2015 APCBEES MADRID CONFERENCES ABSTRACT

2015 4th International Conference on Environment, Energy and Biotechnology (ICEEB 2015)
2015 4th International Conference on Chemical and Process Engineering (ICCPE 2015)
2015 5th International Conference on Asia Agriculture and Animal (ICAAA 2015)

Madrid, Spain

June 15-16, 2015

Catalonia Gran V á

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2015 APCBEES Madrid Conferences Introduction

Welcome to CBEES 2015 conferences in Madrid, Spain. The objective of the Madrid, Spain conferences is to provide a platform for researchers, engineers, academicians as well as industrial professionals from all over the world to present their research results and development activities in Environment, Energy and Biotechnology, Chemical and Process Engineering, and Asia Agriculture and Animal.

2015 4th International Conference on Environment, Energy and Biotechnology (ICEEB 2015)

❄ **Paper publishing and index:** ICEEB 2015 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, CNKI, WorldCat, Google Scholar, Cross ref and sent to be reviewed by Compendex and ISI Proceedings.

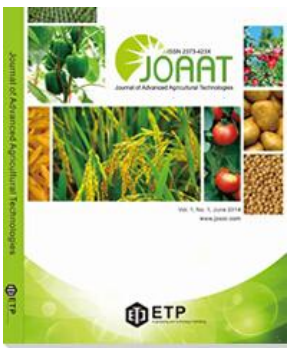
❄ **Conference website and email:** http://www.iceeb.org/; iceeb@cbees.net.

2015 4th International Conference on Chemical and Process Engineering (ICCPE 2015)

❄ **Paper publishing and index:** ICCPE 2015 papers will be published in the International Journal of Chemical Engineering and Applications (IJCEA, ISSN:2010-0221), and all papers will be included in the Engineering & Technology Digital Library, and indexed by WorldCat, Google Scholar,Cross ref, ProQuest and sent to be reviewed by Ei Compendex and ISI Proceedings.

❄ **Conference website and email:** http://www.iccpe.org/; iccpe@cbees.org.

2015 5th International Conference on Asia Agriculture and Animal (ICAAA 2015)



❄ **Paper publishing and index:** ICAAA 2015 papers will be be published in the Journal of Advanced Agricultural Technologies (JOAAT ISSN: 2301-3737), and be included in Ulrich's Periodicals Directory, Google Scholar, Engineering & Technology Digital Library, Crossref and Electronic Journals Digital Library and sent to be reviewed by EI Compendex and ISI Proceedings.

❄ **Conference website and email:** http://www.icaaa.org/; icaaa@cbees.org.

Presentation Instruction

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 shall be copied to the Conference Computer at the beginning of each Session)

Duration of each Presentation (Tentatively):

Regular Oral Presentation: about **10** Minutes of Presentation and **2** Minutes of Question and Answer
Keynote Speech: **35** Minutes of Presentation and **5** Minutes of Question and Answer

Instructions for Poster Presentation

Materials Provided by the Conference Organizer:

The wall to put poster

Materials Provided by the Presenters:

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

Best Paper Award

One best paper will be selected from each oral presentation sessions, and the Certificate for Best Papers will be awarded at the end of each session on June 15&16, 2015.

Dress code

Please wear formal clothes or national representative of clothing.

Keynote Speaker Introduction

Keynote I

Prof. Gabriel Real Ferrer

Environmental Law at University of Alicante, Spain

Topic: "Environmental Law as an Instrument to Achieve Sustainability"

Education

Degree in Law, University Alicante, Spain, 1983-2000

Doctor of Philosophy in Law, University Alicante, Spain, 1989-2000

Career

Professor, law University Alicante, since 1983, secretary, law faculty, 1986—1989, director, department public legal studies Spain, 1990—2002, director, Doctor of Philosophy program environmental law, since 1993, assistant director, Institute Water Environmental Scis., since 2000; guest professor Limoges University, France, since 2006; Member, Spanish committee sports discipline Government Kingdom Spain, Madrid, 1990—1993, executive adviser, council sports, 1993—1996; member Doping Committee Council Europe, Paris, 1993—1996; advisor, supporting actions eastern countries Council Europe, Strasbourg, France, 1994; advisor, environmental aspects International Olympic Committee, Lausanne, Switzerland, 1994—1995; Spanish expert, project Euroathlon The second European Union, Brussels, 1996—1997, director, study environmental requirements regional American markets, 1996—1998; scientist, director, World Congress Sports Environment IOC Spanish Council Sports, Barcelona, 1996; Editor: (book) Integración Económica y Medio Ambiente en América Latina; author: Derecho Público del Deporte, El Radón; contributor articles to professional journals.

Keynote II

Prof. Pedro Joaquín Gutiérrez-Yurrita
Instituto Politecnico Nacional, Mexico

Topic: "The Two Perspectives of the Climate Change: Social vs. Scientific"

Education

Jul 2007 – at present University of Alicante, Spain CANDIDATE TO PH.D. ON ENVIRONMENTAL LAW, Alicante, Spain

Jan 2006 – Jul 2007 University of Alicante, Spain, MASTER IN ENVIRONMENTAL LAW AND SUSTAINABILITY, ENVIRONMENTAL LAW Alicante, Spain

Jan 1994 – Jul 1997 Autonomous University of Madrid, Spain, PH. D., BIOLOGICAL SCIENCES, Madrid, Spain

Jun 1990 – Sep 1993 National Autonomous University of Mexico, MASTER IN SCIENCES, MANAGEMENT OF NATURAL RESOURCES, Mexico City, Mexico

Jun 1986 – Jun 1990 National Autonomous University of Mexico, COLLEGE / UNDERGRADUATE, BIOLOGY, Mexico City, Mexico

Research Experience

Jan 2015 – May 2015 Visiting research-professor, University of Alicante, Department of State Legal Studies, Alicante, Spain

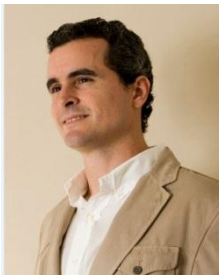
Jun 2009 – at present Full time professor, National Polytechnic Institute, Interdisciplinary Centre for Research and Studies, on Environment and Development, México

Jan 1997 – Dec 1997 Post-doctorate research, Autonomous University of Madrid, Department of Ecology, Madrid, Spain

Project: Ecological impact and management of Red swamp crayfish in Tenerife, (Canary Island, Spain)

Jan 1998 – May 2007 Full time professor, Autonomous University of Queretaro, Faculty of Natural Sciences, Santiago de Querétaro, Mexico

Keynote III



Prof. IGNACIO ACOSTA GARCÍA
School of Architecture, University of Seville, Spain

Topic: "Daylighting as a Natural Source to Provide Energy Saving in Buildings"

06.2004

Degree: Architect.

Organization: School of Architecture. University of Seville.

Specialty: Building construction.

06.2012

Doctor's Degree: PhD from the University of Seville.

Title of the thesis: Daylight in architecture. Design criteria of skylights.

Qualification: cum laude.

Thesis directors: Jaime Navarro Casas, PhD, Juan José Sendra Salas, PhD.

Committee Chairman: Alberto Campo Baeza, PhD.

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

2006 - 2014

Full time lecturer of the school of architecture at the University of Seville.

Department: Building Department.

2012 - 2013

Professor of the Master of Project Installations in Architecture, MPIA, in Seville.

Keynote IV

Prof. Byoung Ryong Jeong
Department of Horticulture, College of Agriculture & Life Science,
Gyeongsang National University, Korea

Topic: "Enhanced Tolerance of Horticultural Plants to Abiotic and Biotic Stresses by Si"

Field of Specialty: Floriculture, Protected horticulture, Plant factory, Transplants (Micropropagated & Plug) & Hydroponics

Education:

1977~1981. BS (Horticulture), Gyeongsang National University, Korea.

1981~1983. MS (Stress physiology), Seoul National University, Korea.

1986~1990. PhD (Nitrogen nutrition in bedding plants), Colorado State University, USA.

Major Professional Experience & Titles:

1990~1992. Postdoctoral Fellow, Univ. of Missouri-Columbia (USA), Water relations

1992. Japanese Society for the Promotion of Science Postdoctoral Fellow, Chiba University (Japan), Environ. control in micropropagation

1992~present, Lecturer-Professor, GNU, Floriculture, Plant Tissue Culture, & Horticultural Production Technology; Horticulture department chairman, GNU (1995-1997; 2004-2007; 2009-2010); Hoticultural professor in charge of Agricultural Managerial Courses, GNU (1994-1999; 2000-2001; 2009-2010); Director, Education & Research Farm of GNU (2001-2003); Associate Dean of College of Agriculture & Life Science, GNU (2005-2006).

1997~2012. Editor, J. Kor. Soc. Hort. Sci.; J. Bio-Environ. Control; J. Kor. Flower Res. Soc.

2001. Training Course on Tissue Culture held at Taiwan Agriculture Research Institute and organized by Asian Productivity Organization

2006~2009. Visiting Professor. Yangtze Delta Region Institute of Tsinghua University, Zhejiang, China

1999~2001. Editor-in-chief. J. Kor. Hydroponic Soc.

2002~2004. Editor-in-chief. J. Bio-Environ. Control

2003~2004. Visiting Professor. Department of Environmental Horticulture, University of California-Davis, USA

2006~2008. Editor-in-chief. Flower Research J.

2008~2009. President , Korean Soc. Plug Seedling Research

2009~2010. Secretary General, Korean Soc. Hort. Sci.

2013~present. Vice President for Publication & Editor-in-chief of the journal 'Horticulture, Environment, and Biotechnology', Korean Soc. Hort. Sci.

2014. 9~present. Dean. College of Agriculture and Life Sciences, Gyeongsang National University, Jinju, Korea

Current Research Interest & Topics:

Horticultural and medicinal crop production in plant factory systems

Organogenic and somatic embryogenic micropropagation

Substrate development and hydroponic solution recycling

Silicon as a nutrient for horticultural crops

Propagation and cultivation of roses

Contro

Brief Schedule for Conferences

June 15, 2015 (Monday) 9:30~18:00 Arrival and Registration, Keynote Speeches, and Conference Presentations
Venue: Before Conference Room-El Capricho (Level 1) Arrival and Registration 9:30~12:30
Venue: Conference Room-El Capricho (Level 1) Opening Remarks (Prof. Pedro Joaqu ń Guti érrez-Yurrita) 13:30~13:40 Keynote Speech I 13:40~14:20 Keynote Speech II 14:20~15:00 Coffee Break & Photo Taking 15:00~15:20 Session 1: 15:20~18:00 14 presentations (1 poster)—"Environmental Science" Topic (ICEEB 2015)
June 16, 2015 (Tuesday) 8:30~18:00 Arrival and Registration, Keynote Speeches, and Conference Presentations
Venue: Conference Room-G üell A (Level 1) Opening Remarks (Prof. Byoung Ryong Jeong) 8:30~8:40 Keynote Speech III 8:40~9:20 Keynote Speech IV 9:20~10:00 Coffee Break & Photo Taking 10:00~10:20 Session 2: 10:20~12:30 16 presentations (5 posters)—"Chemical Engineering" Topic (ICCPE 2015)
Lunch: 12:30~13:30 **Venue: Hotel Restaurant**
Venue: Conference Room-G üell A (Level 1) Session 3: 13:30~15:55 12 presentations—"Agricultural Science" Topic (ICAAA 2015) Coffee Break & Photo Taking 15:55~16:10 Session 4: 16:10~18:00 9 presentations—"Environment and Food Science" Topic (ICEEB&ICCPE&ICAAA 2015)
Dinner: 18:30 **Venue: Hotel Restaurant**
June 17, 2015 (Wednesday) 9:30~18:00 Visit and Tour

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

Detailed Schedule for Conferences

Morning, June 15, 2015 (Monday)

Venue: Before Conference Room-El Capricho (Level 1)

9:30-12:30	**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 best paper will be selected from each oral presentation sessions, and the certificate for best papers will be awarded at the end of each session on June 15&16, 2015.

Afternoon, June 15, 2015 (Monday)

Venue: Conference Room-El Capricho (Level 1)

13:30-13:40		**Opening Remarks** Prof. Pedro Joaqu ń Guti érrez-Yurrita Instituto Politecnico Nacional, Mexico
13:40-14:20		**Keynote Speech I** Prof. Gabriel Real Ferrer Environmental Law at University of Alicante, Spain Topic: "Environmental Law as an Instrument to Achieve Sustainability"
14:20-15:00		**Keynote Speech II** Prof. Pedro Joaqu ń Guti érrez-Yurrita Instituto Politecnico Nacional, Mexico Topic: "The Two Perspectives of the Climate Change: Social vs. Scientific"
15:00-15:20	**Coffee Break & Photo Taking**	




SESSION–1 (ICEEB 2015-14 presentations)

Session Chair: Prof. Gabriel Real Ferrer

Time: June 15, 2015 15:20-18:00

Venue: Conference Room-El Capricho (Level 1)

C0002	The Improvement Methods of Pore Pressure Prediction Accuracy in the Central Canyon in Qiongdongnan Basin **Zijian Chen**, Jingen Deng, Baohua Yu, Qiang Tan, and Zhuo Chen China University of Petroleum, China *Abstract*—The abnormal overpressure developed in the Central Canyon in Qiongdongnan Bain and the drilling is of a high risk. In order to improve the pore pressure prediction accuracy, the responses of the logging data for different abnormal overpressure causes are discussed. The acoustic velocity and the formation density both decrease during the loading process. However, the acoustic velocity reduces but the formation density remains unchanged during the unloading process. Then a judgment method of the abnormal overpressure causes based on the acoustic-density crossplot is proposed. By this means, the choosing of appropriate prediction model is more theoretical. On the other hand, a new conversion method of the pore pressure test results of the drilled well is also put forward to reduce the prediction error. These methods are applied in the Central Canyon in Qiongdongnan Basin. The results show that the overpressure of Huangliu and Yinggehai formation is controlled by the undercompaction which belongs to loading. Meishan and Sanya formation are dominated by the combination of undercompaction, hydrocarbon generation and aquathermal expansion, where the loading and unloading both happens. Lingshui and Yacheng formation is in the control of the hydrocarbon generation which belongs to unloading. The application of a pre-drill well indicates that these methods greatly improve the prediction accuracy and guide the drilling design.
C0006	Photoelectric Characteristics and Photodegradation Efficiency of Nanomolecular Sieve for VOCs Chiu-Hsuan Lee, Je-Lueng Shie, **Yen Li**, Ka-Iat Chau, and Ching-Yuan Chang National I-Lan University, Taiwan *Abstract*—Photocatalytic oxidation is believed to be the most important technology to eliminate volatile organic compounds (VOCs) in recent studies, however, the molecular sieve is seldom considered as a material from this application. The purpose of this study is to investigate the feasibility of the applications of the photoelectric material (PEM) to the removal of air pollutants, thereafter, the photoelectric characteristics to be the PEM for photoelectrochemical solar cell (PECSC). One of the commercially nanomolecular sieve of SBA-15 and one of the

	syntheses MOM-2 were used as PEM at the hybrid system of a photodegradation reactor in the use of different light sources (fluorescent lamp and UV light) radiation. The feasibility was investigated on the removal of VOCs from air pollution, taking toluene as a model compound. Meanwhile, SBA-15 and OMS-2 were used as the electrodes of PECSC to test the open-circuited output voltage (V_{oc}), short-circuited output current (J_{sc}), fill factor (FF) and maximum output power (P_{max}) and also be carried out the characteristic analysis of SBA-15 and OMS-2 using BET, NMR, SEM, XRD, XPS, FTIR and UV-Vis. The operation parameters and influential factors, for example, the temperature of reactor, intensity of light radiation, fabrication method of OMS-2, coating type, loading mass, humidity, initial concentration, etc., were examined in order to find the optimum conditions for the most effective treatment method.
C0007	The Interaction between Humic Substances and Metals, Depending on Structure and Properties of Humic Substances **Diana Dudare** and Maris Klavins University of Latvia, Latvia *Abstract*—It has been widely studied recent as well as historic accumulation of elements in peat profiles depending on intensity of anthropogenic pollution and thereby peat profiles serve as archives for research of environmental change. Peat ability to accumulate major and trace elements depends on the character of element supply, potency of metal ions to bind functionalities in the peat structure, pH reaction, oxygen presence, presence of complexing compounds, inorganic ions and many other factors. It has been hypothesized, that the main factor affecting metal accumulation in peat profile are humic acids (HA). Major and trace element presence in peat are of importance as an indicator of peat genesis and organic matter humification processes and for industrial use of peat. Trace element accumulation in peat profiles has been widely used to reconstruct changes of human pollution and track down sources and characterize intensity of anthropogenic pollution.
C0011	Microcosms as an Ecological Tool to Assess the Environmental Effect Caused by Introduced Species in Temporary Wetlands **Pedro Joaquin Gutierrez-Yurrita**, Maria Ilh éu, Jo ão Bernardo, and Carlos Montes National Polytechnic Institute, Interdisciplinary Center for Research and Studies on Environment and Development, Mexico *Abstract*—Microcosms are small-sized constructed ecosystems that are used as tool for ecological research focused in understanding natural ecosystem functioning and how human activities disturb some ecological processes at different spatial and temporal scales. The many major environmental changes in a system does not allow in fact performing experiments with microcosms, so that studies of trial and error are common and statistical analysis is through the theory of pseudo-experimentation. In this paper we describe different microcosm experiments used to examine the impact of introduced red swamp crayfish (*Procambarus clarkii*) at different densities in biological communities (aquatic macrophytes, algae and macroinvertebrates) in a temporary freshwater wetland. Through accumulation of data from five different the

	trials we could gain insight into the environmental impact of *P. clarkii*. Crayfish consume all type of macrophytes and algae, but especially the most abundant algae, *Chara connivens*. Final macroinvertebrates density (ind/liter) was reduced about 58% of the initial measure; the specific composition of the macroinvertebrates community also declined considerably as a result of the crayfish. Use microcosm for understanding the ecological functioning of aquatic systems subject to high environmental variations is very important, but it requires patience and dedication to complete them and have reliable results.
C0013	Comparison of Acid and Basic Thermo-Chemical Treatments in the Production of Adsorbents Based on Corncobs. I: Kinetics Study and Adsorbent Characterization Pablo Rocha, Leandro Oliveira, and **Adriana Franca** Universidade Federal De Minas Gerais, Brazil *Abstract*—Corncobs were evaluated as a raw material in the production of adsorbents for phenol removal from aqueous solutions. A comparative evaluation of acid and basic activating agents is presented. There were differences in both physical characteristics and adsorption performance depending on the activating agent used. Acid activation provided an adsorbent with higher porosity and that was faster and more efficient in terms of phenol removal than that from basic activation. The pseudo second-order model, regardless of the adsorbent, satisfactorily described adsorption kinetics. Adsorption tests showed that both the prepared adsorbents presented satisfactory adsorption performance, confirming that this type of waste material is a suitable candidate for use in the production of adsorbents, with acid activation providing a more efficient adsorbent for phenol removal than basic activation.
C0014	Flow Assessment of Brunei River due to the Impact of Climate Change **Shahriar Shams** and Rozeana Hj Md. Juani Institut Teknologi Brunei (ITB), Brunei Darussalam *Abstract*—Though Brunei Darussalam is a small country, it has the highest percentage of energy usage per capita as well as the largest carbon footprints of 22.9 metric tons per capita in the world. High emission followed by extreme rainfall resulting from climate change is likely to create challenges to manage increased river flow causing floods. The number of wet days has increased by 0.16 days per year based on the analysis of last 45 years precipitation data. Over 115 cases of flooding and 105 landslides were reported in the year 2014 alone. The watershed of Brunei River is low-lying and swampy; consist of mangrove areas extending 10 km downstream to the mouth of the Brunei River. The effects of varying water depth and tides create a complex zone, an excellent habitat for various fish species particularly cat fish and tilapia. Thus, recognizing the potential threat from flooding altering the flow pattern, the present research focuses to assess the impacts of climate change of Brunei River's flow for the next 20 years. A computer-based modeling tool, WEAP is used to simulate the river flow based on the climatic data, land use change and potential growth of industries.
C0015	Analysis and Estimation of Tourism Climatic Index (TCI) and

	Temperature-Humidity Index (THI) in Dezfoul **Elham Mubarak Hassan**, Katayon Varshosaz, and Nasreen Eisakhani Islamic Azad University, Iran *Abstract*—Formulating the control of emissions from the incinerators in order to properly apply the incinerators in Iran and reaching a good level of standard of air pollution is the main purpose of the present paper. So, an industrialized city like Tehran was selected and different factors of meteorology and air pollution were studied in that city. Then the information about the standard and control of emissions from the incinerators in other countries like US, India and Turkey was studied and finally, by considering those standards and controls of other countries and based on comparing those factors and conditions with those in Iran, a schema has been offered for controlling the emissions of incinerators.
C0016	Comparison of Acid and Basic Thermo-Chemical Treatments in the Production of Adsorbents Based on Corncobs. II: Equilibrium Study and FTIR Analysis Pablo Rocha, **Leandro Oliveira** and Adriana Franca Universidade Federal De Minas Gerais, Brazil *Abstract*—Corncobs were evaluated as raw material in the production of adsorbents for phenol removal from aqueous solutions. A comparative evaluation of acid and basic activating agents is presented. There were differences in both surface chemistry makeup and adsorption performance depending on the activating agent. Acid activation provided an adsorbent with better adsorption capacity for phenol. Adsorption tests showed that both the prepared adsorbents presented adsorption capacities that were higher or similar to those of commercially available activated carbons as well as other adsorbents produced from agricultural residues, confirming that this type of waste material is a suitable candidate for use in the production of adsorbents.
C0017	Control of Output Pollutants Emission from the Incinerators in Iran for Decreasing Air Pollution **Katayoon Varshosaz** and Elham Mobarak Hassan Islamic Azad University, Ahvaz Branch, Iran *Abstract*—Formulating the control of emissions from the incinerators in order to properly apply the incinerators in Iran and reaching a good level of standard of air pollution is the main purpose of the present paper. So, an industrialized city like Tehran was selected and different factors of meteorology and air pollution were studied in that city. Then the information about the standard and control of emissions from the incinerators in other countries like US, India and Turkey was studied and finally, by considering those standards and controls of other countries and based on comparing those factors and conditions with those in Iran, a schema has been offered for controlling the emissions of incinerators.
C1002	Numerical Simulation of Airflow Distribution in Electrostatic-Fabric Integrated Precipitator **Chaofan Sun**, Xinglu Yu, Hongkai Liao, Zehong Peng, Xinfeng Long, and Bo Lou

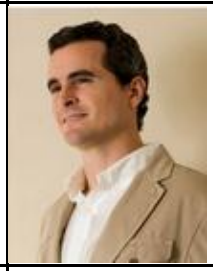
	Electric Power Research Institute of Guangdong Power Grid Corp., CSG, China *Abstract*—This paper focus on the airflow distribution in the Electrostatic-Fabric Integrated Precipitator（EFIP）. 3-D structure of 600MW EFIP was established and numerical simulation method was used. Airflow distribution was studied by changing the number of flow deflector and the structure of deflectors. A κ-ε model was used in the simulation. At the same time, the boundary of bags were defined as the Porous-jump and a appropriate permeability was defined. The simulation results shown that: when three flow deflectors were placed with a suitable opening rate, the airflow distribution was uniform. In another word, the mean velocity was 0.728 m/s and the mean square velocity is 0.2799, at the same time, the speed of airflow in the fabric area was 0.6m/s. The numerical simulation results were reasonable and could be used as the reference to the designing of EFIP.
C1005	A State of Art for Using Double Skin Fa çade in Hot Climate **Soad Aokhamis Mousavi** and Halil Zafer Alibaba Eastern Mediterranean University, North Cyprus *Abstract*—One of the most remarkable methods of building, especially in hot climates, helping in having pleasurable life, is designing double skin fa çades. Specifically about the climate properties, it is one of the sustainable building design and construction techniques, from climate properties point of view. Undoubtedly, to have a sustainable design, it is necessary for the architect/ designer of the buildings, to be cognizant about the construction environment's characteristics, to employ the sustainable strategies properly. In this regard, one of the suitable design method double skin fa çade, in which the building is design in a two layered (two skins) form, with flowing air between the layers, providing an energy efficient and sustainable system. Therefore this study has gone through the advantages and disadvantages of these systems in hot climates in the literatures, in addition to studying the screening devices and ventilation systems in these climates. It is found that this strategy is suitable in hot climates, where gaining heat is reduced dominantly. What is aimed in this study is to provide an investigation about building the double skin fa çades in hot climate areas, in terms of energy efficiency, the previously published researches, ideas of authors, suggesting the best-resulting analysis about using this approach.
C2001	Experimental Study of Pressure Waves on Transmission Speed and Energy Loss in the Fracturing Fluid **Diguang GONG**, Zhanqing QU, Tiankui GUO China University of Petroleum, China *Abstract*—As a new mean to increase oil and gas production, radial well hydraulic fracturing technology has been carried out in Jiangsu, Shengli, Liaohe Oilfield and has made gratifying achievements. If there are natural fractures or cemented layers locating in distal end of radial wells, artificial fracture initiation point, which is located in natural fractures of the distal end of radial wells or near-wellbore area, can

	be determined by pressure wave velocity of fracturing fluid and radial borehole pressure loss. The Laws of fracturing pressure wave transmission is still unknown .To solve the problem which has been mentioned, the pressure wave's transmission speed and energy losses of hydroxypropyl guar gum fracturing fluid, clean fracturing fluid and foam fracturing fluid were measured. In addition, univariate analysis was carried out. Experimental results show that there is a big difference of pressure wave velocity in different types of fracturing fluid. The pressure wave propagation velocity in hydroxypropyl guar gum fracturing fluid is fastest (about 1539.6m/s). The propagation velocity of cleaning fracturing fluid is a little slower (about 1325.2m/s).The propagation velocity of the foam fracturing fluid reduced significantly (about 501.1m/s). The pressure wave velocity and energy loss, which are affected by viscosity, concentration, or the foam quality, also showed a different law in the same kind of fracturing fluid: The pressure wave velocity increase slightly with viscosity increasing (the average value is 7.81%). The pressure wave velocity increased significantly with concentration increasing in the guar gum fracturing fluid and clean fracturing fluid (velocity increased by 17.4% and 38.3% respectively.).There is a significant reduction with the increasing of the foam mass fraction in foam fracturing fluid (reduced by 46.3%). As the viscosity, concentration or foam mass fraction increase, energy loss of pressure wave increased. However, the patterns of pressure wave attenuation in three fracturing fluids are distinctive and there is a obvious "energy zero attenuation" segment in clean fracturing fluid. The results reveal the pressure transfer law, fill the research gaps of the pressure wave in fracturing fluid and provide a theoretical basis and numerical Simulation parameters for the analysis of fracture initiation location of radial well.
C3006	Analysis of Circadian Stimulus Provide by Daylighting in Educational Uses **Ignacio Acosta**, Juan Francisco Molina, and Miguel Ángel Campano Instituto Universitario de Arquitectura y Ciencias de la Construcción. Universidad de Sevilla, 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, especially for educational use. Architectural and design features, including window size and room reflectances, impact circadian stimulus levels. DAYSIM simulations were used to determine the average circadian stimulation that students in classrooms would receive as a function of different window-to-façade ratios, window position and room reflectances. The present paper provides a tool to assist designers with choice of fenestration and interior design to promote circadian entrainment.
C1004 Poster	New Configuration of Immobilized A. Succinogenes Bed for Succinic Acid Production Anca Irina Galaction, Lenuta Kloetzer, **Alexandra Cristina Blaga**, Marius Turnea, and Dan Cascaval Technical University Gheorghe Asachi Iasi, Romania

	Abstract—Fermentative production of succinic acid from renewable resources using microorganism as: *A. succinogenes*, modified *E. coli*, *A. succinicicproducens*, *M. succiniciproducens* proved to be cost effective compared with other methods. The use of immobilized microorganisms offers the advantages of the increase of number of the repeated biosynthesis cycles re-using the same particles of biocatalysts, increase of the thermal, Chemical and to shear forces resistance of the biocatalysts. However, the bioreactor design and operating conditions influence the efficiency of the biosynthesis process. The experiments have been carried out in batch system in a bioreactor with a cylindrical bed of basket type having the inner diameter of 100 mm, height of 100 mm and the bed thickness of 10 mm. The studies have been focused on the glucose external and internal mass transfer and, implicitly, on the influence of the internal diffusion on the transfer and biochemical processes rates, assuming the kinetics controlled by substrate and product inhibitory effects.

Morning, June 16, 2015 (Tuesday)

Venue: Conference Room-Güell A (Level 1)

8:30-8:40		**Opening Remarks** Prof. Byoung Ryong Jeong Department of Horticulture, College of Agriculture & Life Science, Gyeongsang National University, Korea
8:40-9:20		**Keynote Speech III** Prof. IGNACIO ACOSTA GARCÍA School of Architecture, University of Seville, Spain Topic: "Daylighting as a Natural Source to Provide Energy Saving in Buildings"
9:20-10:00		**Keynote Speech IV** Prof. Byoung Ryong Jeong Department of Horticulture, College of Agriculture & Life Science, Gyeongsang National University, Korea Topic: "Enhanced Tolerance of Horticultural Plants to Abiotic and Biotic Stresses by Si"
10:00-10:20	**Coffee Break & Photo Taking**	

SESSION–2 (ICCPE 2015-16 presentations)

Session Chair: Prof. Basim Abu-Jdayil

Time: June 16, 2015 10:20-12:30

Venue: Conference Room-Güell A (Level 1)

P0002	Rh-Promoted Carbon Catalysts to Obtain Clean Components of Motor Fuels S. K. Tanyrbergenova, **A. Temirkhan**, Z. A. Mansurov, N. K. Zhylybayeva, and G. M. Naurzbayeva Institute of Combustion Problems, Kazakhstan *Abstract*—In this work were selected the optimal conditions of the dearomatization reaction based on the hydrogenation of benzene to cyclohexane over Rh catalyst, which increases the octane number. The results showed that the study of the catalytic activity of 1% Rh catalysts were active and selective. Carbonized apricot pits 0.5%

	Rh-promoted exhibits catalytic activity in hydrogenation of benzene in the temperature mode, but by increasing the space velocity rapidly loses activity. Rh catalyst on calcined Al_2O_3 at 550 ^{0}C showed markedly less stability in comparison to the other samples. 0.5% Rh- promoted clay-containing zeolite exhibits catalytic activity in the hydrogenation of benzene in the temperature range 280-350 ^{0}C, and also has high selectivity to yield of cyclohexane and DMB. As a result, turned improve the environmental performance of motor fuel to achieve the parameters corresponding to Euro-4 standards.
P0006	The Antioxidative Capacity of Kefir Produced from Goat Milk **Lutfiye Yilmaz-Ersan**, Tulay Ozcan, Arzu Akpinar-Bayizit, and Saliha Sahin Uludag University, Department of Food Engineering, Turkey *Abstract*—In this present study, the antioxidant properties of kefir produced from goat milk with kefir grains were investigated. The antioxidant capacity of kefir was evaluated by assessing the DPPH (2,2-Diphenyl-1-picrylhydrazyl), the ABTS-based method [2,2'-azino-bis-(3-ethylbenzthiazoline-6-sulphonic acid)] radical-scavenging activity and ferric reducing antioxidant power (FRAP) at different stages of fermentation and storage period. Generally, the antioxidant capacity of goat milk-kefir samples was mainly dependent on the fermentation and storage period and good stability in DPPH, ABTS and FRAPS assays. During fermentation and storage, the total phenolic content in samples demonstrated significantly decreased.
P0007	A Research on Whey as a Renewable Substrate for Single Cell Oil Production by *Saprolegnia diclina* **Arzu Akpinar-Bayizit**, Tulay Ozcan, Lutfiye Yilmaz-Ersan and Fikri Basoglu Uludag University, Department of Food Engineering, Turkey *Abstract*—The objective of the present laboratory scale experiment was to assess utilization of cheese whey by *Saprolegnia diclina* IMI 318623 for biomass and lipid production. Current interest in single cell oils (SCOs) accumulated by oleaginous fungi centers around the ability of these microorganisms to convert agro-industrial surpluses and residues into lipids as potential alternative to edible plant and/or animal lipids, lipids containing polyunsaturated fatty acids (PUFAs) or biodiesel. The results indicated that *Saprolegnia diclina* can utilize whey for biomass and lipid accumulation, however, cannot adequately synthesize long chain PUFAs probably due to depletion of specific ω3 fatty acid desaturases and elongases.
P0008	Evaluation of Antioxidant Activity of Pomegranate Molasses by 2,2-Diphenyl-l-Picrylhydrazyl (DPPH) Method Arzu Akpinar-Bayizit, Tulay Ozcan, Lutfiye Yılmaz Ersan, and **Elif Yildiz** Uludag University, Department of Food Engineering, Turkey *Abstract*—In Turkish cuisine the pomegranate molasses (PM) are used as a condiment and believed to have significant effects for arteriosclerosis, cholesterol levels and cancer prevention due to the antioxidant potential of pomegranate fruit itself. In this study, we measured the total polyphenols content, of which varied from 118.28 to 828.15 mg of gallic acid equivalent per gram of PM, and antioxidant

	activity by DPPH assay, of which were found to be between 560.23 to 1885.23 µmol trolox equivalent per gram of sample. The chemical composition of PM samples were found as: the water soluble dry matter content 62.40-75.00 g $100g^{-1}$; viscosity 176 and 2900 mPa.s.; total acidity 4.70-9.73 g $100g^{-1}$; pH of the samples changed 1.71 and 2.96; invert sugar and total sugar 23.71-56.95 g $100g^{-1}$ and 30.33-70.94 $g100g^{-1}$, respectively.
P0016	Effect of Whey Protein Based Edible Coating on the Quality of Fresh Mutton **Saba Belgheisi**, Reza Soltani, and Ramona Massoud Standard Research Institute of Iran (SRI), Iran *Abstract*—Food packaging is an important discipline in the area of food technology, concerns preservation and protection of foods. The objective of this research was to determine of the effect of whey protein based edible coating on the moisture loss , sensory attributes, microbial properties and total volatile nitrogen value of fresh mutton after 0, 1, 3 and 5 days at 5 ℃. The moisture content, moisture loss, sensory attributes (juiciness, color and odor), microbial properties (total count and psychrophilic bacteria) and total volatile nitrogen value of the coated and uncoated samples were analyzed. The results showed that, moisture content, moisture loss, juiciness and color of the coated and uncoated samples have significant differences ($p<0.05$) at the intervals of 0 to 1 and 1 to 3 days of storage. But no significant difference was observed at interval time 3 to 5 days of storage ($p>0.05$). Also, there was no significant differences in the odor values of the coated and uncoated samples ($p>0.05$). Therefore, the coated samples had consistently more moisture, juiciness and colored values than uncoated samples after 3days at 5 ℃. The results showed that, total count, psychrophilic bacteria and total volatile nitrogen of the coated and uncoated samples did not have significant differences ($p>0.05$). Therefore whey protein based edible coating could not reduce the microbial load of fresh mutton. So, whey protein edible coating could enhance product presentation and eliminate the need for placing absorbent pads at the bottom of the trays.
P0018	The Modification of Rheological Properties of Bentonite-Water Dispersions with Cationic and Anionic Surfactants **Basim Abu-Jdayil**, Mamdouh Ghannam, and Mustafa Nasser UAE University, Abu-Dhabi, UAE *Abstract*—In the use of bentonite in different industrial applications, different additives are recommended to optimize the rheological properties of the formulation. In this study, the effect of anionic surfactant sodium dodecyl sulfate (SDS) and cationic surfactant cetyltrimethyl ammonium bromide (CTAB) on the rheological properties of Na-bentonite suspensions was investigated in the concentration range of $1.0\times10^{-3}-1.0\times10^{-1}$ M. The SDS surfactant was effective in modifying the rheological behavior of bentonite dispersion in the concentration range that corresponds to critical micelle concentration (CMC) and critical coagulation concentrations (CCC) of SDS. On the other hand, the addition of CTAB surfactant to bentonite suspension reduced significantly its viscosity and shifted its behavior from shear thinning with a yield stress toward Newtonian.

P0021	Effect of Temperature and Particle Size on the Yield of Bio-Oil, Produced from Conventional Coconut Core Pyrolysis **Shirley Duarte Chavez**, Jorge Lin, Dario Alviso, and Juan Carlos Rolon National University of Asunción, Paraguay *Abstract*—Thermochemical conversion processes can transform biomass in solid, liquid and gaseous fuels. Among these processes, pyrolysis allows a pyroligneous condensate, similar to fuel oil, called bio-oil. This research focused on conventional pyrolysis of Paraguayan coconut core, in order to determine the effects of temperature and particle size on the bio-oil yield; as well as to obtain physico-chemical properties of the biofuel under the selected operating conditions. Uncondensed gases generated during pyrolysis were analyzed as well as the bio-oil stability in a two month period at 40 ℃. The experiments were carried out using an electric oven, a fixed bed reactor and a vertical concentric condenser. The analysis of variance indicated that both factors have a significant influence on performance, and also indicates interactions between them. The liquid properties included water content of 53% w/w, pH 2.41, kinematic viscosity of 1.51 cSt, specific gravity of 1.0739 and higher calorific value between 14.75 MJ/kg to 10.88 MJ/kg. Uncondensed gases were composed mainly of CO and CO_2 with small amounts of CH_4 and C_3H_8, which were generated, up to 45 minutes after reaching pyrolysis temperature. Finally, stability tests indicated that bio-oil obtained is stable until the fourth day of storage at 40 ℃.
P1002	Investigation of Pineapple as Addition on the Electrodeposition of Zn- nA_2O_3 on Carbon Steel in Acidic Medium **Kadhim F. Alsultani** and Lubha Muneer Tajaldeen Babylon University, Iraq *Abstract*—The performance effects of pineapple Juice Extract as addition agents on the electroplating of zinc on mild steel in acid chloride solution were experimentally investigated. The experiments were performed under different corrosive media. The zinc electroplating on mild steel was performed using a direct current (DC)–supply at defined operating parameters. The surface of the plated steel was examined using scanning electron microscopy (SEM) for surface morphology. The corrosion resistance of the plated surface was determined by potentiostatic polarization method. To evaluate the performance of coatings types in general and oxides, which exist on metal and alloys surface in a special way, were examined by thermal shock test. The quality of the electro-deposition of zinc was good as indicated by the microstructural feature of the plated surface. The electrodeposition process was sensitive to changes in additive concentration and plating time. Variations in the plating parameters produced entirely new and different surface morphology.
P1003	Removal of Heavy Metals from Aqueous Solution by Using Low Cost Rice Husk in Batch and Continuous Fluidized Bed Experiments **Jabbar H. Al-Baidhany** and Simaa T. Al-Salihy Babylon University, Iraq

	Abstract—This study aims to evaluate the performance efficiency of the proposed adsorbent (rice husk). The adsorptive capacity and removal efficiency of the rice husk were evaluated for the removal of heavy metals of (Cd, Pb and Cr) from aqueous solutions. The results showed the following removal efficiencies: (97.96% for Cd, 90% for Pb, and 84% for Cr). Adsorbent loading capacities for cadmium determined by batch studies were verified through continuous column experiments (fluidized bed). It was found that the maximum adsorption capacity of the candidate adsorbent (5.54) mg/g in Cd batch system. A set of equilibrium isothermal experiments were conducted and fitted with two models; Langmuir and Freundlich. The equilibrium isotherms of rice husk were found to be of a favorable type and Freundlich isotherm model gave the best fit to represent the experimental data of this system with correlation coefficient equals to 0.9934. Eleven continuous experiments were carried out in fluidized bed column to study the effect of initial concentrations, bed depth and flow rate on the performance of adsorption process. Also it was made a comparison between the efficiency of the rice husk adsorbent in removing of Cd(II) with the well-known adsorbent of activated carbon in continuous fluidized bed process. The results proved that the rice husk to be an efficient and economic adsorbent for the removal of different heavy metals from wastewater.
P3004	Conversion of Bio-Ethanol over Zeolites and Oxide Catalysts K. Dossumov, **D. Kh. Churina**, G. Y. Yergaziyeva, M. M. Telbayeva, and S. Zh. Tayrabekova Center of Physical-chemical Methods of Investigations and Analysis of al-Farabi Kazakh National University, Kazakhstan *Abstract*—The zeolites and oxide catalysts are investigated in the conversion of bio-ethanol. It is shown that the formation of the products depends on the feedstock composition and the composition of the reaction mixture. It is determined that at the conversion of bio-ethanol over the zeolites 3A, 4A, 5A, and 13 X products of cracking, reforming, dehydration and oligomerization of ethylene are formed. The cerium-containing catalysts are studied via electron microscopy and temperature - programmed desorption of ammonia. Doping Ce/γ-Al_2O_3 catalyst with lanthanum is shown to increase its dispersion and the number of active acid sites, thereby improving its activity.
P3006	Thermal Properties of Plasticized Poly (Lactic Acid) (PLA) Containing Nucleating Agent **Seyed Mohammad Kazem Fehria**, Patrizia Cinelli, Maria-Beatrice Coltelli, Irene Anguillesi, and Andrea Lazzeri National Interuniversity Consortium of Materials of Science and Technology (INSTM), Italy *Abstract*—The present research reports the investigation of the role of an oligomeric polyadipate plasticizer (206 3NL), and a nucleating agent aromatic sulfonate derivative (LAK301) on thermal behaviours of poly-lactic acid (PLA) evaluated through differential scanning calorimetry (DSC) measurements in order to investigate the separated effect due to the addition of plasticizer and nucleating agent

	on the thermal behavior of PLA respectively. Binary and ternary systems containing PLA/206 3NL/LAK301 have been developed. All samples have been prepared by melt-blending. The results of the present study show that LAK301 acts as a very efficient nucleating agent by increasing crystallinity percentage from 5.6% in pure PLA to 12% in PLA/LAK301 5%wt/206 3NL, and that (206 3NL) is a compatible plasticizer for PLA as the glass temperature drops down from 59.4 ℃ in pure PLA to 38.9 ℃ in blends of PLA-NL 15 wt%. Also the approach of investigating the compatibility in ternary system where the plasticizer and nucleating agent have a synergic effect on thermal properties as well on crystallinity and glass transition temperature of PLA were addressed. In fact in ternary blends of PLA/LAK301/206 3NL with 5 wt% of LAK301 the glass transition temperature was reduced to 30.3 ℃ and PLA crystallinity increased to 39 wt%.
P0004 Poster	Selective Pertraction of Succinic Acid from Mixed Acids Fermentation Broths Madalina Postaru, **Lenuta Kloetzer**, Alexandra Blaga, Dan Cascaval, and Anca-Irina Galaction "Gheorghe Asachi" Technical University of Iasi, Romania *Abstract*—This work investigated the possibility to selectively separate succinic, formic, and acetic acids from biosynthetic mixture obtained by fermentation with Actinobacillus succinogenes using extraction and transport through liquid membranes with tri-n-octylamine (facilitated pertraction). The experimental results indicated that the separation selectivity is mostly influenced by carrier concentration, the maximum selectivity (S = 133) being reached for 70 g L-1 TOA in liquid membrane. This value is lower than that stoichiometrically needed for the reaction with formic and acetic acids, but the difference could be explained by relating the selectivity factor to the final mass flows, succinic acid being more efficiently transferred to the stripping phase as compared to formic acid. Furthermore, a more important increase of the selectivity factor can be achieved by optimization of the carrier concentration compared to the modification of the aqueous phase's pH-values. Thus, the study indicated the possibility to eparate selectively these acids from the biosynthetic mixture, the formic and acetic acids being transferred from the feed phase through liquid membrane to the stripping phase, while succinic acid remains in the feed phase.
P0014 Poster	Recovery of Struvite from Synthetic Animal Wastewater by Continuous Reaction Crystallization Process **Anna Kozik**, Nina Hutnik, Boguslawa Wierzbowska, Krzysztof Piotrowski, and Andrzej Matynia Wroclaw University of Technology, Faculty of Chemistry, Poland *Abstract*—Experimental results concerning continuous process of phosphate(V) ions recovery from synthetic animal breeding wastewater were presented. It was concluded, that phosphate(V) ions precipitated as sparingly soluble salts: amorphous calcium phosphate(V) (above 70% in a product) and struvite (below 30%). Solid product contained also impurities, mainly in the form of co-precipitated sparingly soluble metal hydroxides. Product size did not exceed 80 μm. Its mean size varied

	from ca. 15 to ca. 18 μm. Population homogeneity was moderate, with high agglomeration effects. Excess of magnesium ions in relation to phosphate(V) ions concentration (molar ratio 1.2 : 1) in a feed influenced process course and its results advantageously. Struvite content in a product increased more than 20%. Product size also enlarged – mean size was ca. 17% larger.
P0015 Poster	Recovery of Struvite from Phosphorus Mineral Fertilizer Industry Wastewater in Continuous Jet Pump Crystallizer **Nina Hutnik**, Anna Kozik, Agata Mazienczuk, Krzysztof Piotrowski, and Andrzej Matynia Wroclaw University of Technology, Faculty of Chemistry, Poland *Abstract*—Research results concerning struvite ($MgNH_4PO_4 \cdot 6H_2O$, MAP – Magnesium Ammonium Phosphate) reaction crystallization process from phosphorus mineral fertilizer industry wastewater with the use of magnesium and ammonium ions are presented. Wastewater of pH < 4 contained 0.445 mass % of phosphate(V) ions and impurities: aluminium, calcium, copper, iron, potassium, magnesium, titanium, zinc, fluosilicate, fluoride and sulphate(VI) ions. Laboratory tests were carried out in temperature 298 K, both under stoichiometric conditions and at 20% excess of magnesium ions in relation to phosphate(V) and ammonium ions feed concentrations. Original continuous DTM (*Draft Tube Magma*) type crystallizer with internal circulation of suspension driven by jet pump fed with compressed air was used. Effect of pH and mean residence time of suspension in a crystallizer on the product crystals quality was determined. Product crystals of mean size from ca. 23 to ca. 40 μm were manufactured. The largest struvite crystals, of acceptable homogeneity, were produced at 20% excess of magnesium ions, pH 9 and for mean residence time elongated up to 3600 s. Concentration of phosphate(V) ions decreased from 0.445 mass % in a feed to $9.0 \cdot 10^{-4}$ mass % in a postprocessed mother liquor. In a product, besides main component – struvite, also amorphous calcium phosphate(V) (ACP) was detected, accompanied with hydroxides of some metal impurities present in wastewater.
P3002 Poster	Polyoxide Catalysts for Oxidation of Methane K. Dossumov, **D. Kh. Churina**, G. Y. Yergaziyeva, L. K. Myltykbayeva, and E. Zh. Ermeshev Center of Physical-chemical Methods of Investigations and Analysis of al-Farabi Kazakh National University, Kazakhstan *Abstract*—The effect of modifying additives of copper, neodymium and molybdenum on acidity and dispersity of nickel catalyst was studied by temperature-programmed desorption of ammonia and scanning electron microscopy methods. Their activity in the reaction of partial oxidation of methane (POM) and dry reforming of methane (DRM) were measured. The $NiCuNdMo/Al_2O_3HZSM\text{-}5$ was found to be the best catalyst. The introduction of molybdenum into the composition of $NiCuNd/Al_2O_3HZSM\text{-}5$ catalyst was determined to increase general acidity of the catalyst from $26.71 \cdot 10^{-4}$ to $29.46 \cdot 10^{-4}$ mol / gKt, and also it increases the dispersion of the active phases of the catalysts surface. This data of change

	positively affects the activity of the catalyst in POM reaction, concentration of hydrogen in the reaction product compared with NiCuNd / Al_2O_3HZSM-5 increases from 60 to 70 vol. %. The investigation of the catalytic activity of NiCuNdMo/Al_2O_3HZSM-5 catalyst in the reaction of DRM has shown that equilibrium yield of H_2 and CO is observed in the temperature range of 650-900 ℃. The main product in the process of oxidative conversion of methane by oxygen is hydrogen, whereas in the process of oxidative conversion of methane by carbon dioxide synthesis gas is formed.
P3005 Poster	The Liquid-Phase Hydrogenation of Citral to Citronellal at Hydrogen Pressure U. Syunbayev, **D. Kh. Churina**, G. Y. Yergaziyeva, N. A. Assanov, and K. K. Kalihanov Center of Physical-chemical Methods of Investigations and Analysis of al-Farabi Kazakh National University, Kazakhstan *Abstract*—The aim of the work is to obtain citronellal that is the odoriferous substance and refers to the fragrant compounds used in perfumery and in the food industry as a flavoring. It is a raw material for producing aromatic substances -izopulegol, menthol, citronellol et al. The hydrogenation of citral to citronellal was investigated over the catalysts on the base of VIII group metals using special high-pressure kinetic (KEHP) equipment allowing to keep the liquid phase hydrogenation process for any constant hydrogen pressure in a wide variation of the experimental conditions. On the activity of the catalysts studied are located in the following sequence: NiR> Pt> Pd> Rh> Ni-black> Ir> Os> Ru. The effect of time for catalyst reduction on its selectivity was studied.

12:30-13:30	**Lunch**
Hotel Restaurant	

SESSION–3 (ICAAA 2015-12 presentations)

Session Chair: Prof. Byoung Ryong Jeong

Time: June 16, 2015 13:30-15:55

Venue: Conference Room-Güell A (Level 1)

Z0001	Serum FSH (*Follicle Stimulating Hormone*) Concentrations in Prepubertal Female Norduz Lambs

	Turgut Aygün Yüzüncü Yıl University, Agricultural Faculty, Department of Animal Science, Turkey *Abstract*—In this study, serum FSH (*follicle stimulating hormone*) concentrations of prepubertal 48 female Norduz lambs born in Sheep Farm of Agricultural Faculty of Yüzüncü Yıl University were determined. Lambs were born in February, and within a month. After the parturition, live weights of ewes and lambs were recorded. The lambs were kept with their dams for three months. The lambs were fed adlibitum by crushed sainfoin hay (*onobrychis viciifolia*) containing 7.5% crude protein during research period. Serum FSH concentration was analyzed from blood samples collected at 3, 5, 7, 9, and 11 weeks of age for each female lamb. Serum FSH concentrations of female Norduz lambs were 5.471, 6.415, 6.625, 7.383, and 5.927 ng/ml at 3, 5, 7, 9, and 11 weeks of age, respectively. The sampling period and the live weight at sampling period significantly affected ($p<0.05$) serum FSH concentrations of female lambs while birth type, dam age, and birth weight did not affect ($p>0.05$). Results showed that serum FSH concentrations increased from 3rd week to 9th week then decreased after 11th week post-natally in female lambs of Norduz sheep breed.
Z0002	Polymorphism of a Mutation of DGAT1 Gene in Lori Sheep Breed **Shahram Nanekarani**, Mojtaba Kolivand, and Majid Goodarzi Department of Animal Science, Boroujerd Branch, Islamic Azad University, Boroujerd, Iran *Abstract*—The objective of this study was to analyze exon 16 - 17 of DGAT1 gene polymorphism in Lori sheep breed. This Gene which is a key acyltransferase in triglyceride biosynthesis, has been located to chromosome 9 of sheep. A total of 118 blood samples have been collected from Lori sheep breed and genotypes were determined by PCR-RFLP assay. The amplified product was observed as 309 bp and the restriction digestion with AluI revealed three genotypes, TT (272 and 37 bp), TC (309, 272 and 37 bp) and CC (309 bp). The results showed that allele frequencies of the DGAT1 gene were 0.562 and 0.438 for C and T allele, respectively. Average heterozygosity for this locus was suitable (0.49). The genotype of SNP in population was not in consent with Hardy-Weinberg equilibrium ($p<0.01$). The results indicated that this indigenous sheep breed is proper polymorphism and could be used to guide association studies between this polymorphism and Carcass traits.
Z0006	Identification of Vector Ticks Naturally Infected by *Theileria ovis* Using PCR Method in Lorestan Province, West of Iran **Saeid Hashemi** and Majid Goodarzi Department of Parasitology, Faculty of Agriculture Science, Boroujerd Branch, Islamic Azad University, Boroujerd, Iran *Abstract*—The subclinical *Theileriosis* in sheep flocks of Lorestan province - west of Iran- is common in warm seasons and is transmitted by hard ticks. The present study was conducted in order to identify vector ticks via PCR method in this region.

	Among five different regions and during the April-July period of 2012, 265 cases of hard ticks were collected from the ear and the body surface of anemic and feverish sheep, and 150 blood smears were taken from their ear veins. DNA samples were extracted from salivary glands of the collected ticks and PCR test was done using a pair of specific primers in order to amplify the 520 bp DNA fragment of SSu rRNA gene of T. ovis. The microscopic examination of blood smears demonstrated that 19 samples (12.66%) were infected by Piroplasmic forms of *Theileria* species. The PCR revealed that 37 cases of 152 *Rhipicephalus sanguineus* (24.34%) were positive for T. ovis genum including 21 (30.88%) female and 16 (19.04%) male ticks while the other ticks were not infected by this parasite. From 265 tick samples, *R. sanguineus* and *Haemaphysalis punctata* had the highest (57.35%) and the lowest (3/01%) frequencies, respectively. Two of the PCR products were sequenced. The resulting sequences and the Nocleotid sequence of T.ovis gene of Mazandaran were identical. Since R. sanguineus was the only tick infected by T.ovis, it seems that it is the primary vector of this parasite in the sheep in Lorestan.
Z0007	Antifungal Activity of Amphotericin B-Loaded Nanoparticles **Hasan Mohammad Asghari** and Shahram Nanekarani Department of Laboratory Sciences, Borujerd Branch, Islamic Azad University, Borujerd, Iran *Abstract*—The purpose of this discussion was to prepare and appraise invivo and invitro effect of the spray-dried Amphotericin B (AmB) -loaded nanospheres. The spray-dried nanospheres were prepared by using aerosol and Am.B entrapment effect was measured by HPLC method. Minimum inhibitory concentration (MIC) of AmB-loaded nanospheres against Candida albicans (ATCC 90028) was defined by using micro dilution method and its in vitro haemolytic effect and antifungal effect on infected rabbits was also analyzed. The MIC of Am.B-loaded nanospheres against C. albicans compared to the free antibiotic was lower significantly. Invivo testing indicated that AmB-loaded nanospheres have a stronger protective effect against candidiasis compared to the free AmB. Results of this discussion indicate that prepared spray-dried Am.B-loaded nanospheres would be a good choice for the therapy of mycosis because of low toxicity and high consistency and effect. By developing this method can greatly reduce the side effects of antibiotics in human body.
Z0008	Structural Changes of Conective Tissue Proteins in Jumbo Squid (*Dosidicus gigas*) Mantle during Ice Storage and their Relationship to Texture Osuna-Amarillas P., Razcon-Zavala J., Tapia-Vásquez A., Suarez-Jiménez M., Rouzaud-Sandez O., and **Torres-Arreola W**. Universidad de Sonora, México *Abstract*—Collagen is the major connective tissue protein and one of the main constituents of the giant squid. It plays an important role since it is responsible for the union between various cells, hence there is a close relationship between its behavior and pyridinoline content with muscle firmness during ice storage. Therefore, in this study pyridinoline content, thermal resistance and solubility of the

	connective tissue of jumbo squid (Dosidicus gigas) mantle during ice storage (20 days) was evaluated. Collagen was fractionated based on its solubility (salt soluble (NaCl), SSC; pepsin soluble, PSC and insoluble, IC). An increase in the thermal resistance of SSC, after 10 days with to subsequent decrease was found. Furthermore, IC is thermally more resistant than SSC and PSC. Pyridinoline content in mantle affects the solubility of the differents collagen fractions during the iced period. Finally, the electrophoretic profile reveals that structural changes occur in the different types of collagen, causing changes in the muscle texture, due to an increase in the thermal resistance of connective tissue and decrease in solubility.
Z0009	Development of Gliadin Nano and Micro-Particles by Nanoprecipitation Method: An Alternative Method for Urea Encapsulation **Barreras Urbina Carlos Gregorio**, Rodríguez Félix Francisco, Ramírez Wong Benjamín, López Ahumada Guadalupe Amanda, and Burruel Ibarra Silvia Elena Universidad de Sonora, México *Abstract*—Natural polymers have been researched for development of nano and micro-particles in order to apply an alternative fertilization in the agricultural fields encapsulating urea to improve yields, agricultural product quality, decrease soil nutrients and environmental pollution1, 2, 3. Natural polymers as proteins are used as raw material to develop nano and micro-particles4. Gliadins are monomeric proteins obtained from wheat gluten and its molecular weight ranges from 25 kDa to 40 kDa5. Gliadin has the property to confer viscosity through noncovalent interactions into the wheat dough6. They are classified into three groups; α/β, γ and ω-gliadins due to their mobility on gel electrophoresis at low pH7. In this work we make the extraction of gliadin from wheat grain Triticum durum, which consisted in three steps; 1) prepare the wheat flour, 2) obtain the wheat gluten and 3) extract the gliadin fraction. Rheological properties of the gliadins in ethanol 70% v/v were carried out, for study its effect to develop the particles. Gliadin nano and micro-particles were developed by nanoprecipitation method, with a flow rate of 5 mL h-1 using an injection needle (27x13 mm). The particles developed were observed through SEM (Scanning Electron Microscope) showing particles size in the range of 900 nm to 1 μm. TGA (Thermal Gravimetric Analysis) technique was done to determine thermal stability of the particles. DSC (Differential Scanning Calorimetry) technique was performed to observe energetic transitions of the material developed. It is concluded that micro and nanoparticles could be applied as release systems of urea in agricultural fields.
Z0010	Preparation of Wheat Gluten Micro- and Nano-particles by Electrospray with Potential Application as Urea Controlled Release System in Agriculture **José A. Tapia-Hernández**, Francisco Rodríguez-Félix, Patricia I. Torres-Chávez, Agustín Rascón-Chu, and Maribel Plascencia-Jatomea Universidad de Sonora, México *Abstract*—The current problems in agriculture are the loss of nitrogen fertilizers by denitrification, evaporation and leaching (Castro *et al*, 2012). Urea is the most nitrogen fertilizer used because it contains 46% nitrogen, cheap and accessible in the

	market (Hussain *et al*, 2012). However, their use involves up to 90% loss, causing low yield for crop and getting poor quality products (Peña-Cabriales *et al*, 2001). For this reason, it is proposed technologies that help make better use of this fertilizer, as controlled release system using nanospheres (Andreani *et al*, 2009). These systems are made from biodegradable materials as wheat gluten and their proteins (gliadin and glutenin), besides is a residue of the process of obtained starch used to produce biofuels (Panagiotopoulos *et al*, 2013). Glutenins are considered macropolymers (GMP) with molecular weight in the range of 500,000 to as 10 million Da. These are classified into low molecular weight glutenin (LMW-GS) and high molecular weight glutenin (HMW-GS) (Weiser *et al*, 2007). In this work glutenins were obtained from 100 g of commercial gluten in 1 liter of 70% ethanol with a yield of 49%, after acetic acid and ethanol solutions were made by electrospray technique, varying system parameters: voltage (15-20 kV), flow rate (1-0.1 mL h-1), collector distance from the needle (5-15 cm) and glutenin concentration (2-12 % w/v). Rheological characterization of solutions was made in a Rheometer measuring the viscosity. Morphology and particle size was observed on a scanning electron microscope, obtaining a diameter of particle in scale micro and nanometric. It's concluded that micro and nano-particles obtained can be used in controlled release system.
Z0011	Spheres of Wheat Glutenin Obtained by Electrospinning: Preparation, Characterization and Study of Prolonged Release of Urea **Francisco Rodríguez-Félix**, Daniela Denisse Castro-Enríquez, María Mónica Castillo-Ortega, Benjamín Ramírez-Wong, Teresa Del Castillo-Castro, Jorge Romero-García, and Ramón Dórame. Miranda Universidad de Sonora, México *Abstract*—Agrochemicals, such as nitrogen fertilizer products have been used for decades substantially increasing food production worldwide. Today its use has been one of the main promoters of increased agricultural yields. However, their use generates losses by leaching, evaporation and nitrification. What generates products of poor quality and high production costs; in addition to environmental pollution. A potential solution to this problem is to create prolonged release systems of nitrogen fertilizers. Today biopolymers specifically proteins from cereals have gained great popularity in creating new biomaterials with diverse applications as prolonged release systems and matrices for cell culture [1, 2]. For obtained these materials has been used the electrospinning technique. Electrospinning technique has been allowed to form nano and microfibers [3], both synthetic polymers and natural [4]. In a previous article we report the preparation of a wheat gluten film by electrospinning technique with application as an extended release system of urea [5]. In this study we present suitable conditions for the preparation of spheres from glutenin by electrospinning technique, urea sorption and evaluating it as a prolonged release system. characterizing morphology, thermal properties, interaction using SEM, TGA, DSC, FTIR. Morphological characteristics, thermal properties and chemical interactions were evaluated using SEM, TGA- DSC and FTIR, respectively. It is concluded that the materials obtained have potential application as prolonged release systems of urea for use in agricultural crops.

Z0014	The Use of Modified Atmospheres Packaging to Control Different Life Stages of Bean Weevil, *Acanthoscelides obtectus* (Say) in Beans **Francisco J. Wong-Corral**, Jordi Riudavets, Jesús Borboa-Flores, and Francisco J. Cinco-Moroyoqui Universidad de Sonora, México *Abstract*—Stored legumes are attacked by a great diversity of insect pests of bruchid, with highly damaging results. One of the most economically important species in Mexico, is the bean weevil, *Acanthoscelides obtectus*, having national distribution. Control of this pest is mainly based on the use of chemicals, mainly spraying of phosphine at intervals of 30 days. The development of insect resistance to pesticides, reducing waste levels permitted in the final food, and the need to respect the environment, is making it necessary to seek new alternatives of control, such as modified atmosphere (MA) with carbon dioxide (CO2). The main objective was to establish the efficacy of MA with CO2 to control the four development stages of *A. obtectus*. Three concentrations (50, 70, and 90%) of CO2 were used at 28 ℃. The susceptibility of insect showed differences, according to the four stages of development, where the states of eggs and pupa were the most tolerant to exhibitions. The eggs of 4 days were more tolerant with 50% of CO2, while the eggs of 2 to 3 days were more tolerant with 70% of CO2. The sensitivity of mature larval instars were more tolerant than young instars. The pupal stage resulted the most tolerant, because it took 7 days to get 100% mortality. Adults required 1 day of exposure in different concentrations to obtain 100% mortality.
Z0015	Biochemical and Kinetic Characterization of the Digestive Trypsin-Like Activity of the Lesser Grain Borer Rhyzopertha Dominica (F.) (Coleoptera: Bostrichidae) **Francisco J. Cinco-Moroyoqui**, Pablo Sergio Osuna-Amarillas, Franncisco J. Wong-Corral, and Jesús Borboa-Flores Universidad de Sonora, México *Abstract*—The lesser grain borer Rhyzopertha dominica is a primary pest of stored wheat and other cereals in many regions of the world. The insect uses digestive proteases for digestion of proteins present in the grains. The present work was carried out to isolate and characterize the digestive trypsin-like activity of the insect. The enzyme activity from insect midguts was isolated using hydrophobic interaction chromatography with phenyl-sepharose CL-4B. Eight bands (from A through H) with caseinolytic activity and molecular weights in the range 22 to 51.3 kDa were detected by zymography in casein-polyacrylamide gels. The strongest bands were D, G, and H, and showed estimated molecular weights of 33.6, 25.4, and 22 kDa, respectively. In-gel inhibition of caseinolytic activity showed that the serine protease inhibitors SBTI and TLCK partially inhibited proteases A and B, completely inhibited proteases C, D, F, G an H, and partially suppressed E. In-vitro inhibitory assays showed that SBTI and TLCK suppressed the BApNAase activity by 92.3% and 79.2%, respectively, indicating the presence of serine proteases. Wheat albumin extracts were highly effective in inhibiting all the proteolytic activity. The chymotrypsin inhibitor TPCK did not affect the BApNAase activity, indicating that

	the proteolytic activity in R. dominica belongs to the trypsin-like type. With BApNA as the substrate, the proteolytic activity was high across a broad pH range of 6-11 with two peaks of maximum activity at pH 8 and 10 with an optimum temperature of 50 ℃. SBTI inhibited the BApNAase activity with IC50 and Ki values of 0.02 μM and 1.17 × 10-8 M, respectively. The kinetic constants Km and Vmax were 0.07 mM and 2.8 mM/min, respectively. The activation energy (Ea) for BApNA hydrolysis was 33.5 kJ/mol. The results of this study confirm that R. dominica rely on serine protease activity for food digestion.
Z0022	Evaluation of Livestock I&T System in Respect of Contagious Disease Control Based on Adapted State-Transition Simulation Model **Xueni, Gou** and Robert Lee Kong, Tiong School of Civil & Environmental Engineering, Nanyang Technological University, Singapore *Abstract*—Livestock Identification & Traceability (I&T) systems are evolving throughout the world in light of technology advancement. Specifically in China, pig I&T systems are in the midst of transformation. While several obstacles have impeded the desired development of the current two dimensional bar code ear tag system, other more advanced systems are tempted for replacement. Since there is no clear-cut rule for an optimal choice, evaluation can be made to assist in selecting the appropriate one. This study adapted the state-transition simulation model to evaluate the systems in respect of contagious disease control. Preliminary results have shown the superiority of more advanced systems in disease control. More importantly, the simulation results have revealed several conditions in which advancement of I&T systems play a more vital role. The adapted evaluation model can be a useful tool in making optimal decisions, preferably if it is refined with more practical assumptions and specific considerations.
Z3001	Effect of Feed Restriction and Dietary Fat Type on Liver Fatty Acid Binding Protein mRNA Expression in the Broiler Chickens **Bahman Navidshad** and Maryam Royan Department of Animal Science, University of Mohaghegh Ardabili, Ardabil, Iran *Abstract*—Liver fatty acid binding protein (L-FABP) is the main cytosolic binding site for long chain fatty acids in hepatocytes. FABPs enhance uptake of fatty acids into the cell by increasing their concentration gradient, due to minimizing unbound fatty acid in the cell. A total of 720, 10-day old male Ross 308 broiler chicks were fed diets with unsaturated to saturated fatty acid ratio (U/S) of 2, 3.5, 5 or 6.5 as ad lib or skip a day feeding schedule (during 18-28 days of age). The results clearly showed that feed restriction induced L-FABP gene expression in the livers of broiler chickens. The L-FABP gene expression increased by dietary unsaturated to saturated fatty acid ratio of 6.5. No interaction of dietary U/S and feed restriction on the liver L-FABP gene expression was observed. This observation proposes that birds have a mechanism for regulation of fatty acids transfer under different nutritional condition.

15:55-16:10	**Coffee Break**

SESSION–4 (ICEEB&ICCPE&ICAAA 2015-9 presentations)

Session Chair: Associate Prof. Arzu Akpinar-Bayizit

Time: June 16, 2015 16:10-18:00

Venue: Conference Room-Güell A (Level 1)

C0005	Subcritical Hydrothermal Liquefaction of Process Rejects of a Wastepaper-Based Paper Mill for Bio-Fuels Production **Je-Lueng Shie,** Yi-Ru Liau, Wei-Sheng Yang, Yi-Han Wang, Kae-Long Lin, and Ching-Yuan Chang National I-Lan University**,** Taiwan *Abstract*—In this study, the feasibility of applying the subcritical hydrothermal liquefaction (SHTL) technique in treating organic wastes from process rejects of a wastepaper-based paper mill (PRPM) for high quality bio-fuels was addressed. The source of PRPM was rejected organic waste from a paper mill located at central Taiwan. PRPM was converted to various liquid products through SHTL using a mobile high-pressure autoclave reactor at a temperature and pressure ranging from 573 to 643 K and 80-250 bar, respectively. The experimental conditions such as temperature, residence time, pressure, the types of PRPM, and the pre-treatment of PRPM have an important effect on the product distributions. Liquid products obtained were sub-classified to bio-oil and water soluble and analysed by GC-MS. The proximate, calorific value, and elemental analysis (EA) of PRPM and SHTL residues were also addressed in this study. With the increase on temperature and pressure, the paraffin distribution of bio-oil was shifted to lower carbon components and it can be upgraded by hydrodeoxygenation (HDO) and catalytic cracking for specified commercial fuels. The details about the experimental conditions as well as the compositions of bio-oils are important for a better understanding of the biomass liquefaction pathways in subcritical hydrothermal media.
P0005	Survival of *Lactobacillus* spp. in Fruit Based Fermented Dairy Beverages **Tulay Ozcan**, Lutfiye Yilmaz Ersan, Arzu Akpinar Bayizit, Berrak Delikanli, and Abdullah Barat

	Uludag University, Department of Food Engineering, Turkey *Abstract*—In this study fruit based (apple and bluberry) fermented dairy beverages were made with *L. acidophilus* and *L. rhamnosus.* Viability of probiotic bacteria and sensory analysis were determined. The type of fruit and probiotic bacteria used were significantly effective on microbiological and sensory properties of fermented beverage (*p<0.01*). The growth proportion index (GPI) of *L. rhamnosus* was significantly higher than *L. acidophilus* in all samples during storage. In this study, both *Lactobacillus* strains showed good probiotic viability (>7 log cfu g^{-1}) and remain at this satisfactory viability levels even after 28 days of storage. All the products were evaluated with high sensory scores.
P0009	Evaluation of Fatty Acid Profile of Trabzon Butter Tulay Ozcan, Arzu Akpinar-Bayizit, Lutfiye Yilmaz-Ersan, Kader Cetin, and **Berrak Delikanli** Uludag University, Department of Food Engineering, Turkey *Abstract*—Trabzon butter, a dairy product with its unique flavor, aroma and color, is produced with traditional methods in Black sea region/Turkey. In the present study, the types and amounts of short, medium and long-chain saturated and unsaturated fatty acids of Trabzon butter sold in Bursa retail markets from different geographical origin were determined by gas chromatography. The total of short-chain fatty acid levels of Trabzon butter samples were 1.43% to 2.17%, while medium-chain fatty acid levels ranged from 0.09% to 12.00%. Minimum and maximum levels of long-chain fatty acids of samples were determined as 0.01% and 34.24%. The fatty acid profile showed that palmitic, stearic and myristic acids were dominant as saturated fatty acids whereas oleic was the major monounsaturated fatty acid in butter. It could be concluded that the fatty acid content of butter can be affected by raw milk quality, the breed type and the genetic and physiological factors of the animals, geographical location and the production practices.
P0017	Effect of High Pressure Homogenization on Improving the Quality of Milk and Sensory Properties of Yogurt: A Review **R. Massoud**, S. Belgheisi, and A. Massoud Standard Research Institute, Iran *Abstract*—High pressure processing is one of the advanced technologies to produce safe food, with better quality properties. In recent years, high pressure homogenization is a useful way which has attracted attention to improve the quality, increase shelf life, and maintain nutritional and sensory properties of milk and dairy products. Homogenization is considered a suitable alternative to thermal processes due to the lack of thermal damage. It is also one of the innovative technologies with a positive change in milk particles which leads to enhance the quality, shelf life and popularity of product. In this article, in addition to evaluation of the effect of homogenization on the fat particles, inactivating harmful bacteriophages and spoilage microorganisms, sensory and appearance properties of dairy products, the influence of high pressure homogenization on proteins and the viability of probiotic

	bacteria in dairy products especially yogurt will be reviewed. These changes result in the development of quality in dairy products and higher consumer's acceptance.
P0022	The Effect of Fenugreek and WPI on Release of Aromatic Acids from Shiraz Cheese -Iranian Traditional Cheese-Produced from Bovine Milk **Mehrnaz Aminifar** Standard Research Institute, Iran *Abstract*—In this study, the effect of fenugreek and whey protein isolate (WPI 85) on the release of acids from Shiraz cheese texture was investigated over 30 days of storage. Fenugreek and WPI 85 were used to modify the textural properties of low fat Shiraz cheese produced from bovine milk. Physicochemical properties, hardness (by texture analyzer), microstructure (by scanning electron microscopy (SEM)) and the amount of aroma release (by solid phase microextraction gas chromatography (SPME-GC-MS) of different types of Shiraz cheese were investigated. Textural parameters and microstructure of cheese matrix were affected by addition of fenugreek and WPI 80. In the presence fenugreek and WPI 80, the hardness of bovine Shiraz cheese was increased. The compaction of casein matrix was decreased when the bovine milk was used for cheese production due to decrease in casein content of milk. Addition of fenugreek and WPI play an important role in compaction of casein network. The release of acids from cheese matrix was affected by interaction of WPI-casein and fenugreek-casein. The Release of acids from cheese containing WPI could be related to the presence of B-lactoglobulin which has several binding sites.
Z0003	The Effect of *Myrtus communis* Oil Extract on Growth Performance and Immune Responses in Ross and Cobb Strain Broilers **Majid Goudarzi**, Iman Samiei, Shahram Nanekarani, and Farid Nasrolahi Department of Animal Science, College of Agriculture, Boroujerd Branch, Islamic Azad University, Boroujerd, Iran *Abstract*—This experiment was carried out to compare the performance and immune responses in Ross and Cobb broilers fed diets containing *Myrtus communis* oil extract (MCE). A total of 224 one-d-old broiler chickens randomly allocated to each of the 4 treatment groups, each with 4 replicate pens of 14 chicks. The experimental diets included two treatments for Ross strain – control (RC) and the diet contain 500mg/Kg MCE (RM) - and two treatments for Cobb strain –control (CC) and the diet contain 500mg/Kg MCE (CM). The performance parameters were measured during the experimental period and antibody titers against Newcastle disease virus were determined. The using of MCE in diet decreased feed intake and feed conversion ratio (FCR) but had not significant effect on daily body weight gain and live body weight. The lowest amount of feed intake and FCR were related to RM group. The relative weight of bursa of Fabricius increased significantly by using of MCE in both strains. In general, the results indicate that dietary inclusion of 500 mg/kg MCE can improve performance and immune system in Ross and Cobb broiler strains.
Z0017	Comparison and Application of Near-Infrared (NIR) and Mid-Infrared (MIR)

	Spectroscopy for Determination of Quality Parameters in Walnut Samples **Hosna Mohamadi Monavar** and Hosein Bagherpour Department of Biosystem Engineering, Bu Ali Sina University, Hamadan, Iran *Abstract*—Walnut composition is directly related to maintenance of quality. Chemical analyses have been determined using traditional and laborious methods, which are time-consuming and generate chemical waste. This justifies the development of fast and accurate alternative methodologies to control the composition. Near-infrared (NIR) and mid-infrared (MIR) spectroscopy techniques associated with chemometric tools have been applied in the development of several analytical methodologies for agricultural products. The aim of this study is to develop and compare these two spectroscopic techniques to determine the parameters of quality, such as moisture, protein, lipid, mineral composition and fatty acid which is grown in Iran, totally 66 samples. Proteins and fats accounted for more than 70% of the walnut kernel weight. Among other healthful properties, consumption of all the studied cultivars would be potentially beneficial to health. It was used near-infrared and mid-infrared spectroscopy associated with multivariate calibration methods based on partial least squares (PLS) algorithm. The determination coefficient (R2) for moisture, protein, lipid content and fatty acid were 0.78, 0.76, 0.85 and 0.87 for NIR and 0.66, 0.91, 0.92 and 0.62 for MIR, respectively, having an RMSECV (root mean square error of cross-validation) < 2.09%. The results show that both infrared (NIR and MIR) techniques have predictive abilities.
Z0019	Do Effective Micro-Organisms Affect Greenhouse Gas Emissions from Slurry Crusts? **Mohd Saufi B. Bastami**, David R. Chadwick, and Davey L. Jones Bangor University, United Kingdom *Abstract*—Slurry crusts form on the slurry surface and act as a primary barrier to gaseous emissions and could also be a zone where CH_4 is consumed by methane-oxidising bacteria present. However, slurry crusts have also been reported as sources of nitrous oxide emissions. This study evaluated methane oxidation rate and nitrous oxide emissions from a 8 months developed slurry crust followed by 8 weeks application of a mixed microbial consortia (effective microorganism; EM®). There was no clear evidence of CH_4 oxidation following EM® application. Whilst there was no significant reduction of N_2O fluxes from EM®-treated crusts, there was a tendency for lower N_2O emissions from EM®-sprayed crusts. N_2O emissions were greater than CH_4 consumption, resulting in net greenhouse gas (GHG) emissions of between 13.8-46.7 mg CO_2 eq. g^{-1} DM hr^{-1}. We conclude that it is important to consider net GHG emissions (CO_2 eq.) when reporting CH_4 oxidation from slurry crusts.
Z0020	Milk Composition and Mineral Concentration Affected by Elevation and Grazing Season in the Rangelands of North Sabalan Mountain, Iran **Farzad. Mirzaei Aghjeh Qeshlagh**, Roghayeh. Valizadeh Yonjalli, Ardavan. Ghorbani, and Bahram. Fathi Achachlouei

	University of Mohaghegh Ardabili, Department of animal science, Ardabil, Iran *Abstract*—This study was aimed to evaluate the effect of environmental factors on variations in milk composition and concentration of some macro minerals in Moghani sheep grazing in north of Sabalan rangelands. For surviving the effect of rangeland elevation, milk samples were collected from 60 grazing Moghani sheep in three elevation sites (respectively1300-1800, 1800-2500 and 2500-3200m). Effect of season was studied by sampling in two grazing season (spring and summer). Milk composition including Fat, Protein, Lactose, SNF and Ash was determined using Milcoscan. Studied Macro minerals included Calcium, Phosphorous, Sodium, Potassium and Magnesium. Mineral concentration was measured using Atomic Absorption Spectrophotometer and flame photometer. Analytical software of SAS (9.1) was used for Statistical analyses. Results of this study showed the significant effect of elevation on Fat, Protein, SNF and Ash ($p<0.05$). Protein and Lactose had higher percentage in the first, Fat in the second and SNF and Ash in the third elevation site. Elevation of sites had significantly affected the concentration of all studied macro minerals. Among the milk composition parameters, Fat and Lactose were significantly different between the seasons ($p<0.05$), and collected milk samples in summer showed the higher amounts of these parameters. Among the studied macro minerals, concentration of Ca, P and Na showed significant difference between spring and summer. Higher concentration of them was observed in summer. There was significant interaction between the elevation and season for Fat and all studied macro minerals. Overall according to the results of this study, environmental factor such as elevation and season had affected the studied parameters of Moghani sheep milk in Sabalan Mountain.

18:30	**Dinner**
Hotel Restaurant	

June 17, 2015 (Wednesday) 9:30~18:00 One Day Visit & Tour

Visit and Tour Schedules

Beginning	Catalonia Gran V á Hotel	9:30
First Stop	Museo Nacional de Ciencias Naturales (National Museum of Natural Sciences of Spain)	10:30-12:30
Lunch	Local Restaurant	12:30-13:30
Second Stop	Museo del Prado (The Prado Museum)	14:00-17:30
Ending	Catalonia Gran V á Hotel	18:00

Attractions

The **National Museum of Natural Science** is the National Museum of Natural History of Spain. It is situated in the center of Madrid, by the Paseo de la Castellana.The Museum is managed by the Spanish National Research Council (CSIC). The CSIC is one of the most prestigious research institutions in Europe. The Museum was created in 1772 by Charles III of Spain as the Gabinete Real de Historia Natural, changing names several times until its current denomination. Some of the more relevant components of the Museum collections are: “A Megatherium brought from Argentina in 1789” and “A Diplodocus”. The museum shares a big building, the Palacio de Exposiciones de las Artes e Industrias with the Industrial Engineering School of the Technical University of Madrid.

The **Museo del Prado** is the main Spanish national art museum, located in central Madrid. It features one of the world's finest collections of European art, dating from the 12th century to the early 19th century, based on the former Spanish Royal Collection, and unquestionably the best single collection of Spanish art. Founded as a museum of paintings and sculpture in 1819, it also contains important collections of other types of works. El Prado is one of the most visited sites in the world, and is considered one the greatest museums of art in the world. The numerous works by Francisco de Goya, the single most extensively represented artist, as well as by Diego Vel ázquez, El Greco, Titian, Peter Paul Rubens and Hieronymus Bosch are some of the highlights of the collection.

Tips:

The Visit and Tour will be charged for 60USD/per person. Only those who registered before June 1, 2015 can join. During the Visit and Tour, we may walk around Madrid Center for some viewings. Please bring hat and sun block if needed.

Conference Venue

Catalonia Gran V á Hotel

http://www.hoteles-catalonia.com/en/our_hotels/europa/spain/madrid/madrid/hotel_catalonia_gran_via/index.jsp

Gran V á 9, 28013 Madrid, Spain
Tel. +34 91.531.22.22
Fax. +34 91.531.54.69

This interesting hotel is located in the very heart of Madrid, just a few steps away from Plaza Cibeles and the Puerta del Sol, in a building dating from the beginning of the 20th century. Very close to the Prado Museum and the Thyssen Gallery, makes it possible to take full advantage of Madrid's cultural offerings. Furthermore, the hotel offers all of its visitors a fantastic restaurant, a terrace overlooking the Gran Via street with a bathing area heated, 4 function rooms that can be used to hold all types of events and SPA with fitness area where you can enjoy of an hour of SPA ROUTE and 15 minutes of massage of Japanese Foot Reflexology. (Subject to availability and capacity. Reservations required).

Tips: The organizer won't provide accommodation. It is suggested that early reservation to be made.

APCBEES Forthcoming Conferences

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CONFERENCE INFORMATION		PUBLICATION
Aug. 27-28, 2015, Hong Kong		
ICSEE 2015	2015 2nd International Conference on Substantial Environmental Engineering http://www.icsee.org/	Volume of International Proceedings of Chemical, Biological and Environmental Engineering Journal (IPCBEE, ISSN: 2010-4618)
ICBBE 2015	2015 2nd International Conference on Biomedical and Bioinformatics Engineering http://www.icbbe.com/	Journal of Medical and Bioengineering (JOMB, ISSN: 2301-3796)
CCEA 2015	2015 6th International Conference on Chemical Engineering and Applications http://www.cbees.org/ccea/	International Journal of Chemical Engineering and Applications (IJCEA, ISSN: 2010-0221)
Sep. 05-06, 2015, Shanghai, China		
ICREE 2015	2015 3rd International Conference on Renewable Energy and Environment (ICREE 2015) http://www.icree.org/	International Journal of Smart Grid and Clean Energy (IJSGCE, ISSN: 2315-4462)
ICBMS 2015	2015 3rd International Conference on Biological and Medical Sciences (ICBMS 2015) http://www.icbms.org	International Journal of Pharma Medicine and Biological Sciences (IJPMBS, ISSN: 2278-5221)
ICCEG 2015	2015 International Conference on Civil Engineering and Geology (ICCEG 2015) http://www.icceg.org	International Journal of Structural and Civil Engineering Research (IJSCER, ISSN: 2319-6009)
Sep. 14-15, 2015, Milan, Italy		
ICBEE 2015	2015 7th International Conference on Chemical, Biological and Environmental Engineering (ICBEE 2015) http://www.icbee.org/	Volume of International Proceedings of Chemical, Biological and Environmental Engineering Journal (IPCBEE, ISSN: 2010-4618)
ICECS 2015	2015 8th International Conference on Environmental and Computer Science (ICECS 2015) http://www.icecs.org/	International Journal of Computer Theory and Engineering (IJCTE, ISSN: 1793-8201)
ICBEM 2015	2015 5th International Conference on Biotechnology and Environment Management (ICBEM 2015) http://www.icbem.org/	International Journal of Bioscience, Biochemistry and Bioinformatics (IJBBB, ISSN: 2010-3638) Journal of Environmental Science and Development (IJESD, ISSN:2010-0264)

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

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