

## *Program*

# ***Bioenergy III: Present and New Perspectives on Biorefineries***

May 22 – 27, 2011

Lanzarote, Canary Islands, Spain

Conference Co-Chairs:

**Dr. Jesús Arauzo**  
Universidad de Zaragoza

**Dr. Cedric Briens**  
University of Western Ontario

**Dr. Dietrich Meier**  
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**Sunday, May 22, 2011**

16:00 – 18:00	Registration
18:00 – 19:00	Reception
19:00 – 20:30	Dinner

**NOTES**

- *Audiotaping, videotaping and photography of presentations are prohibited.*
- *Speakers – Please have your presentation loaded onto the conference computer prior to the session start (preferably the day before).*
- *Speakers – Please leave at least 5 minutes for questions and discussion.*
- *Please do not smoke at any conference functions.*
- *Turn your cellular telephones to vibrate or off during technical sessions.*
- *Be sure to make any corrections to your name/contact information on the Master Participant List or confirm (by your initials) that the listing is correct. A corrected copy will be sent to all participants after the conference.*
- *There will be an optional excursion to Timanfaya National Park. A second optional excursion is being considered.*

## **Monday, May 23, 2011**

- 07:30 – 09:00 Breakfast
- 09:00 – 09:15 Welcome and Conference Overview
- 09:15 – 09:35 **Bio-oil and bio-char production from cohesive meat and bone meal residues via fast pyrolysis in a bubbling fluidized bed reactor – Application of ICFAR intermittent solid slug feeding technology**  
Federico M. Berruti, ICFAR - University of Western Ontario, Canada
- 09:35 – 09:55 **Effects of bio-char on products yields during biomass pyrolysis in a bubbling bed reactor**  
Pietro Palmisano, ICFAR - University of Western Ontario, Canada
- 09:55 – 10:15 **New system for the continuous removal of bio-char from bubbling bed pyrolyzers**  
Franco Berruti, ICFAR - University of Western Ontario, Canada
- 10:15 – 10:35 **Flash pyrolysis of Kraft lignin in a bubbling bed**  
Pietro Palmisano, ICFAR - University of Western Ontario, Canada
- 10:35 – 11:00 Coffee break
- 11:00 – 11:20 **Modeling the pyrolysis of lignin**  
Raffaella Ocone, Heriot-Watt University, UK
- 11:20 – 11:40 **An investigation of the stability of pyrolysis oils using novel agents and techniques**  
Javeed Mohammad, ICFAR - University of Western Ontario, Canada
- 11:40 – 12:00 **Pyrolysis of plant biomass to produce chemicals of pesticidal value**  
Mohammad H. Hossain, ICFAR - The University of Western Ontario, Canada
- 12:00 – 12:15 Discussion
- 12:30 – 13:30 Lunch
- 13:30 – 17:00 Free time /*ad hoc* sessions
- 17:00 – 17:30 Afternoon coffee and snacks
- 17:30 – 17:50 **Bio-oil from the pyrolysis of canola, Brassica napus, and mustard, B. carinata and B. juncea, straw: The potential for insecticide development**  
Mohammad Hossain, ICFAR - The University of Western Ontario, Canada
- 17:50 – 18:10 **Analytical separation and Identification of insecticidal activity of pyrolyzed tomato residue bio-oil**  
Mohammad Hossain, Agriculture and Agri-Food Canada, Canada
- 18:10 – 18:30 **Pesticidal properties and chemical composition of tomato plant residue bio-oil**  
Mohammad Hossain, University of Western Ontario, Canada

**Monday, May 23, 2011 (continued)**

- 18:30 – 18:50      **Antioxidant activity of pyrolysis oil fractions from different biomass feedstocks**  
Javeed Mohammad, ICFAR - University of Western Ontario, Canada
- 18:50 – 19:00      Stretch break
- 19:00 – 19:20      **Co-pyrolysis of heavy oil and lignin bio-oil in a batch mechanically fluidized reactor**  
Ryan Lance, ICFAR - University of Western Ontario, Canada
- 19:20 – 19:40      **Co-pyrolysis of heavy oil and corn stover bio-oil in a continuous mechanically fluidized bed reactor**  
Ryan Lance, ICFAR - University of Western Ontario, Canada
- 19:45 – 21:00      Dinner
- 21:00 – 22:00      Poster session with social hour

## **Tuesday, May 24, 2011**

- 07:30 – 09:00 Breakfast
- 09:00 – 09:20 **The influence of biomass properties on the fluidization hydrodynamics of solid mixtures containing biomass**  
Mohammad Latifi, University of Western Ontario, Canada
- 09:20 – 09:40 **Study of Rubisco recovery from alfalfa juice by ion-exchange chromatography in expanded bed**  
Syrine Kerfail, Laboratoire d'Ingénierie des Systèmes Biologiques et des procédés - INSA Toulouse, France
- 09:40 – 10:00 **Hydrogen production by aqueous-phase reforming of glycerol from the biodiesel manufacturing**  
Jesús Arauzo, University of Zaragoza, Spain
- 10:00 – 10:20 **Utilization of glycerol, pyrolysis oil and its co-products in the existing reformers to produce syn-gas**  
Ragavendra P. Balegedde Ramachandran, University of Twente, The Netherlands
- 10:20 – 10:50 Coffee break
- 10:50 – 11:10 **Advanced biofuels and added value products from residual quasi-homogeneous biomass: from ethanol to drop-in fuels**  
Jean-Michel Lavoie, University of Sherbrooke, Canada
- 11:10 – 11:30 **LIBRA, A novel lignin biorefinery approach for the pyrolytic extraction of phenolics and bio-char from 2nd generation biorefinery side-streams**  
Paul J. de Wild, Energy research Centre of the Netherlands (ECN), The Netherlands
- 11:30 – 11:50 **Lignocellulosic conversion to ethanol: the environmental life cycle impacts**  
Aiduan Li, University of Bath, UK
- 11:50 – 12:10 Discussion
- 12:15 – 17:00 Boxed lunch and free time
- 17:00 – 17:30 Afternoon coffee with snacks
- 17:30 – 17:50 **Development of a novel vibrating reactor for testing bio-oil gasification catalysts**  
Mohammad Latifi, ICFAR - The University of Western Ontario, Canada
- 17:50 – 18:10 **Preliminary study of gasification with steam/enriched air mixtures of sewage sludge and of the char obtained in its pyrolysis process**  
José Luis Sánchez, Universidad de Zaragoza, Spain
- 18:10 – 18:30 **Preliminary study among conventional pyrolysis and catalytic pyrolysis of sewage sludge.**  
Noemi Gil Lalaguna, Universidad de Zaragoza, Spain

**Tuesday, May 24, 2011 (continued)**

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|---------------|---|
| 18:30 – 18:50 | <b>Effects of agitational intensity on production of ethanol using thermotolerant yeast <i>Sachharomyces cerevisiae</i> in a digitally controlled pilot scale bioreactor of 150 liters</b><br>Syed Farman Ali Shah, Mehran University of Engineering & Technology |
| 18:50 – 19:10 | Discussion  |
| 19:30 – 21:00 | Dinner  |
| 21:00 – 22:00 | Social hour   |

**Wednesday, May 25, 2011**

07:30 – 09:00	Breakfast
09:00 – 09:20	<b>An overview on the pulp and papermaking process from agroforestry residues: A biorefinery approach</b> Fernando Bimbela, Universidad de Zaragoza, Spain
09:20 – 09:40	<b>Study of the desulphuration power of the char from meat and bone meal pyrolysis</b> José Luis Sánchez, University of Zaragoza, Spain
09:40 – 10:00	<b>Alternative feedstock for fluid catalytic cracking: Conversion of waste vegetable oil to gasoline and gaseous olefins</b> Peter Bielansky, Vienna University of Technology, Austria
10:00 – 10:20	<b>Catalytic cracking of biodiesel: Using the FCC-process to convert FAME into oxygen-free gasoline</b> Alexander Weinert, Vienna University of Technology, Austria
10:20 – 10:40	<b>Catalytic pyrolysis of biomass</b> Esther Sulman, Tver Technical University, Russia
10:40 – 11:10	Coffee break
11:10 – 11:30	<b>The role of catalytic site deposition on cobalt catalysts supported on carbon nanotubes for Fischer-Tropsch synthesis</b> Eva Epelde, Universidad del País Vasco, Spain
11:30 – 11:50	<b>Propylene production from 1-butene and ethylene catalytic cracking: Study of the performance of HZSM-5 zeolites and silicoaluminophosphates SAPO-34 and SAPO-18</b> Eva Epelde, Universidad del País Vasco, Spain
11:50 – 12:10	<b>Synthesis, characterization and evaluation of two forms of sulphated zirconia for biofuel production by triglyceride cracking</b> Elizabeth J. Eterigho, Newcastle University, UK
12:10 – 12:30	<b>The influence of various variables on in-situ transesterification of Jatropha curcas</b> F.H. Kasim, Newcastle University, UK
12:30 – 12:45	Discussion
13:00 – 19:00	Boxed lunch and excursion to Timanfaya National Park
19:30 – 21:00	Dinner
21:00 – 22:00	Social hour



**Thursday, May 26, 2011**

- 07:30 – 09:00 Breakfast
- 09:00 – 09:20 **Bio-butanol production using repeated batch with immobilized cells: process alternative to continuous**  
Mpho Setlhaku, TU Dortmund, Germany
- 09:20 – 09:40 **Fermentative upgrading of a biomass pyrolysis byproduct**  
Lars Rehmann, The University of Western Ontario, Canada
- 09:40 – 10:00 **Fermentability of sugars derived from the concentrated sulfuric acid hydrolysis of Nordic woods**  
Kando K. Janga, Norwegian University of Science and Technology (NTNU), Norway
- 10:00 – 10:20 **Synergistic use of metabolic engineering and adaptive mutation for improvement of xylose fermentation in *Zymomonas mobilis***  
Rachel Chen, Georgia Institute of Technology, USA
- 10:20 – 10:40 **Intensification of bioethanol production by simultaneous saccharification and fermentation (SSF) in an oscillatory baffled reactor (OBR)**  
Joseph Ikwebe, Newcastle University, UK
- 10:40 – 11:10 Coffee break
- 11:10 – 11:30 **An overview on production of alcohol fuels**  
Janusz Kozinski, York University, Canada
- 11:30 – 11:50 **Butanol extractive fermentation to simultaneously produce properties improved bio-diesel and butanol in a water and energy-saving operation way**  
Zhongping Shi, Jiangnan University, China
- 11:50 – 12:10 **Extractive fermentation for hexanoic acid production and its conversion to hexanol**  
Byoung-In Sang, Korea Institute of Science and Technology, Korea
- 12:10 – 12:30 **Engineering an *E. coli* binary culture for consolidated production of biofuel from hemicelluloses**  
Rachel Chen, Georgia Institute of Technology, USA
- 12:30 – 12:45 Discussion
- 13:00 – 14:30 Lunch
- 14:30 – 17:00 Free Time
- 17:00 – 17:30 Afternoon coffee with snacks
- 17:30 – 17:50 **Application of batch oscillatory baffled bioreactor to produce biobutanol using *Clostridium* GBL 1082**  
Nasratun Masngut, Newcastle University, UK

**Thursday, May 26, 2011 (continued)**

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|---------------|---|
| 17:50 – 18:10 | <b>Valuable alleles for bioenergy traits such as biomass yield and adaptation to abiotic stresses</b><br>Priti Krishna, University of Western Ontario, Canada |
| 18:45 – 19:45 | Social hour   |
| 20:00 – 22:00 | Banquet   |

**Friday, May 27, 2011**

07:30 – 09:00	Breakfast
09:00 – 09:45	<b>Workshop I – To be announced</b>
09:45 – 10:30	<b>Workshop II – Bio-Char</b> <b>Coordinator: Paul J. deWild</b>
10:30 – 11:00	Coffee Break
11:00 – 11:45	<b>Workshop III – Options for upgrading of bio-crude oil</b> <b>Coordinator: Dietrich Meier</b>
11:45 – 12:15	<i>Ad hoc</i> Discussion – What is next? Closing of Conference
12:30 – 13:45	Lunch and Departure

## **Bioenergy III: Present and New Perspectives on Biorefineries**

### **Poster List**

**16 May 2011**

1. **Kinetic study of biomass pyrolysis under oxidative conditions**  
Aitziber Erkiaga, University of the Basque Country, Spain
2. **Sewage sludge torrefaction as previous stage for thermochemical processing**  
Noemi Gil Lalaguna, Universidad de Zaragoza, Spain
3. **Simulation and optimization of DME synthesis process in reaction-regeneration cycles**  
Ainara Ateka, Universidad del País Vasco, Spain
4. **Energy valorization of cork stopper wastes in conical spouted bed combustor**  
Maria J. San Jose, Universidad del Pais Vasco, Spain
5. **Hydrogen production by steam gasification of biomass in a conical spouted bed reactor**  
A. Erkiaga, University of the Basque Country, Spain