



BUENOS AIRES 2023

JUNE 4 - 8

WCCE11 - 11th WORLD CONGRESS OF CHEMICAL ENGINEERING

IACCHE - XXX Inter-American Congress of Chemical Engineering

CAIQ2023 - XI Argentinian Congress of Chemical Engineering

CIBIQ2023 - II Ibero-American Congress of Chemical Engineering

Buenos Aires - Argentina - June 4-8, 2023

"The global chemical engineering working for a better future world"



GS07-Global Symposium on Waste Valorisation, Circular Economy and Industrial Symbiosis

Monday, June 5th

Tuesday, June 6th

Classroom CIBIQ

PROGRAM

ORAL SESSIONS

OPENING REMARKS "Waste Valorisation, Circular Economy and Industrial Symbiosis"

Angeles Blanco, Complutense University of Madrid, Spain

SESSION 1. CIRCULAR ECONOMY (I)

Chair: *Silvina M. Manrique, INENCO-CONICET, University National of Salta, Argentina*

Monday, June 5th

Classroom CIBIQ

ID2322 KEYNOTE	9:00-9:30	"RETOPROSOST-2-CM: A Program for sustainable production and industrial symbiosis in the Community of Madrid (Spain)" Blanco, A. ¹ ; <u>Monte, M.C.</u> ¹ ; Negro, C. ¹ ; Prieto, A. ² ; Martínez, M.J. ² ; Villar, J.C. ³ ; Sanchez-Hervás, J.M. ⁴ ¹ Complutense University of Madrid (Spain). ² Center for Biological Research (Spain). ³ National Institute of Agricultural and Food Research and Technology (Spain). ⁴ Center for Energy, Environmental and Technological Research (Spain)
ID1624	9:30-9:45	"Dairy wastewater sludge drying kinetics" Tarlera, J.; <u>Zecchi, B.</u> ; Martínez Garreiro, J. Universidad de la República (Uruguay)
ID2218	9:45-10:00	"Sustainable municipal wastewater management targeting phosphorus recovery: focus on struvite production" Santos, A.F. ¹ ; Alvarenga, P. ² ; Gando-Ferreira, L.M. ¹ ; <u>Quina, M.J.</u> ¹ ¹ University of Coimbra (Portugal). ² LEAF-University of Lisbon (Portugal)
ID2419	10:00-10:15	"Aplicación de la economía circular en concentrados de desaladoras para la recuperación selectiva de litio" <u>Fernández-Escalante, E.</u> ; Ibañez, R.; San Román, M.-F. Universidad de Cantabria (Spain)
ID1568	10:15-10:30	"Technical Potential for the Production of Biogas, Fertilizers and Reuse Water in STPs and WTPs" <u>Berni, M.D.</u> ¹ ; Manduca, P.C. ¹ ; Dorileo, I.L. ² ; Vasconcelos, L.G. ² ¹ University of Campinas (Brazil). ² Federal University of Mato Grosso (Brazil)

SESSION 2. CIRCULAR ECONOMY (II)

Chair: *Angeles Blanco, Universidad Complutense de Madrid, Spain*

Monday, June 5th

Classroom CIBIQ

ID2215 KEYNOTE	14:00-14:30	"Biochemical methane potential of industrial potato waste: valorization instead of wasting" Almeida, P.V.; Henriques, F.S.; Gando-Ferreira, L.M.; <u>Quina, M.J.</u> University of Coimbra (Portugal)
ID2839	14:30-14:45	"Valorization of vegetable waste from leek and lettuce to produce highly concentrated lignocellulose micro and nanofibrils" <u>Sanchez-Salvador, J.L.</u> ¹ ; Marques, M.P. ^{1,2,4} ; Brito, M.S.C.A. ^{3,4} ; Negro, C. ¹ ; Monte, M.C. ¹ ; Manrique, Y.A. ^{2,4} ; Santos, R.J. ^{2,4} ; Blanco, A. ¹ ¹ University Complutense of Madrid (Spain). ² LSRE-LCM-University of Porto (Portugal). ³ LEPABE-University of Porto (Portugal). ⁴ ALiCE-University of Porto (Portugal)
ID2434	14:45-15:00	"Continuous Production of Pickering Emulsions containing leek fibers" Marques, M.P. ^{1,3} ; Sanchez-Salvador, J.L. ⁴ ; Negro, C. ⁴ ; Monte, M.C. ⁴ ; Manrique, Y.A. ^{1,3} ; Santos, R.J. ^{1,3} ; Blanco, A. ⁴ ; Dias, M.M. ^{1,3} ; Brito, M.S.C.A. ^{2,3} ¹ LSRE-LCM-University of Porto (Portugal). ² LEPABE-University of Porto (Portugal). ³ ALiCE-University of Porto (Portugal). ⁴ University Complutense of Madrid (Spain)

ID1515	15:00-15:15	“Modelado de la extracción de compuestos fenólicos de orujo de uva Tannat en múltiples etapas de equilibrio con una solución hidroalcohólica” <u>de Mattos, R.</u> ; Zecchi, B. <i>Universidad de la República (Uruguay)</i>
ID2175	15:15-15:30	“Aprovechamiento de la Semilla de Lúcumá (Pouteria lucuma) como Fuente de Almidón para Usos Industriales” Huayta, F.; Cárdenas-Toro, F.; Gusukuma, M. <i>Pontificia Universidad Católica del Perú (Peru)</i>
SESSION 3. CIRCULAR ECONOMY (III) Chair: Margarida Brito, University of Porto, Portugal		Monday, June 5th Classroom CIBIQ
ID3056 KEYNOTE	16:30-17:00	“Valorization of lignocellulosic waste for the production of PHAs using microbial consortia” Crespo, D.; de Eugenio, L.I.; Herráez, M.; Prieto, A.; Martínez, M.J.; <u>Barriuso, J.</u> <i>Centro de Investigaciones Biológicas Margarita Salas-CSIC (Spain)</i>
ID3059 KEYNOTE	17:00-17:30	“Polylactic acid synthesis via ring-opening polymerization of lactide catalyzed by free and immobilized lipases” Murguiondo, C.; de Eugenio, L.I.; Calviño, E.; Cañada, F.J.; Martínez, M.J.; Barriuso, J.; <u>Prieto, A.</u> <i>Centro de Investigaciones Biológicas Margarita Salas-CSIC (Spain)</i>
SESSION 3. CIRCULAR ECONOMY (III) (Cont.) Chair: Margarida Brito, University of Porto, Portugal		Monday, June 5th Classroom CIBIQ
ID3057	18:30-18:45	“Saccharification of gamma-valerolactone pretreated birchwood by using a Talaromyces amestolkiae enzymatic cocktail: saccharification of wood after pretreatment with green solvent” de Eugenio, L.I. ¹ ; Alonso, D.M. ² ; Vila, F. ² ; de la Torre, L.I. ¹ ; de Salas, F. ¹ ; Prieto, A. ¹ ; López-Granados, M. ² ; <u>Martínez, M.J.</u> ¹ ¹ Centro de Investigaciones Biológicas Margarita Salas-CSIC (Spain). ² Instituto de Catálisis y Petroleoquímica-CSIC (Spain)
ID1614	18:45-19:00	“Material biobasado a partir de micelio de hongos y subproductos lignocelulósicos de la región del litoral de Argentina” <u>Picco, C.M.</u> ; Meyer, C. I.; Regenhardt, S.A <i>Universidad Nacional del Litoral-CONICET (Argentina)</i>
SESSION 4. CIRCULAR ECONOMY (IV) Chairs: Nadjib Drouiche, CRTSE, Algeria Alicia Prieto, CIB, Spain		Tuesday, June 6th Classroom CIBIQ
ID2512	9:00-9:15	“Poly(3-hydroxybutyrate) and poly(3-hydroxybutyrate-co-3-hydroxyvalerate) production in a sugar beet pulp based biorefinery” <u>Vittou, O.</u> ¹ ; Psaki O. ¹ ; Sarafidou, M. ¹ ; Ladakis, D. ¹ ; Pateraki, C. ¹ ; Athanasoulia, I. ² ; Giannoulis, A. ² ; Briassoulis, D. ² ; Koutinas, A. ¹ ¹ Department of Food Science and Human Nutrition, ² Department of Natural Resources Development and Agricultural Engineering-Agricultural University of Athens (Greece)
ID2031	9:15-9:30	“Identificación de las proteínas del lactosuero presentes en concentrados de caseinomacropéptido obtenidos a escala laboratorio” Loria, K.G. ^{1,5} ; Fernández L. ¹ ; Caminata Landriel, S. ² ; Costa, H. ^{2,3} ; Pilosof, A.M.R. ⁴ ; <u>Fariás, M.E.</u> ¹ ¹ Departamento de Tecnología, ² Departamento de Ciencias Básicas-Universidad Nacional de Luján (Argentina). ³ INEDES, (CONICET-UNLu) (Argentina). ⁴ ITAPROQ -CONICET, Universidad de Buenos Aires (Argentina). ⁵ CONICET (Argentina)
ID2973	9:30-9:45	“Caracterización de biochar obtenido de cáscara de cacao mediante pirólisis asistida por microondas” <u>Correa-Abril, J.</u> ^{1,3} ; <u>Cabrera, E.V.</u> ¹ ; Parra, Y.J. ² ; Stahl, U. ¹ ; Rodríguez, J.M. ³ ; Vega, M.A. ^{2,3} ; Robles, N. ¹ ; Albacura, E. ¹ ¹ Universidad Central del Ecuador (Ecuador). ² Universidad Central del Ecuador (Ecuador). ³ Universidad Técnica de Manabí (Ecuador)
ID2772	9:45-10:00	“A proof of concept for the electro-refinery for organics: Selective electroproduction of acetic acid from t-CNSL waste by using DSA electrode” Medeiros, M.C. ¹ ; Castro, S.S.L. ² ; <u>dos Santos, E.V.</u> ³ ; Rodrigo, M.A. ⁴ ; <u>Martínez-Huitle, C.A.</u> ¹ ¹ Institute of Chemistry, ³ School of Science and Technology-Federal University of Rio Grande do Norte (Brazil). ² State University of Rio Grande do Norte (Brazil). ⁴ University of Castilla-La Mancha (Spain)
SESSION 5. CIRCULAR ECONOMY (V) Chair: Ana Balea, Universidad Complutense de Madrid, Spain		Tuesday, June 6th Classroom CIBIQ
ID2877 KEYNOTE	14:00-14:30	“The Plastics2Olefins Project, Recycling plastic waste into high-value materials- Closing the Loop” <u>Sánchez-Hervás, J.M.</u> ¹ ; Ortiz, I. ¹ ; Marquez, A. ¹ ; Yuste, R. ² ¹ CIEMAT (Spain). ² Repsol Technology Lab (Spain)
ID1433	14:30-14:45	“Laboratory-scale study of quantity and concentration of pollutant gases derived from the incineration of the COVID-19 pandemic waste” Borja-Plazarte, D. ¹ ; Fabara, D. ² ; Carvajal, C.G. ¹ ; Chiriboga, G. ¹ ; Araujo, P. ¹ ; <u>Montero-Calderon, C.</u> ¹ ¹ Fac. de Ingeniería Química, ² Fac. de Ingeniería en Geología, Minas, Petróleos y Ambiente-Universidad Central del Ecuador (Ecuador)
ID1645	14:45-15:00	“Valorization of Municipal Solid Waste through catalytic fast hydrolysis over natural zeolites” Márquez, A. ¹ ; Sánchez-Hervas, J.M. ¹ ; Ortiz, I. ¹ ; Arteaga-Pérez, L.E. ² ; Alejandro-Martín, S. ³ ¹ CIEMAT (Spain). ² LPTC, ³ LGCAP-Universidad del Bío-Bío (Chile)
ID2849	15:00-15:15	“Liquid fuels production via catalytic hydroisomerization of heavy naphtha from hydrothermal co-liquefaction” Ruiz, E.; Diez, A.; Benito, M.; Ortiz, I.; <u>Sánchez, J.M.</u> <i>CIEMAT (Spain)</i>

ID3083	15:15-15:30	<p>“Planta de transformación de plásticos residuales en combustibles sintéticos” Palma, M.E.^{1,2,3}; Cruz, D.^{1,3}; Quispe, R.^{1,3}; Saavedra, N.^{1,3}; Rejas, L.M.^{1,3} ¹Universidad Mayor Real y Pontificia de San Francisco Xavier de Chuquisaca (Bolivia). ²Organización Boliviana de Mujeres en Ciencia-Capítulo Chuquisaca (Bolivia). ³CEPI (Bolivia)</p>
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POSTER SESSION

Monday, June 5th (COFFEE AREA) 10:30-11:00 h & 16:00 -16:30 h

ID1447	<p>“Production of lipids and carotenoids using low-cost waste-derived media and the oleaginous yeast <i>Rhodospiridium toruloides</i>” Gallego-García, M.; Moreno, A.D.; Fernández, J.L.; Ballesteros, I.; Iglesias, R.; Negro, M.J. CIEMAT (Spain)</p>
ID1486	<p>“Characterization of tidal waste for its use as raw material in the manufacture of lignocellulosic products” Moral, A.¹; Tijero, A.²; Greyer, V.¹; Blanco, A.²; Negro, C.² ¹Pablo de Olavide University (Spain). ²Complutense University of Madrid (Spain)</p>
ID1616	<p>“Aglomerado a partir de micelio de hongos comestibles y subproductos lignocelulósicos de Argentina” Picco, C.M.; Meyer, C. I.; Regenhardt, S.A. Universidad Nacional del Litoral - CONICET (Argentina)</p>
ID1680	<p>“Obtención de compuestos fenólicos a partir de cáscara de arroz mediante hidrólisis alcalina” Xavier, L.; Rocha, M.; Pisani, J.; Zecchi, B. Universidad de la República (Uruguay)</p>
ID1688	<p>“Oxidación selectiva de glicerol en medio acuoso empleando catalizadores metálicos soportados sobre CeO₂” Bianchi, G.S.; Meyer, C.I.; Duarte, H.A.; Marchi, A.J.; Regenhardt, S.A. INCAPE, Universidad Nacional del Litoral - CONICET (Argentina)</p>
ID1754	<p>“Diseño de proceso en el tratamiento de polvo de horno de arco eléctrico” Doldán, M.E.¹; Duarte-Guigou, M.^{2,3}; Pereira, G.²; Ohanian, M.¹ ¹Universidad de la República (Uruguay). ²Viento Sur Ingeniería (Uruguay)</p>
ID1974	<p>“Obtención de glucosa a través de hidrólisis ácida de los residuos de banano, cacao, palma africana y bagazo de caña de azúcar” Abril-González, M.F.; Vele-Salto, V.P.; Pinos-Vélez, V.P. Universidad de Cuenca (Ecuador)</p>
ID2041	<p>“Desenvolvimento de uma manta térmica a partir de resíduos têxteis de polipropileno para aplicação na construção civil” Ribeiro, V.A.S.; Paz, M.F.; Souza, R.P.; Jabur, A.S. Universidade Tecnológica Federal do Paraná (Brazil)</p>
ID2217	<p>“Circular phosphorus-Recovery potential from sewage and slaughterhouse wastewater” Castelló, E.; Santiviago, C.; Maidana, N.; Caro, F.; Larnaudie, V. Universidad de la República (Uruguay)</p>
ID2337	<p>“Improved recycling of a gasification fly ash: an integrated waste management approach in the line of Circular Economy” Fernández-Pereira, C.; Arroyo, F.; Leiva, C.; Luna-Galiano, Y.; Vilches, L.F. University of Seville (Spain)</p>
ID2587	<p>“Succinic acid production from potato residues by the action of <i>Actinobacillus succinogenes</i>” Escanciano, I.A.; Ladero, M.; Santos, V.E.; Blanco, A. Complutense University of Madrid (Spain)</p>
ID2593	<p>“Comprehensive use of waste from a brewery for the bioproduction of succinic acid” Escanciano, I.A.; Ladero, M.; Santos, V.E.; Blanco, A. Complutense University of Madrid (Spain)</p>
ID3025	<p>“Comparison of different strategies for leather structure defect minimization” Penayo-Bernal, M.^{1,2}; Martins Rafael, H.^{1,2}; Ferreira, M.J.³; Pinto, V.³; Gaião, J.⁴; Rivaldi, D.⁵; Santamaria-Echart, A.^{1,2}; Barreiro, F.^{1,2} ¹CIMO, ²SusTEC-Instituto Politécnico de Bragança (Portugal).³Centro Tecnológico do Calçado de Portugal (Portugal).⁴Centro Tecnológico das Indústrias do Couro (Portugal). ⁵Universidad Nacional de Asunción (Paraguay)</p>
ID3030	<p>“Strategies to improve leather moldability and malleability” Martins Rafael, H.^{1,2}; Penayo-Bernal, M.^{1,2}; Ferreira, M.J.³; Pinto, V.³; Santamaria-Echart, A.^{1,2}; Barreiro, F.^{1,2} ¹CIMO, ²SusTEC-Instituto Politécnico de Bragança (Portugal).³Centro Tecnológico do Calçado de Portugal (Portugal).⁴Centro Tecnológico das Indústrias do Couro (Portugal).</p>
ID3055	<p>“Fungus-bacteria consortia for the production of lactic acid as a precursor of PLA” de Eugenio, L.I.; Murgiondo, C.; Galea, S.; Prieto, A.; Barriuso, J. Centro de Investigaciones Biológicas Margarita Salas-CSIC (Spain)</p>
ID3058	<p>“Synthesis of xylooligosaccharides by a fungal GH10 endoxylanase and its glycosynthase variant” Pozo-Rodríguez, A.; Méndez-Liter, J.A.; de Eugenio, L.I.; Barriuso, J.; Prieto, A.; Martínez, M.J. Centro de Investigaciones Biológicas Margarita Salas-CSIC (Spain)</p>
ID3060	<p>“Comparative hydrolysis of polylactic acid catalyzed by free and immobilized lipases” Murguiondo, C.; de Eugenio, L.I.; Rodríguez-Sánchez, L.; Sánchez de Rojas, I.; Martínez, M.J.; Barriuso, J.; Prieto, A. Centro de Investigaciones Biológicas Margarita Salas-CSIC (Spain)</p>

ID3089

“Evaluación de Propiedades Catalítica de Materiales Mesoporosos tipo CeSBA-15 para Transformaciones de Biomasa en Productos Químicos”

Guiñazú, N.¹; Poncio, C.¹; Sánchez Faba, E.¹; Moyano, L.²; Eimer, G.¹; Falcón, H.¹

¹ CITEQ-UTN-CONICET, Universidad Tecnológica Nacional (Argentina).² INFIQC, Universidad Nacional de Córdoba (Argentina)



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