 2010, the risk dropped amongst the younger women with the simultaneous increase amongst the older women over the age of 28. Married women were found to be least at risk of acquiring an HIV infection, while widowed women were observed to be most at risk.
C1010	A Diffusive Model for Nanoparticle Penetration into Living Cells **Louise Martin**, **Sophie Collin**, Emeric Jeandupeux, Alexandra Deutsch, Anthony Zeitoun ECE Paris, France *Abstract*—Like any living species, Human kind has been exposed to nanoparticles during its entire existence. But the question of their toxicity has only been recently raised as a consequence of rapid growth of industrial activity. Nowadays, the impact of nanoparticles is not clearly known. For this reason Mathematics in Medicine Study Groups (M.M.S.G.) developed a mathematical model based on the different possible entries of nanoparticles into cells. To allow further studies on their toxicity, M.M.S.G. model has been here completed by introducing adapted equations of diffusion to represent its effects on nanoparticles penetration and accumulation inside cells. It is mainly shown that due to their size (100nm), nanoparticles diffusion time is extremely short compared to characteristic system evolution time. As a consequence, living cells are not shielded against high nanoparticle bursts which enter almost instantaneously inside and equalize over all cell domain. More favourable situation could only be expected with much larger nanoparticle size.

7:00pm	**Dinner**

Morning, June 20, 2014 (Friday)

Academic Official Visit

Time: 9:00am-11:00am

The Academic Official Visit will start at 9:00am. Please arrive at the lobby at 9:00am. We will leave for DTU National Food Institute on time. The Academic Official Visit will last for two hours. Since this activity is free of charge, we do not provide lunch or dinner on that day (20 June). Thank you for your understanding!

http://www.food.dtu.dk/english

Conference venue

CABINN Scandinavia Hotel

https://www.cabinn.com/en/hotel/cabinn-scandinavia-hotel

Hotel manager: Helle S. Røber
conference@cabinn.com
Phone: +45 3520 9981
Phone: +45 3246 5707

PS: Please mention the conference name when you reserve the hotel room.

APCBEES FORTHCOMING CONFERENCES

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

DATE	NAME		PUBLICATION
Sep 15-16, 2014 Paris, France	**ICBEE 2014**	2014 6th International Conference on Chemical, Biological and Environmental Engineering (ICBEE 2014) **http://www.icbee.org/**	APCBEE Procedia (Journal under Elsevier, ISSN: 2212-6708)
	ICECS 2014	2014 7th International Conference on Environmental and Computer Science (ICECS 2014) **http://www.icecs.org/**	International Journal of Modeling and Optimization (IJMO, ISSN:2010-3697)
	ICBEM 2014	2014 4th International Conference on Biotechnology and Environmental Management (ICBEM 2014) **http://www.icbem.org/**	Journal of Life Sciences and Technologies (JOLST, ISSN: 2301-3672) Or Volume of Journal (IPCBEE, ISSN: 2010-4618)
Sep 27-28, 2014 Bali, Indonesia	**ICREE 2014**	2014 2nd International Conference on Renewable Energy and Environment (ICREE 2014) **www.icree.net/**	Journal of Clean Energy Technologies (JOCET, ISSN: 1793-821X)
	ICCAE 2014	2014 2nd International Conference on Civil and Architecture Engineering (ICCAE 2014) **www.iccae.net/**	Volume of Journal (IPCBEE, ISSN: 2010-4618)
	ICBMS 2014	2014 2nd International Conference on Biological and Medical Sciences (ICBMS 2014) **www.icbms.org/**	Journal of Medical and Bioengineering (JOMB, ISSN: 2301-3796)
Oct 8-9, 2014 Jinju, South Korea	**ICAAS 2014**	2014 5th International Conference on Agriculture and Animal Science (ICAAS 2014) **http://www.icaas.net/**	Journal of Advanced Agricultural Technologies (JOAAT, ISSN:2301-3737)
	ICEBS 2014	2014 4th International Conference on Environment and BioScience (ICEBS 2014) **http://www.icebs.org/**	APCBEE Procedia (Journal under Elsevier, ISSN: 2212-6708)
	ICAFS 2014	2014 International Conference on Advances in Food Sciences(ICAFS 2014) **http://www.icafs.org/**	Volume of Journal (IPCBEE, ISSN: 2010-4618)
Oct 29-30, 2014 California, USA	**ICBEC 2014**	2014 5th International Conference on Biology, Environment and Chemistry (ICBEC 2014) **www.icbec.org/**	Volume of Journal (IPCBEE, ISSN: 2010-4618)
	ICPBS 2014	2014 2nd International Conference on Pharmaceutical and Biological Sciences (ICPBS 2014) **www.icpbs.com/**	Journal of Medical and Bioengineering (JOMB, ISSN: 2301-3796)

	ICSEA 2014	2014 2nd International Conference on Sustainable Environment and Agriculture (ICSEA 2014) **www.icsea.org/**	Volume of Journal (IPCBEE, ISSN: 2010-4618)
Nov 12-13, 2014 Auckland, New Zealand	**ICFAS 2014**	2014 2nd International Conference on Food and Agricultural Sciences (ICFAS 2014) **http://www.icfas.org/**	Volume of Journal (IPCBEE, ISSN: 2010-4618)
	ICMEB 2014	2014 2nd International Conference on Medical, Environmental and Bio-technology (ICMEB 2014) **http://www.icmeb.org/**	Journal of Medical and Bioengineering (JOMB, ISSN: 2301-3796)
	ICEPP 2014	2014 2nd International Conference on Environment Pollution and Prevention (ICEPP 2014) **http://www.icepp.org/**	International Journal of Environmental Science and Development (IJESD, ISSN:2010-0264)
Nov 29-30, 2014 Mauritius	**ICCEN 2014**	2014 3rd International Conference on Civil Engineering (ICCEN 2014) **www.iccen.org/**	Volume of Journal (IPCBEE, ISSN: 2010-4618)
	ICECB 2014	2014 3rd International Conference on Environment, Chemistry and Biology (ICECB 2014) **www.icecb.org/**	Volume of Journal (IPCBEE, ISSN: 2010-4618)
	ICFSH 2014	2014 International Conference on Food Sciences and Health (ICFSH 2014) **www.icfsh.org/**	Journal of Advanced Agricultural Technologies (JOAAT ISSN: 2301-3737)
Dec. 13-14, 2014, Kuala Lumpur, Malaysia	**ICESR 2014**	2014 International Conference on Environmental Systems Research (ICESR 2014) **www.icesr.org**	APCBEE Procedia (Journal under Elsevier, ISSN: 2212-6708)
	ICLSE 2014	2014 3rd International Conference on Life Science and Engineering (ICLSE 2014) **www.iclse.org**	Journal of Life Sciences and Technologies (JOLST, ISSN: 2301-3672)
	ICFB 2014	2014 3rd International Conference on Future Bioengineering (ICFB 2014) **www.icfb.org**	Volume of Journal (IPCBEE, ISSN: 2010-4618)
Dec. 27-28, 2014, Phuket, Thailand	**ICABT 2014**	2014 2nd International Conference on Agriculture and Biotechnology (ICABT 2014) **www.icabt.org**	Volume of Journal (IPCBEE, ISSN: 2010-4618)
	ICESB 2014	2014 4th International Conference on Environment Science and Biotechnology (ICESB 2014) **www.icesb.org**	APCBEE Procedia (Journal under Elsevier, ISSN: 2212-6708)
	ICCSE 2014	2014 3rd International Conference on Chemical Science and Engineering (ICCSE 2014) **www.iccse.org**	International Journal of Chemical Engineering and Applications (IJCEA, ISSN:2010-0221)

Welcome to submit papers or participate in our upcoming conferences.

Note

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