



BUENOS AIRES 2023

JUNE 4 - 8

WCCE11 - 11th WORLD CONGRESS OF CHEMICAL ENGINEERING

IACCHE - XXX INTERAMERICAN CONGRESS OF CHEMICAL ENGINEERING

CAIQ2023 - XI ARGENTINIAN CONGRESS OF CHEMICAL ENGINEERING

CIBIQ2023 - II IBEROAMERICAN CONGRESS OF CHEMICAL ENGINEERING

Buenos Aires - Argentina - June 4-8, 2023

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

WCCE11-Area 12- SUSTAINABILITY AND THE ENVIRONMENT

Preliminary technical program

Tuesday, June 6, 2023, Room 11 Oral presentations

9:00-9:30	1888	KEYNOTE Sustainability analysis and profitability risk assessment of poly(3-hydroxybutyrate) production from sugar beet pulp	Ioannidou Sofía et al.
9:30-9:45	2425	Evaluating the environmental performance and material efficiency of an Industrial Symbiosis Network in Mendoza, Argentina	Arce Bastias Fernando et al.
9:45-10:00	2749	Analysis of the life cycle of the product of the pisco industry	Sotelo Alca Julio et al.
10:00-10:15	2339	Optimization of the Argentine citrus supply chain with a life cycle approach	Iñigo Martínez et al.
10:15-10:20	1780	Life Cycle Assessment Tool Integrated to Process Monitoring, Design and Control Environment	Miyoshi, Simone et al.
10:20-10:25	1700	Simulation of tire pyrolysis processes in rotary kilns reactors	Rojas Jerez Juan Felipe et al.
10:25-10:30	Questions flash oral presentations		
10:30-11:00	Coffee Break and Posters Discussion		
11:30-11:45	2816	Catalytic fast pyrolysis of olive stone for bio-oil deoxygenation	María del Carmen Recio-Ruiz, et al.
11:45-12:00	2078	Maritime transportation planning under carbon intensity constraints for sustainable supply chains	Presser et al.
12:00-12:05	2466	Supply Chain Optimization for Plastic Upcycling Considering Economic and Environmental Indicators	Badejo et al.
12:05-12:10	1323	Process Data Application in the Analysis of Environmental Impact of Hydrotreating Fuels, Using the Life Cycle Assessment	Morales-Medina, G.
12:10-12:15	2890	Multi-scale techno-economic assessment of processes for the stabilization of digestat	Martin Hernandez Edgar et al.
12:15-12:20	2118	The need for a systematic application of environmental impact assessment methods in process systems engineering	Sin et al.
12:20-12:30	Questions flash oral presentations		
12:30-14:00	Lunch Interval		
14:00-14:15	2963	Oil adsorption by ZIF-L: kinetics, adsorbent dosage and recyclability	Meiry Gláucia Freire Rodrigues et al.

14:15-14:30	1848	Fluorine adsorption in calcium-functionalized chitosan matrices: kinetics, adsorption isotherm, influence of pH, and adsorbent dose	Lobo Cintia et al.
14:30-14:45	2164	Development of organic pollutant adsorbent materials from shrimp shells processing wastes	Carpintero María et al.
14:45-15:00	2655	Superior arsenic adsorption by growing iron oxide nanoparticles inside electrospun PVA nanofibers	Torasso Nicolás
15:30-15:35	2224	Effect of the presence of sediments on the distribution of hydrocarbons after an oil spill in fresh water	Ibarra Mojica et al.
15:35-15:40	1406	Na-P1 zeolite/alginate composite and its uranium removal performance - batch, and spectroscopic investigations	Sobczyk et al.
15:40-15:45	1496	Study of the degree of polymerization of regenerated cellulose from cotton waste in imidazolium ionic liquids	Brito et al.
15:45-15:50	1915	Boosting the properties of recovered carbon black from end-of-life tires	Silva Clara et al.
15:50-15:55	1956	Hemicellulose recovery from kraft black liquor and its cationization for applying as a flocculant for PCC suspension	Gando-Ferreira et al.
15:55-16:00	Questions flash oral presentations		
16:00-16:30	Coffee Break and Posters Discussion		
16:30-17:30	Plenary Conference		
17:30-18:30	Posters Discussion		
Congress Dinner			



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Tuesday June 6, 2023. POSTERS SESSION .

2900	Biogas production as a promoter for rural development: a case study.	Sanz Smachetti et al
2970	Application of the QWASI Model, to simulate the distribution of the Mirex contaminant in different compartments, in Lake Ontario, Canada.	Choccare Gutierrez, Enrique Antonio
2922	Development of a tannin-based adhesive from poplar bark byproducts for short term food-packaging using a circular economy approach	Oliveira Susana
1340	Influence of pH on adsorption of the anti-inflammatory diclofenac by green functionalized carbon nanotubes	Pires Spaolonzi et al.
1370	Comparative study of the environmental risks associated with construction and demolition waste deposits	Machado et al.
1416	Characterization chemical and biochemical of the biosurfactant produced in the biorefinery context	Barbosa et al.
1441	Efficient removal of Cr(VI) ions from aqueous solutions: Preparation and application of arabinogalactan coated magnetic nanoparticles	Leitgeb et al.
1485	Activated carbon production from lignocellulosic waste for CO2 capture systems	Bavio et al.
1448	Green iron-based nanoparticles for Cr(VI) removal	Paronetto et al.
1484	A cost-effective bioaugmentation strategy: application of microbial consortia from residual sludge	Olivera et al.
1506	Application of statistical experimental design for discoloration of colored cotton residues in order to obtain cellulose film regenerated with ionic liquid	Ferreira Knihs et al.
1597	Synthetic and natural hydroxyapatite as adsorbents: production, characterization, and affinity test	Dutra Valente Duarte et al.
1679	Reduced Graphene oxide-Fe ₃ O ₄ hybrid nanoadsorbent for adsorption of tetracycline in aqueous medium	Onaga et al.
1538	Individual-based modeling of biological treatment systems in windrows of petroleum hydrocarbon-polluted soils	Alvarez Arce et al.
1550	Modeling of biological treatment systems (landfarming) of soils with petroleum hydrocarbons	Araujo-Zambrano et al.
1736	Preliminary design of brewer's spent grain pretreatment plant for energetic applications	Leonel et al.
1763	Evaluation of the pH effect on the adsorption of losartan potassium using carbon nanotubes	Gomes Oliveira et al.
1762	The evaluation of electrocoagulation and optimization of microbiological process of effluent treatment of a cosmetics industry	Schneider et al.
1767	The influence of the moisture content and the apparent dry specific weight on soil-cement-aish mixture	Gonçalves et al.
2519	Luffa cylindrica-based sorbent materials for selective separation of oil in water	Andrade Santos



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WCCE11-Area 12- SUSTAINABILITY AND THE ENVIRONMENT

Wednesday, June 7, 2023. Oral Presentations . Room 11

9:00-9:30	1795	KEYNOTE Bacteria-Mediated Struvite Precipitation for Organic Phosphorus Recovery in wastewater	Zhenhua Wang
9:30-9:45	2636	Obtaining and characterization of dietary fibers from organic discards	Pilatti et al.
9:45-10:00	1923	Thermogravimetric study and product analysis of slow pyrolysis of Rosa rubiginosa L. husk waste after pectin extraction	Torres-Sciancalepore et al.
10:00-10:15	1503	Obtaining a regenerated cellulose film from colored cotton waste dissolved with ionic liquid	Ferreira Knihns et al.
10:15-10:20	1915	Boosting the properties of recovered carbon black from end-of-life tires	Silva et al.
10:20-10:30		Questions flash oral presentations	
10:30-11:30		Coffee Break and Posters Discussion	
11:30-12:30		Section plenaries	
12:30-14:00		Lunch Interval	
14:00-14:15	2327	Assessing of green energy technologies sustainability by critical material circularity analysis	Rahimpour Golroudbary et al.
14:15-14:30	2526	Production of Cordierite Based Ceramic Membrane from Magnesite Waste	Artun et al.
14:30-14:45	1748	Improving saccharification of cellulosic and lignocellulosic residues	Balbi et al.
14:45-15:00	2901	Reject brine valorization through mineral carbonation: A kinetics study	El-Naas, Muftah H
15:00-15:15	1513	Control of the properties of rice husk ash	Sánchez et al.
15:30-15:35	1574	Activated carbons obtained from waste: synthesis and characterization	Figueiredo et al.
15:35-15:40	1477	Optimization of the chemical activation conditions to produce bio-based carbons for energy storage	Jerez et al.
15:40-15:45	2351	Composting and on-site reusing of pear pomace	Iturmendi et al.
15:45-16:00		Questions flash oral presentations	
16:00-16:30		Coffee Break and Posters Discussion	
16:30-16:45	2342	Fast Pyrolysis for Chemical Recycling of Agricultural Waste Plastic	Rodriguez Garrido et al.
16:45-16:50	1956	Hemicellulose recovery from kraft black liquor and its cationization for applying as a flocculant for PCC suspension	Gando-Ferreira et al.
16:50-16:55	1578	Improvements in sewage and cellulose industry sludge treatment using thermal hydrolysis	Goycoechea et al.
16:55-17:00	2060	Enhanced Green Methanol from Renewable Solid Carbon via the Boudouard Reaction	Medrano-García et al.
17:00-17:05	1652	A water allocation indicator for hydrographic basins	Andonie Bahamondes et al.
17:05-17:10	2153	Synthesis of 3D TiO ₂ /Cellulose composites by microwave irradiation	Maria Melo Souza Sales et al.
17:10-17:25	1601	Bacteriostatic filter media – standard test methods adapted for representative assessment of composite filters with an enhanced biofouling resistance	Stor, M. et al.
17:25- 17:30		Questions flash oral presentations	
17:30-18:30		Plenary Conference	
18:30-19:30		Posters Discussion	



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Wednesday June 7, 2023 . POSTERS SESSION

1530	Oxygen uptake response of activated sludge and Escherichia coli exposed to nanomaterials	Aude Luppi et al.
1853	Production of activated carbon from drawer waste	Guerrero Vejarano et al.
1881	Reduction of the bioavailability of Cd in soils cultivated with Theobroma cacao from the applicatio	Lopez et al.
1882	Case study of the application of two amendments to agricultural soils contaminated with nickel,	Lopez et al.
1891	Synthesis of zeolitic materials from solid residues of the Argentinian brewing industry	Massa et al.
1896	Treatment of wastewater from a fish canning factory by electrocoagulation and electrochemical o	Alvarez Arce et. al.
1869	Divalent cation Cu-Pb-Zn solutions and their mixtures treated by metallic electrodeposition on pencil graphite electrodes.	Gonzalez Mercado et. al.
1904	Sustainable activated carbon obtained using crude glycerol from biodiesel plants and its application for electrochemical desalination	Ruotolo et al.
1910	Analysis of population dynamics in the anaerobic co-digestion of sewage sludge, vinasse and poultry manure.	Sillero Moreno et al.
1911	Techno-economic analysis of single-stage and temperature-phase anaerobic co-digestion of sewage sludge, wine vinasse, and poultry manure	Sillero Moreno et al.
1973	Effect of hydrothermal treatment of wet olive pomace to obtain phenolic compounds with antioxidant activity	Cabrera et al.
2027	A Carbon Dioxide adsorption: isotherm and temperature effect on breakthrough curve	García Martínez et al.
2028	Preparation of zinc oxide from used batteries for the recycled oil transesterification	Pinos et al.
2158	An optimization model to minimize the water footprint and costs of a brewing industry	Mainardi Remis et al.
2095	Exploratory synthesis of magnetic chitosan macrospheres	Rial et al.
2098	Preliminary synthesis of hematin supported on magnetic chitosan macrospheres	Rial et al
2168	Photocatalytic degradation of endocrine disruptors in water using porous inorganic/carbon hybrid materials	Aquino et al.
2172	Improvement of environmental performance in the production of pisco through the recovery of grape seed oil by supercritical extraction	Gusukuma et al.
2189	Performance of hydrous iron oxide for dissolved organic phosphorus adsorption from wastewater	Santiviago et al.
2203	Evaluation of methods for the synthesis of biodegradable sponges for oil spills from residues of the poultry industry	Orjuela-Palacio et al.
2207	Molecular modeling of antibiotics in water remediation: feasibility analysis of plasma as a green and efficient technology	Diaz Bukvic et al.
2212	Comparative techno economical evaluation of mechanical dewatering of sludges in the dairy industry	Porley Santana et al.
2211	Nitrite removal by hydrodynamic cavitation	Cabañas et al.



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Thursday, June 8, 2023. Oral presentations. Room 11

9:00-9:30	1577	KEY NOTE Field evaluation of the sustainability and efficiency of an arsenic removal plant based on the zero-valent iron technology	Berardozi, E et al.
9:30-9:45	2967	Removal of antibiotics from aqueous solutions using ozone-based oxidation technologies	Vázquez-Vázquez et al.
9:45-10:00	1829	Hydrodynamic cavitation effects over protein-like organic matter	Fleite Santiago Nicolas et al.
10:00-10:05	2948	Perfluorooctanoic acid (PFOA) removal using advanced oxidation technologies based on light rad	Quiroz-Vela et al
10:05-10:10	1653	Iron nanoparticles based nanofluids for in situ environmental remediation	Crespi et al.
10:10-10:30	Questions flash oral presentations		
10:30-11:00	Coffee Break and Posters Discussion		

11:00-11:15	1381	Bacterial community composition in a pilot-scale wastewater treatment plant	Perveen et al.
11:15-11:30	2711	Treatment and valorization of toluene and styrene from waste gas streams by <i>Pseudomonas fulva</i>	Acevedo et al.
11:30-11:45	2316	Bioenergy and carbon dioxide sinking in the sugarcane-industry: techno-environmental assessment	Machin Ferrero et al.
11:50-11:55	1390	Kinetic modelling of colour formation in water solutions of sulphamethoxazole oxidized by photo-Fenton treatment	Lomas, J.M et al.
11:55-12:00	2927	Microbiologically induced calcite precipitation process (MICP) as a tool to control windblown dust emissions from mine tailings	Zuñiga Hector et. al.
12:05-12:10	1997	Integrated technologies for the household greywater treatment and reuse in the Chilean context	Abejón et al.
12:10-12:15	2760	Green approaches for the synthesis of Carbon Quantum Dots	Gomes, S.Y. et al.
12:15-12:30	Questions flash oral presentations		

12:30-14:00

Lunch Interval

WCCE11-Area 12- SUSTAINABILITY AND THE ENVIRONMENT

AUDITORIO 1

Thursday, June 8, 2023. Oral presentations . Room 11

14:00-14:15	2269	Design, Prototyping, and Performance Evaluation of UV-LED Reactor for Water Treatment	Taghipour Fariborz et al.
14:15-14:20	1338	Green-modified carbon nanotubes for adsorption of antibiotics: A dosage study	Vieira, M.G.A et al.
14:20-14:25	1446	Do microplastics affect the particle removal by sand filters?	Gentile et al.
14:25- 14:40	Questions Flash oral presentations		
14:40-16:00	Posters Discussion		
16:00-16:30	Coffee Break and Posters Discussion		
16:30-17:30	Plenary Conference		
17:30-18:30	Closing Ceremony		



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Thursday, June 8, 2023 Poster Session

2244	Obtaining formic acid from potato peels and its potential use as LOHC (Liquid Organic Hydrogen C	Trigo et al.
2299	Spirulina platensis protein extract as an additive to improve the removal capacity of protein hydrogels	Dorso et al.
2332	Valorization of plastic waste from polymerization process of styrenic resins	Volpin et al
2336	Stabilization/Solidification of EAFD waste using nano-silica and blast furnace slag-based geopolymer	Luna Galiano
2925	Synthesis of magnetite-chitosan-starch spheres for the adsorption of red alizarin S (ARS) and Orange-II	Cuevas et al.
2374	Production of single-carbon chemicals from multi-source industrial CO ₂ . Techno-economic and environmental analysis	Araujo et al.
2435	Selective lithium recovery from desalination plant concentrates	Fernández-Escalante et al.
2449	Adsorption of ciprofloxacin on materials obtained from recycled industrial waste	Melia Lucas et al.
2499	Electrochemical remediation of an antidepressant used to treat the effects caused by the COVID-19 pandemic. Intermediates, final products analysis and degradation pathway proposal	Schröder Sophie et al.
2510	Biodegradation Evaluation of the Insecticide Imidacloprid in a Moving Bed Biofilm Reactor (MBBR) and its Impact on the COD and Ammonium Removal.	Cazelato Gaioto et al.
2556	Evaluation of the effect of temperature over the removal of chromium (VI) onto sawdust	Tejada Tovar et al.
2582	Evaluation of the anthropogenic affectation in water coast systems through physicochemical and birds parameters. Case: Juan Angola creek	Leones et al.
2630	Development of new materials for water treatment using a biowaste derived from soybean production	Mendiberri et al.
2701	Degradation and valorisation of VOCs in a bubble column reactor	Rodriguez et al.
2703	Use of multivariate analysis for the quantification of arsenic in the presence of phosphates in water treatment plants	Berardozzi et al.
2713	Removal of Ca ²⁺ Ion using ion exchange process	Lied et al.
1392	Application routes of fly ash transformation products	Franus et al.
2358	Alginate and chitosan-based adsorbent materials for copper and lead abatement from wastewater: Synthesis of composite biomaterials for wastewater treatment.	Gutierrez Laura et al.
1354	Optimization of stabilization pond design for meat industry wastewater using computational fluid	Arturi T et al.
2411	Production of 5-Hydroxymethylfurfural and HMF Derivatives by Sustainable Utilization of Sugar Beet Molasses by Hydrothermal and Biological Treatment	Rocha, S., Pérez-Pantoja, D. , Marzioletti, T. , Kopp, M. , Cea, M
2889	Socio-economic solutions in local communities for preventing and controlling phosphorus releases from municipal wastewater	Hernandez E.
1474	Anaerobic Digestion of Agro-Industrial Wastewater with high sulfate loads: the hydrogen sulfide yield and its implications on the biodigester's stability.	Girardi et al.
2231	An alternative process for the sustainable development of nanoporous activated carbons for CO ₂ removal	Rodríguez Ortiz, H., Gomez Delgado, E., Nunell, G.V., Cukierman, A.L., Bonelli, P.R.
2798	Dyes and arsenic removal by carbon nanofiber composites dispersed in a PVA electrospun mat	Torasso et al.