

Schedule



3rd Iberoamerican Congress
4th Latin American Congress
2nd International Symposium on Lignocellulosic Materials
Biorefineries
Science, Technology and Innovation for the Bioeconomy
November 23 to 25, 2015, Concepción-Chile

Sunday 22th

18:30 Welcome cocktail (at the premises of UDT)

Monday 23th

09:00 – 09:30 Opening ceremony
Welcome words: Alex Berg, Chairman

09:30 – 10:15 **Plenary session: Piergiuseppe Morone, University of Rome, Italy**
Making the transition towards a biobased economy

10:15 – 10:45 Coffee break

Economic, environmental and social sustainability

10:45 – 11:20 Keynote Speaker
Orlando Rojas, Aalto University, Finland
Valorization of Biorefinery Streams by the Development of Advanced Materials from Lignin and Nano/micro-celluloses

11:20 – 11:40 **Sustainability analysis of lignocellulosic bioethanol production and electricity generation. Western Mexico case study**
Arturo Sánchez, National Polytechnic Institute - IPN, Mexico

11:40 – 12:00 **Techno-economical feasibility assessment of butanol production from lignocellulosic biomass**
Julián Quintero, Pontifical Catholic University of Valparaíso, Chile

12:00 – 12:20 **Kinetic model for the oxidation of hazardous compounds in an industrial effluent from forest biomass processing**
Fernando E. Felissia, National University of Misiones - UNaM, Argentina

12:20 – 12:40 **Contribution of chemurgy to the advancement of biorefinery in the context of circular economy - a polish perspective**
Janusz Golaszewski, University of Warmia and Mazury in Olsztyn, Poland

12:40 – 13:40 Lunch

13:40 – 14:15 Keynote Speaker
Ronalds Gonzalez, NC State University, USA
Challenges and opportunities in the bio-refinery economy

14:15 – 14:35 **Systemic view of bio refineries linked to the production of food and energy**
Jorge Antonio Hilbert, National Agricultural Technology Institute - INTA, Argentina

14:35 – 14:55 **Productivity and costs of two low-investment biomass harvesting systems applied in a situation of mixed forest of semi-natural origin**
Patricio Carey, Austral University of Chile - UACH, Chile

14:55 – 15:15 **Assessment of supply chains for pre-treatment of forest residues in Chile**
Tobias Zimmer Karlsruhe Institute of Technology - KIT, Germany

15:15 – 15:35 **Lignocellulosic biofuels co-production and co-generation using integrated biorefineries. A solution to the treatment of agro-industrial wastes**
Arturo Sánchez Carmona, National Polytechnic Institute - IPN, Mexico

15:35 – 16:05 Coffe Break

Chemical conversion

Keynote Speaker
Franck Dumeignil, University of Lille, France
EuroBioRef: Designing next generation biorefineries

2G Bioethanol Biorefinery using sugarcane lignocellulosic biomass residues
Francisco Girio, National Laboratory of Energy and Geology - LNEG, Portugal

Where are we with green Biorefineries?
Rafal Bogel-Lukasik, National Laboratory of Energy and Geology - LNEG, Portugal

Conversion of inulin-containing and lignocellulosic biomass to the platform chemical 5-hydroxymethylfurfural in water
David Steinbach, Karlsruhe Institute of Technology - KIT, Germany

Lipid extraction from *Chlorella vulgaris* using electromagnetic field
Catalina Bernal López, University of Valle, Colombia

Keynote Speaker
Johanna Buchert, Natural Resources Institute, Finland
Research as tool to create value-added forest-based bioeconomy

Development of selective fractionation methods for the integrated upgrade of corn cobs
Florabela Carvalheiro, National Laboratory of Energy and Geology - LNEG, Portugal

Using magnetic resonance imaging to monitor process flows of multiphase systems
Robert Powell, University of California, Davis, USA

Solid state fermentation of chemically untreated sugarcane bagasse for fungal production of single cell oil as biodiesel feedstock
Mahesh Khot, Savitribai Phule Pune University, India



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Bioethanol

- 16:05 – 16:40 Keynote Speaker
Valdeir Arantes, University of Sao Paulo, Brazil
The potential for the fractionation of lignocellulose for integrated production of biofuel and value-added products: A case of bioethanol, food additives and nanocellulose
- 16:40 – 17:00 **Improvement of the lignocellulose hydrolysis by use of auxiliary enzymes**
Oriana Salazar, University of Chile, Chile
- 17:00 – 17:20 **The influence of sono-assisted alkaline pretreatment of sugarcane bagasse in enzymatic hydrolysis for cellulosic ethanol production**
Luiz Pereira Ramos, Federal University of Parana, Brazil
- 17:20 – 17:40 **Comparison between microwave and conduction-convection heating for autohydrolysis processing in the production of high added-value compounds and substrates for biofuel under the biorefinery concept**
Héctor A. Ruiz, Autonomus University of Coahuila, Mexico
- 17:40 – 18:00 **Different strategies for lignocellulose sugars conversion into ethanol from phosphoric acid steam exploded olive tree pruning**
Mercedes Ballesteros, Centre for Energy, Environment and Technology - CIEMAT, Spain

Thermochemical conversion

- Keynote Speaker
Jaap Kiel, University of Twente, The Netherlands
The role of thermochemical conversion in biorefinery concepts: not just combustion
- Effects of biomass source on the composition and reactivity of thermochemical reaction products**
Steve Kelley, North Carolina State University, USA
- Upgrading of low-grade biogenic feedstock by innovative screw pyrolysis**
Marco Tomasi Morgano, Karlsruhe Institute of Technology - KIT, Germany
- Pyrolysis of mixtures of concentrated spent pulping liquor and sodium formate to produce a phenolic bio-oil**
Adriaan van Heiningen, University of Maine, USA
- Selective production of formic acid from aqueous phase bio-oil by catalytic oxidation using heteropoly acids (for bio-oil hydrodeoxygenation)**
Mauricio Escobar, Technological Development Unit - UDT, Chile

Tuesday 24th

- 9:00 – 9:20 **Second generation bioethanol from *Eucalyptus globules labill* and *Nothofagus pumilio* using ionic liquids**
Maria Cristina Ravanal Espinosa, University of Chile, Chile
- 9:20 – 9:40 **Ethanol production from CMC and Avicel using ethanogenic *Escherichia coli* expressing a novel endoglucanase**
Inés Loaces, Biological Research Institute Clemente Stable - IIBCE, Uruguay
- 9:40 – 10:00 **Sequential thermochemical hydrolysis, enzymatic saccharification and fermentation to ethanol of stover from white corn with ethanogenic bacteria**
Alfredo Martinez, National Autonomous University of Mexico - UNAM, Mexico
- 10:00 – 10:40 Coffe Break
- Catalytic hydrodeoxygenation of pyrolysis oil over nickel-based catalysts under H₂/CO₂ atmosphere**
Wolfgang Olbrich, Karlsruhe Institute of Technology - KIT, Germany
- Concept for combined heat and power production from wood via gasification followed by catalytic gas cleaning**
Tim Schulzke, Fraunhofer UMSICHT, Germany
- Activated biochar derived from agricultural residual biomass pretreated with alkaline agent**
Luis Sebastian Romero-Hermoso Osorio, Scientific and Technological Bio-resource Nucleus - BIOREN, Chile



Microalgae

- 10:40 – 11:20 Keynote Speaker
Gabriel Acién, University of Almería, Spain
Integral utilization of microalgae: Production of biofertilizers
- 11:20 – 11:40 **Chilean Technological Consortium “Desert Bioenergy S.A.”**
Laura Azócar, Scientific and Technological Bio-resource Nucleus - BIOREN, Chile
- 11:40 – 12:00 **Multi-scenario economic evaluation for a biorefinery based on microalgae biomass with application of anaerobic digestion**
Cristian P. Bravo-Fritz, Pontifical Catholic University of Chile, Chile
- 12:00 – 12:20 **High pressure biomass conversion processes for biofuels and chemicals production**
Pablo E. Hegel, National Council of Scientific and Technical Research - CONICET, Argentina
- 12:20 – 12:40 **Energy recovery through the anaerobic digestion of the residual microalgae biomass from a biodiesel production process**
Alvaro Torres, Scientific and Technological Bio-resource Nucleus - BIOREN, Chile
- 12:40 – 13:00 **Evaluation of technical feasibility of biogas upgrading using microalgae**
Leslie Meier Figueroa, Scientific and Technological Bio-resource Nu4cleus - BIOREN, Chile
- 13:00 – 14:00 Lunch
- 14:00 – 14:20 **Production of PHB production from glycerol waste by *B. xenovorans* LB400**
Pamela Villegas Pizarro, Federico Santa María Technical University - UTFSM, Chile
- 14:20 – 14:40 **Medium chain length production by *Pseudomonas fluorescens* and unrelated carbon source**
Diana Marcela Vanegas Hernández, Pontificia Bolivariana University, Colombia
- 14:40 – 15:00 **Life cycle assessment of biomethane from waste water algae: The All-Gas approach**
Daniel Maga, Fraunhofer Institute for Environmental, Safety and Energy Technology UMSICHT, Germany
- 15:00 – 15:40 Coffe Break
- 15:40 – 18:00 Poster presentation
- 20:00 Official dinner

Cellulose fibers and microfibers

- Keynote Speaker
Gary Chinga-Carrasco, Paper and Fibre Research Institute - PFI, Norway
Kraft pulps from Eucalyptus and Pinus radiata - raw materials for nanocellulose production and novel bio-applications
- Comparative analysis of commercial cellulases cocktails for the production of nanocrystalline cellulose**
Germano Andrade Siqueira, University of Sao Paulo, Brazil
- Biocomposites from microfibrillated cellulose and biodegradable polymers**
Patricia Eisenberg, National Institute of Technology - INTI, Argentina
- Cellulose nanofibrils from agro-industrial waste: Production and characterization**
Fabiola Valdebenito, Scientific and Technological Bio-resource Nucleus - BIOREN, Chile
- Characterization of *Eucalyptus* bark and its potencial use for fiber and cellulose nanofibrils**
Miguel Pereira, University of Concepción, Chile
- Biomass valorisation by heterogeneous catalysis: Ethylene glycol production via hydrogenolysis of cellulose using Pd-WXC/C catalyst**
Antonio Aprigio da Silva Curvelo, Universidade de Sao Paulo, Brazil

- Affibody functionalized bacterial cellulose tubes for bioseparation applications**
Ilari Filpponen, Aalto University, Finland
- The role of ligno-nanocellulosics in the biorefinery concept**
Maria Soledad Peresin, VTT, Finland

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Wednesday 25th

Natural polyphenols

- 9:00 – 9:40 Keynote Speaker
Antje Potthast, University of Natural Resources and Life Sciences - BOKU, Austria
Analyzing biorefinery product streams - challenges, requirements and (some) solutions
- 9:40 – 10:00 **Mild chemical modification of acetosolv lignin from several Chilean sources**
Danny Eugenio García Marrero, Technological Development Unit - UDT, Chile
- 10:00 – 10:20 **Use of organosolv lignin modified by alkaline catalyst in adhesive resins: Evaluation of the behavior**
Marcela Norambuena, Biotechnology Center, Chile
- 10:20 – 10:40 **The potential of cork-containing barks for biorefineries: structural and chemical features, fractionation and conversion routes for materials and chemicals**
Helena Pereira, University of Lisbon, Portugal
- 10:40 – 11:20 Coffee break
- 11:20 – 11:40 **Novel synthetic and natural adhesives: performance evaluation using ABES**
Cecilia Fuentealba, Technological Development Unit - UDT, Chile
- 11:40 – 12:00 **Biochar-based materials for the sustainable catalysis and photocatalysis**
Juan Matos Lale, Technological Development Unit - UDT, Chile
- 12:00 – 12:20 **Poster award ceremony**

Carbohydrates and cellulosic fibers applications

- Keynote Speaker
Frank Miletzky, Papiertechnische Stiftung, Germany
Between two stools: the paper industry in a change
- Ethanol-water fractionation of wheat straw and saccharification of the cellulosic residue**
Juan Carlos Villar, National Research Institute and Agricultural and Food Technology - INIA, Spain
- Determination of hemicellulose extraction conditions from alkaline-sulfite pretreated sugar cane bagasse with a crude enzymatic extract from *Bacillus pumilus***
Maiara Paparele dos Santos, Universidade de São Paulo, Brazil
- Addition of poly-electrolytes on recycled fiber for paper sheet formation**
José Turrado Saucedo, University of Guadalajara, Mexico
- Biodegradable films formed by polyelectrolyte complexes of xylan and chitosan**
Paulina Mocchiutti, National University of Litoral, Argentina
- Foamed packaging made from cellulose acetate**
Rafael Erdmann, Fraunhofer UMSICHT, Germany

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