III Latin American Congress
Biorefineries
Ideas for a sustainable world
November 19th to 21st 2012, Pucón, Chile

PROGRAM **Monday 19th**

09:00 - 09:50

Plenary Session: Hans Grosse Werner.
Executive Director of the Forest Institute (INFOR).

Salón Araucanía

09:50 - 10:10 Coffe Break

< Biorefineries >

Key Speaker: Klaus Niemelä. VTT Technical Research Centre of Finland, Finland.
Pulping by-products: past, present and future.

Laura Azócar. Universidad de la Frontera, Chile.
New microalgae biorefinery concept.

10:10 - 12:00

Daniel John Hayes. The University of Limerick, Ireland.
DIBANET: Collaboration in biorefinery research between Europe and Latin America.

Álvaro Urzúa. Biocomsa, Chile.
Conversion of lignocellulosic biomass to biofuels. Analysis of technological alternatives for Chile.

Salón Lonquimay

< Biodiesel >

Key Speaker: Adesoji Adesina. The University of New South Wales, Australia.
Process intensification for advanced biodiesel production from residual oils.

Cristina Segura. Unidad de Desarrollo Tecnológico, Universidad de Concepción, Chile.
Vehicle biofuel from a byproduct of the kraft pulp industry.

Guillermo Labadie. Universidad Nacional de Rosario, Argentina.
Conversion of biodiesel tanks into a new industrial raw material.

Omar Resendiz. Universidad Autónoma de Chapingo, Mexico.
Energy comparison between castor-oil plant biodiesel (*Ricinus comunnis*) vs diesel.

Salón Coñaripe

12:20 - 14:00 Lunch

< Biorefineries >

Key Speaker: Tobias Stern. Kompetenzzentrum Holz GmbH, Austria.
Market orientation in wood biorefinery research.

Gerfried Jungmeier. Institut für Wasser, Energie und Nachhaltigkeit , Austria.
Sustainability assessment, classification and international perspectives of bioenergy-driven biorefineries and biomaterials - Activities of IEA Bioenergy Task 42 "Biorefinery"

14:00 - 16:10

Paul P. Kolodziejczyk, Biolink Consultancy Inc., Canada.
How to take an idea from a laboratory to market – Contract R&D organizations.

Arne Gröngröft. Deutsches Biomasseforschungszentrum, Germany.
Assessment of concepts for wheat grain and straw based biorefineries.

Salón Lonquimay

< Biodiesel >

Key Speaker: Lukas Wick. Helmholtz Centre for Environmental Research, Germany.
Walking the tightrope of bioavailability: microbial dynamics on vapour-phase chemicals.

Hernán Vera. Universidad de Antofagasta, Chile.
Detection of genes involved in fatty acid metabolism of *Botryococcus braunii* microalga

Gustavo Ciudad. Universidad de la Frontera, Chile.
In situ transesterification of *Nannochloropsis gaditana* wet biomass: influence of process conditions on lipid extraction and faae yield.

Jaime Cano. INGBIOCOMB, Colombia.
Biomethanol semi industrial production of glycerin from biodiesel oil industry.

Salón Coñaripe

16:10 - 16:30 Coffe Break

< Bioethanol >

Key speaker: Ángel Martinez. Centro de Investigaciones Biológicas, Spain.
Lignocellulose deconstruction as shown by 2D-NMR.

Juan Carlos Gentina. Universidad Católica de Valparaíso, Bioenercel, Chile.
Influence of inhibitors derived from eucalyptus wood chip pretreatment on the behavior of *zymomonas mobilis nrrl b-806* strain.

16:30 - 1840

Mariana Peñuela Vásquez. Universidad de Antioquia, Colombia.
Sweet sorghum bagasse, an alternative for the production of second generation ethanol.

Axel Kraft. Fraunhofer Institute for Environmental, Safety and Energy Technology UMSICHT, Germany.
New pathway to fuels or fuel additives starting from short-chain alcohols.

Salón Lonquimay

< Biomaterials >

Key speaker: Detlef Schmiedl. Fraunhofer Institute for Chemical Technology ICT, Germany.
Lignins to aromatic compounds. The base catalysed degradation in continuous reactors - A tentative review.

Miguel Pereira. Universidad de Concepción, Chile.
Effect of lignin content on radiata pine wood sawdust acetylation.

Freddy Muñoz. Universidad del Bío Bío, Chile.
Eucalyptus nitens bark fiber and its application as reinforcement in thermoplastic biomaterials.

Marcela Norambuena. Bioenercel, Centro de Biotecnología, Universidad de Concepción, Chile.
Evaluation of lignins recovered from different pretreatment processes for use as replacement of phenol in adhesives for plywood production.

Salón Coñaripe

21:00 - 22:30 **Official dinner.**

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PROGRAM **Tuesday 20th**

09:00 - 09:50

Plenary Session: Amar Mohanty. University of Guelph, Canada.
Value-added uses of co-products from biofuel industries: a path forward in sustainable biorefinery.

Salón Araucanía

09:50 - 10:10 Coffe Break

< Bioethanol >

Key Speaker: Steve Kelly. North Carolina State University, USA.
The Integrated Biomass Supply Systems (IBSS) Partnership: Technology and Supply Systems for Integrated Production of Advanced Biofuels in the Southeastern US.

Germán Aroca. Universidad Católica de Valparaíso, Bioenercel, Chile.
Ethanol production in continuous bioreactor with cell retention.

10:10 - 12:00

Joao Claudio Thomeo. Universidade Estadual Paulista, Brazil.
CMCase production by the newly isolated *Myceliophtora sp.I-1D3b* in packed bed solid state bioreactor.

Alejandro Garcia. Universidad de Chile, Chile.
Effect of using lignocellulose mixtures in bioethanol production of second generation.

Salón Lonquimay

< Biomaterials >

Key speaker: Rocío Sierra. Universidad de los Andes, Colombia.
Determination of an oxidizing agent dosage method and the effect on the selectivity of a lignin pretreatment process in alkaline medium.

Andrea Silva-Weiss. Universidad de la Frontera, Chile.
Agro biomaterials based on chitosan and starch functionalized with polyphenols from murta (*Urgni molinae turcz*) leaf extract.

Cecilia Fuentealba. Unidad de Desarrollo Tecnológico, Universidad de Concepción, Chile.
Valuation of wheat straw for the production of chemicals for industrial use.

Jochen Forstner. Fraunhofer Institute for Chemical Technology, Germany.
Furans as offspring for broad applications in chemical and polymer industry / Hydrothermal processes for biomass conversion or its components.

Salón Coñaripe

12:20 - 14:00 Lunch

< Bioethanol >

Key speaker: Rudine Antes. Bioforest – Celulosa Arauco, Chile.
TBA.

Roberto da Silva. Universidade Estadual Paulista, Brasil.
Structural analysis by ATR-FTIR of pretreated sugarcane bagasse using ozone and ultrasound for cellulosic ethanol production.

14:00 - 16:10

Carolina Parra. Bioenercel, Centro de Biotecnología, Universidad de Concepción, Chile.
Effect of steam explosion in *Eucalyptus globulus* on the structural characteristics and bioethanol production.

Teresita Marzialetti. Bioenercel, Centro de Biotecnología, Universidad de Concepción, Chile.
Second-generation ethanol in Chile: optimazed autohydrolysis process of *Eucalyptus globulus*.

Salón Lonquimay

< Biomaterials >

Key Speaker: Steve Peretti. North Carolina State University, USA.
The integrated biomass research initiative: pretreatment and conversion systems for the production of advanced biofuels and bioproducts.

Bernd Weber. Universidad Autónoma del Estado de México. Mexico.
Animal fat from knackeries for liquid fuel and chemicals production.

Silvia Riquelme. Unidad de Desarrollo Tecnológico, Universidad de Concepción, Chile.
Biodegradable thermoplastic materials from macroalgae of the Chilean coast.

Martín Mittelbach, University of Graz, Austria.
Analysis and evaluation of extracts from microalgae *Nannochloropsis sp.* as renewable source for valuable chemicals.

Salón Coñaripe

16:10 - 16:30 Coffe Break

< Biogas-Biochemical Processes >

Key speaker: Robbert Kleerebezem. Delft University of Technology, The Netherlands.
The VFA-platform for the production of chemicals and bioenergy from waste.

Alberto Reis. Laboratório Nacional de Energia e Geologia, Portugal.
Do microalgae biorefineries really exist? Concept, applications and future directions.

16:30 - 1840

Álvaro Torres. Universidad de la Frontera, Chile.
Biogas production potential and ammonium release in anaerobic digestion of spent microalgae.

Raúl Muñoz. University of Valladolid, Spain.
Enhancing the biochemical methane potential of microalgae via biomass pretreatment.

Salón Lonquimay

< Thermochemical Processes >

Key speaker: William J. DeSisto. University of Maine, USA.
Formate-Assisted Pyrolysis (FAsP) of woody biomass.

Walter Noack. Eula, Universidad de Concepción, Chile.
Life cycle analysis of co-combustion processes of coal and biomass.

Daniel Sánchez. Universidad de Los Andes, Colombia.
Waste tire rubber gasification using air-steam for partial oxidation and N_2 as carrier gas.

Daniela Espinoza. Unidad de Desarrollo Tecnológico, Universidad de Concepción, Chile.
Residual forest biomass torrefaction in Chile.

Salón Coñaripe

PROGRAM **Wednesday 21st**

09:00 - 09:50 **Plenary Session: Valdeir Arantes. University of British Columbia, Canada.**
The mutual interdependency of pretreatment and enzymatic hydrolysis to ensure the effective production of a competitive sugar stream from biomass substrates.

Salón Araucanía

09:50 - 10:10 Coffe Break

10:10 - 12:00

Biogas-Biochemical Processes

Key Speaker: Germán Buitrón. Universidad Nacional Autónoma de México, Mexico.
Implementing an optimization strategy in real time to improve biological hydrogen production.

Regina Vasconcellos. Universidade Federal de Santa Catarina, Brazil.
Hydrogen production and partial characterization of a bacterial consortium obtained from lagoon sediment.

Fernnado González-Fermoso. Instituto de la Grasa de Sevilla (IGS), Spain.
Comparison of several olive oil mill wastewaters as electron donor in a bioelectrical system

Jan Bartacek. Institute of Chemical Technology, Czech Republic.
Improvement of lignocellulose degradability using anaerobic rumen fungi.

Salón Lonquimay

Thermochemical Processes

Key Speaker: Rodrigo Navia. Universidad de la Frontera, Chile.
Influence of different operational conditions on the pyrolysis of lignocellulosic biomass to produce biochar with adsorbent characteristics.

Niels Müller. Unidad de Desarrollo Tecnológico, Universidad de Concepción, Chile.
Fractionation of flash pyrolysis liquids for chemical applications: an exploratory study.

Tarja Tamminen. Technical Research Centre of Finland, Finland.
Analytical pyrolysis as tool in biorefinery-related research.

Jean Benoit. ISIMA S.A., Chile.
SATIB-HPPB Procedure and Waste Energy Conversion.

Salón Coñaripe

POSTER PRESENTATIONS

Camilo Muñoz. Universidad de Antofagasta, Chile. — Selection of marine bacteria with cellulase activity for the pre-treatment of microalgal biomass.

Felipe Almendras. Universidad de Concepción, Chile. — Preliminary evaluation of sewage sludge as raw material for biodiesel production.

Oriana Salazar. Universidad de Chile, Chile. — Steam and organosolv pretreatments for processing hardwood biomass.

Ximena Bustos. CIPA-Chile. — Use of ophiostoma spp. albino fungi, as bio-treatment for d.don radiata pine wood., and its effects on the penetration of PVAc adhesive.

Mónica Gómez. Universidad de Antioquia, Colombia. — Production of fungal cellulases using lignocellulosics as carbon source.

Francisco Vasquez. BioEnercel S.A. Chile. — Evaluation of the characteristics of different lignins to be used in the formulation of adhesive resins for boards.

Juan Fernando Arenas. Universidad de Antioquia, Colombia. — Ethanol production from the rachis cellulosic fraction of palm oil.

Héctor Berrios. Universidad de Antofagasta, Chile. — Enzymatic treatment of the cell wall in Botryococcus braunii.

Carolina Noya. Universidad de la República, Uruguay. — Sulphur free lignin reactivity during early cooking stages.

Claudia Tramón. Universidad de Concepción, Chile. — Use of organosolv lignins as support materials in controlled release fertilizers.

Salón Araucanía

POSTER PRESENTATIONS

Inés Loaces. Instituto de Investigaciones Biológicas Clemente Estable (IIBCE), Uruguay.	Application of functional metagenomics for bioethanol production from cellulose.
Roberto da Silva. IBILCE - UNESP, Brazil.	Effect of glucose and fructose on β-glucosidases of fungi Thermoascus aurantiacus CBMAI756 and Penicillium viridicatum RFC3.
Celián Román Figueroa. Universidad de Chile, Chile.	Carbon footprint and energy efficiency of perennial oils with energy potential, a preliminary approach.
Gairik Sachdeva. Harvard University, USA.	Using in-vivo RNA scaffolds for metabolic substrate channeling towards high value chemicals.
Milla Alves Baffi. Universidade Federal de Uberlândia, Brazil.	Characterization of a β-glucosidase produced by a Brazilian thermophilic fungal strain isolated from cane bagasse.
Karla Araya. Universidad de la Frontera, Chile.	Feasibility of the biotechnological production of biodiesel from microalgae oil using *Rhizopus oryzae* as whole cell catalyst.
Marjatta Kleen. VTT Technical Research Centre of Finland.	Comparison of batch and flow-through type pressurized hot water extraction processes for isolation of xylan from birch chips.
Robinson Muñoz. Desert Bioenergy S.A. Techological Consortium.	Thermochemical conversion of spent microalgal biomass.
Roberto Landaeta L. Pontificia Universidad Católica de Valparaíso. Bioenercel S.A.	Evaluation of the tolerance mechanism of flocculant Saccharomyces cerevisiae to inhibitors derived from lignocellulosic material.
Lorena Soler. Bioenercel, Chile.	Comparison of the adsorption behavior of cellulolytic enzymes on two lignocellulosic materials of different composition.
Heidi Schalchli. Universidad de La Frontera, Chile	Production of ligninolytic enzymes by a white-rot fungus grown on potato organic wastes.
Roberto Valenzuela. Bioenercel, Chile.	Fermentability of Eucalyptus globulus pretreated by steam explosion by thermotolerant strain of Saccharomyces cerevisiae.
Naiane Sangaletti. Laboratório de Óleos e Gordura-ESALQ/USP.	Energy flow in biodiesel production chain with ethanolic miscella.
Álvaro González. University of La Frontera, Chile.	Influence of different operational conditions on the pyrolysis of lignocellulosic biomass to produce biochar with adsorbent characteristics.
Adesoji Adesina. The University of New South Wales, Australia.	Alumina-supported Potassium Orthophosphate Bi-functional Catalyst for Ethanolysis of Waste Cooking Oil to Biodiesel: An Optimisation Study.
Camila Tapia. Pontificia Universidad Católica de Valparaíso, Chile.	IRSES-ALGAENET: Las microalgas como catalizadores de la conversión de nutrientes residuales en bioenergía.
Laura Azócar Ulloa. Desert Bioenergy S.A., Chile.	Critical flux increase in anaerobic membrane bioreactor through addition of flocculants.
María del Carmen Ruiz Domínguez. Universidad de Cádiz, Spain.	CEPSA-ALGINCO2 Project: Production of Lipids of Energy Value with Microalgae Grown with Industrial CO_2.
Leslie Meier Figuera. Universidad de La Frontera, Chile.	Photosynthetic removal of CO_2 through microalgae, an alternative to increase the calorific value of biogas.
Lorena Álvarez. Pontificia Universidad Católica de Valparaíso, Bioenercel S.A.,Chile.	Evaluation of cellulase in the hydrolysis of pretreated wood from Eucalyptus globulus for bioethanol production.

POSTER PRESENTATIONS

Paulina Silva. Bioenercel, Chile.	Effect of inhibitors derived from lignocellulosic material on growth and ethanol production in *Saccharomyces cerevisiae* ATCC 4126.
Juan Carlos Gentina. Bioenercel, Chile.	Influence of inhibitors from eucalyptus chip pretreatment on the behavior of *Zymomonas mobilis* nrrl b-806 strain.
Germán Aroca. Bioenercel, Chile.	Ethanol production in continuous bioreactor with cell retention.
Roberto Landaeta Le-Fort. Bioenercel, Chile.	Evaluation of the tolerance mechanism of flocculant *Saccharomyces cerevisiae* to inhibitors derived from lignocellulosic material.
Lorena Alvarez. Bioenercel, Chile.	Comparison of the adsorption behavior of cellulolytic enzymes on two lignocellulosic materials of different composition.
Oriana Salazar. Universidad de Chile, Chile.	Comparison of different pure and recycled ionic liquids in the eucalyptus pretreatment for the production of bioethanol.
Jan Bartacek. Institute of Chemical Technology, Czech Republic.	Biogas production from municipal wastewater at low temperature - effluent treatment.
Freddy Valdés. Universidad de la Frontera, Chile.	Micro-aeration assisted by silicone membrane for H2S removal in anaerobic fixed-structured bed reactor.

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