5th Latin American Congress on Biorefineries
From laboratory to industrial practice
January 7-9, 2019 - Concepción, Chile

MONDAY 7TH

08.30 – 09:30 Registration

09.30 – 09:45 Opening: Alex Berg, Chairman of the Organizing Committee

09:45 – 10:30 **PLENARY SESSION** (LECTURE HALL 1)
Biomass co-processing in existing refineries: the future of refining.
Eduardo Falabella, Universidade Federal do Rio de Janeiro, Brazil.

10:30 – 11:00 Coffee break

ENVIRONMENT (LECTURE HALL 1)

11:00 – 11:35 **KEYNOTE SPEAKER**
Environmental impact of crops and agricultural residues as feedstocks for bio-based product development.
Marisol Berti, North Dakota State University, United States.

11:35 – 11:55 **Acceptance of bioenergy in Chile – an empirical analysis of public opinion.**
Kira Schumacher, Institute for Industrial Production (IIP), Karlsruhe Institute of Technology (KIT), Germany.

11:55 – 12:15 **Integrated logistics for improved feedstock quality and consistency.**
Timothy Rials, University of Tennessee, United States.
Presented by: Stephen S Kelley, North Carolina State University, United States.

12:15 – 13:30 Lunch

13:30 – 13:50 **A sustainable supply chain design for phase III biorefinery: a Colombian case study.**
Andrea Espinoza Pérez, Universidad de Santiago de Chile, Chile.

13:50 – 14:10 **Novel and sustainable biorefinery concept based on green technologies for corn, wheat, and rapeseed residues.**
María E. Martínez, Fraunhofer Chile Research Foundation – Center for systems biotechnology, Chile.

14:10 – 15:10 **4 MINUTES POSTER SESSION**

15:10 – 15:30 Coffee break

ADHESIVES (LECTURE HALL 1)

15:30 – 16:05 **KEYNOTE SPEAKER**
Phenolic resins derived from medium boiling fraction of fast pyrolysis oil – application as wood glue for non-load-bearing wooden materials.
Tim Schulzke, Fraunhofer UMSICHT, Germany.

16:05 – 16:25 **Sustainable Biomaterials for wood panels adhesives.**
Bruno Gorrini, Bioforest, Chile.

16:25 – 16:45 **Ecofriendly adhesives based on pine bark extracts.**
Felipe Guzmán, UDT, Universidad de Concepción, Chile.

FOOD ADDITIVES (LECTURE HALL 2)

KEYNOTE SPEAKER
Natural functional ingredient from south of Chile biomass.
Claudia Mardones, Universidad de Concepción, Chile.

Metabolomics in Forest Species to Identify Chemical Responses to Biotic Stressors: the beginning of bioactive phytochemical discovery and application.
Andy Pérez, Universidad de Concepción, Chile.

South American fruits, a source of bioactive compounds.
Guillermo Schmeda-Hirschmann, Instituto de Química de Recursos Naturales, Universidad de Talca, Chile.

Effects of *Pinus radiata* pine seed oil consumption on murine model: Evidence of a new functional alimentary additive for the control of diabetes .
Juan Pablo González, Biotechnology Center, Universidad de Concepción, Chile.

ALGAE (LECTURE HALL 2)

KEYNOTE SPEAKER
Algae based biorefineries: boon or bane? Lessons learnt from a decade of research and demonstration units worldwide.
Guido A. Reinhardt, IFEU-Institute for Energy and Environmental Research, Wilckensstraße 3, Germany.

Functional biomaterials from macroalgae: Experiences from the laboratory to the field.
Cristian Agurto, Universidad de Concepción, Chile.

Modelling the effect of environmental conditions on microalgae's growth during continued culture.
Héctor Zúñiga, Pontificia Universidad Católica de Valparaíso, Chile.

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TUESDAY 8TH

CELLULOSE MICROFIBRILS (LECTURE HALL 1)

9:00 – 9:35	**KEYNOTE SPEAKER** **Deep eutectic solvent treatments in a production of nanocelluloses.** Henrikki Liimatainen, University of Oulu, Finland.
9:35 – 9:55	**Comparison between two methods of pretreatment of agriculture waste for the production of cellulose nanofibrils.** Gianluca Ottolina, Istituto di Chimica del Riconoscimento Molecolare, Italy.
9:55 – 10:15	**Current research on nanocellulose applications in food and pharmacy fields at West Virginia University.** Gloria Oporto, West Virginia University, United States.
10:15 – 10:35	**Biorefinery: macro, micro and nanocellulose fibers from forest and agro-industrial waste.** Lourdes M. Orejuela, Universidad San Francisco de Quito, Ecuador.
10:35 – 10:55	**Preparation and characterización of β-chitin microfibers (ChMF) from squid fishery wastes.** Gustavo Cabrera, UDT, Universidad de Concepción, Chile.
10:55 – 11:15	**The role of the degree of polymerization of cellulose in the deconstruction of the cell wall for obtaining cellulose nanofibrils (NFC).** Miguel Pereira, Universidad de Concepción, Chile.
11:15 – 11:45	Coffee break

RESIDENTIAL WASTE (LECTURE HALL 2)

KEYNOTE SPEAKER
Domiciliary waste: how much have we advanced in its management and treatment and what opportunities are there?
Carla Pérez, UDT, Universidad de Concepción, Chile.

Combustion of refined renewable biomass fuel (RRBF) in a fluidized bed.
Tim Schulzke, Fraunhofer UMSICHT, Germany.

Advanced thermoconversion process for municipal and hazardous solid wastes treatment.
Daniel Travieso Pedroso, UDT, Universidad de Concepción, Chile.

Pyrolysis of municipal solid waste in Chile: An economic and environmental assessment.
Tobias Zimmer, Karlsruhe Institute of Technology (KIT), Germany.

Pyrolysis of post-consumer plastics waste.
Juan Toledo, UDT, Universidad de Concepción, Chile.

Updraft gasification of municipal solid waste with pollutant emissions reduction.
Einara Blanco Machin, Universidad de Concepción, Chile.

BIOPLASTICS (LECTURE HALL 1)

11:45 – 12:20	**KEYNOTE SPEAKER** **Bioplastics – Facts and Myths** Stephan Kabasci, Fraunhofer UMSICHT, Germany.
12:20 – 12:40	**Novel strategies for the developing "superabsorbent polymers" based on pine bark polyflavonoids for environmental applications.** Danny E. García Marrero, UCSC, Chile.
12:40 – 13:00	**A novel PHA synthetization technique and its environmental advantage in terms of microplastic impacts.** Giovanna Croxatto Vega, Technical University of Denmark, Denmark.
13:00 – 13:20	**Synthesis and process engineering of glycerol based polyesters as toughness enhancers for commercial bioplastics.** Oscar Valerio, Universidad de Concepción, Chile.
13:20 – 14:30	Lunch
14:30 – 15:05	**KEYNOTE SPEAKER** **Active biobased packaging for protection of food products.** Aleksandra Nešić, UDT, Universidad de Concepción, Chile.
15:05 – 15:25	**Physicochemical characterization of poly-3-hydroxybutyrate produced by *Bulkholderia xenovorans* LB400.** Claudia Sanhueza, Universidad de La Frontera, Chile.
15:25 – 15:45	**Toughening of PLLA by various poly(caprolactone-co-(D-lactic acid)) copolymers.** Stephan Kabasci, Fraunhofer UMSICHT, Germany.
15:45 – 16:05	**New Biodegradable compound intended for forest industry.** Catalina Castillo, UDT, Universidad de Concepción, Chile.
16:05 – 17:00	**COFFEE & POSTER SESSION**
17:00	**SCIENCE & BEERS (HANG OUT, MUSIC AND SOUVENIRS)**
20:30	**OFFICIAL DINNER**

CARBON MATERIALS (LECTURE HALL 2)

KEYNOTE SPEAKER
Graphitization of loblolly pine wood and bio-choice lignin investigated by in-situ x-ray diffraction and electron energy loss spectroscopy.
Stephen S. Kelley, North Carolina State University, United States.

Preparation of photoluminescence carbon dots from renewable liquid sources by hydrothermal synthesis.
Rodrigo Navia, Universidad de La Frontera, Chile.

Pyrolysis processing of animal manures for producing valued-added biochar and energy.
Cristina Segura, UDT, Universidad de Concepción, Chile.

Sustainable hydrothermal Carbons for Biorefinery-related Catalysis
Monika Bosilj, Fraunhofer Institute for Solar Energy Systems, Germany

KEYNOTE SPEAKER
Carbon-based photocatalysts to produce solar fuels and chemicals from biomass derivative´s molecules.
Juan Matos, UDT, Universidad de Concepción, Chile.

Microwave assisted hydrothermal carbonization: a new option to obtain carbon nanostructures from beet molasses.
Luis Romero-Hermoso, Universidad de La Frontera, Chile.

Carbonization as recycling strategy for carbon and nutrients.
Klaus Mikula, University of Natural Resources and Life Sciences, Vienna, Austria.

Carbon aerogel-supported Ni for upgrading biomass-derived vapors: A Py-GC/MS approach.
Luis Arteaga, Universidad del Bío-Bío, Chile.

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WEDNESDAY 9TH

09:00 – 9:45 **PLENARY SESSION** (LECTURE HALL 1)
Biobased aromatics – challenges, hurdles and opportunities.
Ludo Diels, VITO/UA, Belgium.

09:45 – 10:15 Coffee break

BIOLOGICAL PROCESSES (LECTURE HALL 1)

10:15 – 10:50 **KEYNOTE SPEAKER**
Lignocellulosic Biomass and Residues as Potential Substrates for the Industrial Biotechnology.
Joachim Venus, Leibniz Institute for Agricultural Engineering and Bioeconomy, Germany.

10:50 – 11:10 **From wheat straw to lactic acid: organosolv pretreatment of agriculture waste followed by homolactic fermentation.**
Pierfrancesco Ricci, Istituto di Chimica del Riconoscimento Molecolare, Italy.

11:10 – 11:30 **Organosolv re-use liquor strategy applied to enzymatic saccharification of lignocellulosic biomass.**
Priscilla Vergara Alarcón, Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA) - Madrid, Spain.

11:30 – 11:50 **Recovery of resources from landfill leachate through the use of an *Opuntia ficus* (L.) Mill polymer.**
Lorena Jorquera, Pontificia Universidad Católica de Valparaíso. Chile.

11:50 – 12:10 **Biohydrogen production from *Opuntia* co-substrates with an alkaline pretreatment.**
Carlos Lucho Constantino, Universidad Autónoma del Estado de Hidalgo, Mexico.

12:10 – 12:30 **Use of wastewater sludge as a potential raw material for the production of biodiesel using microwave technology.**
Maria Eugenia González, Universidad de La Frontera, Chile.

12:30 – 13:00 Poster award ceremony

CHEMICAL PRODUCTS (LECTURE HALL 2)

KEYNOTE SPEAKER
Exergo-environmental and exergo-economic analyses of a furfuryl alcohol production plant.
Teresita Marzialetti, Universidad de Concepción, Chile.

Pectin optimization extraction from watermellon waste.
Carlos de Souza Castro, Instituto Federal de Educação, Ciência e Tecnologia Goiano, Brazil.

Preliminary evaluation of the use of lees generated in the refining of the vegetable oil mixture as a substrate for the production of biosurfactant.
Márcio Costa Pinto da Silva, SENAI CIMATEC. Brazil.

Efficient strategy based on centrifugal partition chromatography to recover bioactive components from chilean plants and agrofood by-products.
Edgar Pastene, Universidad de Concepción, Chile.

Role of the extractables of native gymnosperms and their relationship with the natural durability of wood.
José Becerra, Universidad de Concepción, Chile.

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