



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 7- MATERIALS AND NANOTECHNOLOGY

Preliminary technical program

Monday, June 5, 2023, AUDITORIO Juan Pablo II, Oral Presentation

9:00-9:15	1769	Overcoming the limits of oxidoreductase-based wastewater treatment-A multidisciplinary approach	de Boer Sabrina et al.
9:15-9:30	1628	Production of ceramic pellets with micrometric zero-valent iron as an active phase for chemical reduction of contaminants in water	Ocampo Santiago et al.
9:30-9:45	1458	Surface zeolitization of millimeter clay particles	Rivera Enríquez Claudia E. et al.
9:45-10:00	1296	Characterization of the hydrophobicity of Laser-Induced graphene for its application in direct contact membrane distillation for water desalination	Peralta Mateo et al.
10:00-10:15	2276	Development of Tough Ion Gels Consisting of Alumina and Poly(ionic liquid)	Watanabe Takaichi et al.
10:15-10:30	1798	High and Very High Mn steels: erosion-corrosion response mechanisms	Doldan, M.E. et al.
10:30-11:00	Coffee Break and Posters Discussion		
11:00-11:30	Posters		
11:30-12:30		Plenary Session Conference Vitrimers: A new family of plastic materials sharing properties of thermosets and thermoplastics	Williams, Roberto J. J.
12:30-14:00	Lunch Interval		
14:00-14:15	1556	Modelling flocculation processes using a population balance model: influence of the polyelectrolyte characteristics on the model parameters	Rasteiro María Graca et al.
14:15 - 14:30	1970	Tailor-made Polymer Friction Reducers for Sustainable Development of Unconventional Oil & Gas Reservoirs	Dietrich Roque Carlos et al.
14:30-14:45	3092	A hydrophilic tetrapolymer applied in aqueous drilling fluids: synthesis, characterization and evaluation of properties.	Grazielle Lopes et al.
14:45-15:00	1450	The road to sustainable pavements: synergistic effect of nanoclay on the performance of crumb rubber-modified asphalt	Ortiz de Zárate Federico Ignacio et al.
15:00-15:15	2365	A hybrid material based on lignocellulosic biomass and transition metal to remove emerging contaminants in water	Ardila Cindy et al.
15:15-15:30	2569	Modification of the fiber of the coconut mesocarp with polyhydroxybutyrate for the preparation of a bio-based adsorbent composite	Villabona-Ortiz, A. et al.
15:30-15:35	1983	Development of black TiO ₂ synthesis through Contact Glow Discharge Electrolysis	Olivera Rohrer Melisa et al.
15:35-15:40	2928	Heterometallic Eu(III)-Lu(III) and Tb(III)-Lu(III) Terephthalates as Bright Luminescent Antenna MOFs	Mereshchenko Andrey et al.
15:40-15:45	1802	Calcination of Sludge from Softening Water Process	Bernaola, U.R.F. et al.
16:00-16:30	Coffee Break and Posters Discussion		
16:30-16:45	2631	Plasticizing effect in the manufacture of extrudable filaments for 3 D printing, additivated with thermoplastic polyurethane (TPU) and polyethylene glycol (PEG)	Otalora Roa Cristian Felipe et al.
16:45-17:00	2247	Modification of UF membranes by in-situ microwave-assisted CNT growth: in-situ microwave-assisted CNT growth	Pino-Soto Luis et al.

17:00-17:15	2742	Understanding the influence of fluid dynamic conditions on mesoporous SBA 15 particles formation as a key parameter to scale-up its production	Britto Fiona et al.
17:15-17:30	2213	Development of reusable catalysts based on supported ultrathin gold nanowires.	Alvarez Cerimedo Maria Soledad et al.
17:30-18:30		Plenary Conference	
18:30-19:00		Poster Discussion	

WCCE11-Area 7- MATERIALS AND NANOTECHNOLOGY

Monday, June 5, 2023. Poster Session

2097	Supramolecular Networks Obtained by Block Copolymer Self-Assembly in an Epoxy Matrix: Preparation and Shape Memory Behavior	Mateos Aillin et al
2209	Thermochemical valorization of brewer's bagasse for the development of biochar-iron oxides composites as an alternative catalyst to contribute to the remediation of Tetracycline contaminated water	Anabalón F.P. et al
2180	DFT study of the removal of nitrates from water using metal oxide catalysts	Domancich N. et al.
2214	Removal of fluoride and arsenic from waters with acidic pH	Ulacco S. et al
1730	Use of nano-functionalized epoxy coatings to improve the microbiologically influenced corrosion resistance	Marino et al.
2133	Propylene-ethylene copolymers with improved melt strength and resistance to discoloration	Schmidt Lucia N. et al.
2359	One-step reactive processing for branching of polylactide acid	Feigl V.S. et al.
2413	Synthesis of magnetic silica catalyst by a biocompatible method	Cuello N.I. et al.
2437	Synthesis of nanocrystals of zeolite FAU by using alkaline fusion from Bolivian Kaolin without the presence of seeds of zeolite	Aguilar-Mamani W. and Aro-Mendoza A.
2297	Effect of the counterion on the structural and optical properties of ZnO films grown by electrodeposition. Its influence on the degradation of methylene blue	Melia L.F. et al.
2492	Specific surface enhancement by the formation of dendritic shells in silica / iron oxide nanospheres for sensing and environmental applications	Menchaca-Nal S. et al.
2677	Influence of Powder Characteristics on The Printability of Ceramics Inks by Direct Ink Writing	Dias A.J.N. et al.
2886	X-ray micro-computed tomography technique for catalytic structures study	Peralta et al.
2167	Design and synthesis of a redox sensitive polymer for the oil & gas industry	Lombardo et al.
1949	High-performance Resveratrol-based Benzoxazine and Epoxy Thermosetting Systems with Siloxane Groups as Flame Retardant Moieties	Forchetti Casarino et al.
2867	Poli-ol ester synthesis rational method for specific properties from Pentaerythritol and Carboxylic Acids (C9, C12, C18, C22) as lubricant applications	Mendoza Ortega C. et al.
1444	Guidelines for Electrical Conductivity Additive Distribution in High-Power and High-Energy NMC based Lithium-Ion Battery Cathodes using Three-Dimensional Numerical Simulations	Chauhan et al.
1461	Modification of TiO₂ with nitrogen and carbon via sol-gel method. Not all generating visible light absorption in TiO₂ is dopin	Rengifo-Herrera et al.
2682	One-step electrodeposition method to generate a phytic-stearic-cerium hydrophobic coating on az91d magnesium alloy	Loperena, A.P. and Lehr, I.L.
2511	Improved corrosion resistance of 316 L SS by Cerium-based coating	Lehr et al.
2149	Influence of processing conditions on the macroscopic orientation of block copolymers by roll-casting	Santillan et al.
2077	Reduction of nitrate ions on Cu-Cd bimetallic nanoparticles supported on vitreous carbon substrates	Zurita Noelia and García, S.G.
1703	Aminosilane-modified MCM-41 and SBA-15 obtained from fly ash as effective adsorbents for the removal of Sunset Yellow FCF and tartrazine from water	Jankowska, A. et al.

Tuesday, June 6, 2023, AUDITORIO Juan Pablo II, Oral presentations

9:00-9:15	2368	Graphene oxide: production, scale-up and applications in Oil & Gas industry	Saavedra Albert et al.
9:15-9:30	1860	Experimental evaluation of the wettability change in a sandstone rock by graphene oxide adsorption by contact angle and Amott Harvey evaluation	Gómez J. L. et al.
9:30-9:45	1676	Synthesis and surface characterization of novel magnetite nanoparticles decorated on self-supported carbon nanofibers	Bhaduri B. et al.
9:45-10:00	1509	Optimization of operational variables for Ag nanoparticles recuperation from aqueous systems using a magnetic coagulation/flocculation process	Ramirez M. et al
10:00-10:15	1287	Nanoparticle synthesis and morphology control in an inkjet-discharged droplet	Yosuke Muranaka et al.
10:15-10:20	3004	Synthesis of nanogenerators via spin coating	Seinhart Nicole et al.
10:20-10:25	1982	Reduced Graphene oxide-Fe3O4 hybrid nanoadsorbent for adsorption of tetracycline in aqueous medium	Onaga Medina, Florencia M. et al.
10:30-11:00	Coffee Break and Posters Discussion		
11:00-11:30	Posters		
11:30-12:30		Plenary Session Conference Nanoporous Advanced Materials: From the Bench to the Market	Soler-Illia, Galo J.A.A.
12:30-14:00	Lunch Interval		
14:00-14:15	1491	Magnetic nanoparticles decorated with synthetic zeolite derived from coal fly ash: Application to removal of heavy metals and organic dyes	Bajda Tomasz et al.
14:15-14:30	1384	Preparation, characterization, and release behavior of corrosion inhibitor-loaded halloysite nanotube	Silva Mayara Antunes da Trindade et al.
14:30-14:45	1343	Synthesis and optical properties of SiO2 composite nanostructures decorated with carbon quantum dots for applications in Luminescent Solar Concentrators	Romero Arellano Víctor Hugo et al.
14:45-15:00	1713	Interfacial phenomena on activated carbon electrodes from unconventional biomass by Electrochemical Impedance Spectroscopy	Portugau Patrice et al.
15:00-15:15	1635	Lignin as a raw material of activated carbon for supercapacitor electrodes	Zapata-Benabith Zulamita et al.
15:15-15:30	2712	Nanocellulose-reinforced EFB/FexOy Biocomposites	Martínez Ramirez Andrea Paola et al.
15:30-16:30	Coffee Break and Posters Discussion		
16:30-17:30	Plenary Conference		
17:30-18:30	Round tables & Forums. Poster Discussion		
Congress Dinner			

Tuesday June 6, 2023. Poster Session

2972	Bioorthogonal Paramagnetic Nanocrystalline Phosphors	Mereshchenko A.S. et al.
2947	Increment of the dissolution efficiency of poor water-soluble drugs comparing different loading methods in mesoporous materials	Gallo L. et al.
2814	Characterization of biodegradable nanostructured magnetic materials with potential as adsorbents	Meiorin C. et al.
2746	Development of a nanocomposite from Cannabis sativa residues as an adsorbent of heavy metals	Tejeda-Benitez L. et al.
2650	Development of nanocomposite films of poly(lactic acid) and bacterial cellulose by common melt processing techniques	Bovi J. et al.
2330	Release kinetics of black tea polyphenols from polyvinyl alcohol (PVA) electrospun nanofibers mats in several simulants	Qinteros-Borregales L.M. et al.
2319	Immobilization of ZnO nanosheets on TiO ₂ nanotubes electrochemically formed on Ti-6Al-4V alloy	Martínez A. et al.

2292	Swelling as driver of the water filtration of electrospun membranes	Santos A. et al.
2019	Immobilized photocatalysts: influence of the substrate geometry on the formation of TiO ₂ nanotubular coatings by anodic oxidation	Dwojak A.N. et al.
2008	Heterofunctional polymeric nanosupports for enzyme immobilizations	Everton S.S. et al.
1582	Hydrophilic carbon nanofibers supported on graphitic carbon nitride for the efficient adsorptive removal of aqueous methylene blue dye molecules	Bhaduri B. and Verma N.
1244	Nanostructured SiO ₂ fibers by electrospinning	Caracciolo P.C. and Inchaurredo, N.S.
1586	Melanin analogue-based nanoparticles transporting FOLFIRI and cetuximab for the treatment of metastatic colon cancer	Nieto C. et al.
1581	Thermal behavior of starch from different botanical sources by thermogravimetric kinetic analysis	Ávila-Martín L. et al.
1575	SiC, Si ₂ N ₂ O and Si ₃ N ₄ whiskers from rice husk ash and graphite powdermixtures	Parrillo A. and Sánchez, G.
1504	Functionalization of textile fabrics with clove essential oil encapsulated in chitosan and alginate matrices	Martins Q. et al.
1462	Enhancement of biomaterials based on starch for protection of agricultural soils	Anzorena H.A. et al.
1438	Synthesis of liposomes with appropriate characteristics for the incorporation of biologically active substances	Kučuk N. et al.
1414	Evaluation of Uruguayan loblolly pine wood to produce unbleached kraft pulp	Palombo V. et al.
1405	Fiber mats of natural rubber/polyvinylpyrrolidone for biomedical applications: determination of the best solution characteristics for electrospinning	Andrade K.L. et al.
1325	Study of the influence of reduced graphene oxide on the mechanical properties of composite alginate hydrogels	Carrasco S. et al.
1317	Ternary deep eutectic solvents for the extraction of highly pure lignin from Acacia wood	Fernandes C. et al.
1292	Development of a conductive hydrogel based on reduced graphene oxide and collagen	González L. et al.
1263	Biodegradable films of thermoplastic starch, poly(butylene succinate), and poly(butylene adipate co-terephthalate)	Beluci N.C.L. et al.

Wednesday, June 7, 2023, AUDITORIO Juan Pablo II, Oral presentations

9:00-9:15	1419	Mechanical, and Thermal Properties of Biocomposites based on Polylactic Acid and natural fibers: Sisal and Coir.	Ramirez Carlos et al.
9:15-9:30	1642	Co-encapsulation of retinoic acid, curcumin and resveratrol with the evaluation of the co-delivery profiles and of the potential benefits in the treatment of acute promyelocytic leukemia	Gonçalves Antonia et al.
9:30-9:45	1772	Development and characterization of alginate/chitosan nanoparticles for Rosemary and Lavander essential oils encapsulation	Meneghini, V. and da Costa, C
9:45-10:00	2705	The Effects of Microcrystalline Cellulose and Sodium Bicarbonate Treatments on Starch Composites	Avila Liliana et al.
10:00-10:15	3113	Degradable PDA@P(NIPAM-TA) Nanocomposites for Temperature- and NIR- Controlled Pesticide Release	Wang Manting et al
10:15-10:30	1756	In-situ preparation of CdTe quantum dots capped with TEMPO and Periodate-oxidized nanocellulose and their potential application in heavy metal ion detection	Amaya García Daniel Alonso et al.
10:30-11:00		Coffee Break and Posters Discussion	
11:00-11:30		Posters Discussion	
11:30-12:30		Plenary Session Conference Towards a greener future for polyurethanes: Biobased polyurethane aqueous dispersions	Aranguren, Mirta I.
12:30-14:00		Lunch Interval	
14:00-14:15	2075	A Computational Polymer Design Protocol for Biomarkers Detection	Daniels, E. et al.
14:15-14:30	1751	A comprehensive study of the alginate-gelation complex coacervation	Blanco López Marco et al.
14:30-14:45	2734	Production of cellulose nanoparticles from cashew apple bagasse by ultrasonic- assisted enzymatic hydrolysis	Araújo, L.G.S. et al.
14:45-15:00	2604	Optimization of the protein bioparticles synthesis for producing hybrid polymeric materials	Allasia Mariana et al.
15:00-15:15	2646	Evaluation of the compatibilizing effect of sugarcane straw lignin in polystyrene composites with vegetable fibers	Gambarato Bruno and Oliveira, P.H.S
15:15-15:30	1352	Development and characterization of sustainable pressure sensitive adhesives based on epoxidized soybean oil, sebacic acid and a cardanol-based epoxy resin	Teper Marinelli Lautaro G. et al.
15:30-15:45	1455	Water absorption capacity of an extracellular polymer produced by the Antarctic bacterium Janthinobacterium sp. UV13	Rodríguez-García Claudia et al.
15:45-16:00	1412	Compatibilizers for biodegradable starch and poly (lactic acid) materials produced by thermoplastic injection	da Silva Samuel Camilo et al.
16:00-16:30		Coffe Break and Posters Discussion	
16:30-16:45	2102	Novel ways for calcium alginate gel formation	Donayre Alonso et al.
16:45-16:50	2726	Isolation and characterization of biosynthesized bacterial cellulose nanofibers from Colombian cacao mucilage	Gamboa Suarez Maria Andrea et al.
16:50-16:55	1231	Acacia wood Fractionation using Deep Eutectic Solvents: Extraction, Recovery and Characterization of the different	Magalhães Solange et al.
16:55-17:00	1514	Catechol aromatic molecular system used as a spintronic device	Ojeda Silva Judith Helena et al.
17:00-17:05	2619	Nanocellulose/silver nanoparticles hybrid hydrogels as fungistatic agents	Hernández Celi Inés et al.
17:30-18:30		Plenary Conference	
18:30-19:30		Posters Discussion	

2968	Kinetics of Fe(III) adsorption in aqueous solutions using cattle manure as adsorbent	Canchanya-Huaman Y. et al.
2959	Removal of iron and copper using cowmanure in mining effluent	Mayta-Armas A.F. et al.
2828	Evaluation of Homogenization Method on Microstructural, Physical and antimicrobial Properties of starch-based film containing heterogeneous components	Gutierrez-Oppe E.E. et al.
2775	Adsorptive removal of arsenic from water with an adsorbent blended of activated carbon/whey protein amyloids	Gallardo Salas M.A. et al.
2731	Comparative analysis of physicochemical properties of biobinders for pavement purposes produced from different unpretreated and pretreated lignocellulosic biomass sources	Castro-Alonso M.J. et al.
2719	Modification of paints with nanomaterials for self-cleaning and antibacterial applications	Herrera A. et al.
2633	Synthesis and Characterization of L-Lactide: Evaluating Experimental System Configurations for the Production of High Molar Mass PLLA	Cunha B.L.C. et. al.
2576	Acrylic/Starch hybrid nanoparticles by emulsion polymerization for coating applications	Cabrera S.F. et al.
2568	Effect of radiation sterilization of medical device polymers	Ciávaro M.N. et al.
2553	Evaluation of a chitosan-based composite material in the removal of anionic dyes	Tejada-Tovar C. et al.
2487	Synthesis of self-healing Castor oil-based waterborne polyurethane based on Diels–Alder reaction	Villca D. et al.
2443	Fiber obtained from Helianthus tuberosus residue and its application in the development of biodegradable composite materials based on starch	Sierra Montes L.F. et al.
2417	Casein functionalization with levulinic acid for self-crosslinkable materials	Cencha L. et al.
2350	Rational design of polyhydroxylated lead adsorbents	Diaz Bukvic G. et al.
2321	Sustainable usage of yerba mate industry by-product in laminates development from biobased adhesives	Monroy Y. et al.
2320	Plywood of northeast Argentinian woods and cardanol-based adhesives	Nicolao E. et al.
2309	Carboxymethylcellulose obtained from lignocellulosic waste and its use as a biopolymeric matrix	Cáceres L.M. et al.
2262	Chitosan-based materials functionalized with Aloe vera for potential biomedical applications	Naso L. and Rivero S.
2206	Synthesis of magnetic iron-carbon composites from residual brewery biomass for remediation of water contaminated with chlorinated compounds	Kopp M. et al.
2156	Use of residues from renewable biomass for technological applications: Sawdust from Pinus elliottii as source of xylans	Ochoa Torres D.S. et al.
2141	Biodegradation of a starch film in home composting: effect of the presence of a fungicide	Melaj M.A. et al.

Thursday, June 8, 2023, AUDITORIO Juan Pablo II, Oral

9:00-9:15	2861	Synthesis of -FeOOH nanoparticles and their DNA adsorption properties water	Skalny Mateusz and Bajda T.
9:15-9:30	2764	Rich magnetic field-driven assembly of magnetic colloids with laterally shifted dipoles	Rubio- Briceño Juan P. et al.
9:30-9:45	2528	Spontaneous microencapsulation behavior in microchannel flow	Ono Tsutomu et al.
9:45-10:00	2458	PLGA nanoparticles, influence of solvent-non solvent nature and polymer molecular weight over particle size and kinetic rate profile	P. Betes-Sevillano; R. Lancheros
10:00-10:15	2271	Plasmon chemistry of noble metal nanoparticles for visible-light-driven hydrogen generation	Verma Priyanka et al.
10:15-10:30	2111	New insights on catalytic activity of copper-doped iron oxide nanoparticles	Nuñez, N et al.
10:30-11:00	Coffee Break and Posters Discussion		
11:00-11:30	Posters Discussion		
11:30-12:30		Plenary Session Conference Neofossils: bio-based plastics to sequester CO₂	Ryan, Anthony J.
12:30-14:00	Lunch Interval		
14:00-14:15	1598	A Morphology based study of novel Gd₂MoO₆ nanoparticle and its photocatalytic activity: effect of surfactant and optoelectronic property: Novel Gd₂MoO₆ nanoparticle and its photocatalytic activity	Sengupta Sonali et al.
14:15 - 14:30	1261	Single particle dynamics around the boundaries of nematic media	Parientes-Sanchez Deyvi et al.
14:30-14:45	3121	Chemical Modification and Coordination Structure Construction regulating the Catalytic Process of Carbon-based Materials	Li Yang
14:45-15:00	2081	Valorization of avocado and tomato pruning waste for the production of biocomposites for food packaging	Morcillo-Martín Ramón et al.
15:00-15:15	1644	Structural and spectroscopic characterization of air-stable zerovalent iron nanoparticles after an activation process	Salemme Alién et al.
15:30-16:00		Posters Discussion	
16:00-16:30		Coffee and Posters	
16:30-17:30		Plenary Conference	
17:30-18:00		Closing Ceremony	

2969	Green synthesis and characterization of silver nanoparticles using plant extracts of <i>Pernettya prostrata</i> (Cav.) DC. and <i>Mutisia acuminata</i> Ruiz & Pav	Bendezu Roca Y. et al.
2719	Modification of paints with nanomaterials for self-cleaning and antibacterial applications	Herrera A. et al.
2681	Evaluation of antimicrobial treatment with Ag nanoparticles applied on textiles	Ueda A.C. et al.
2599	Modelling of a continuous maize milling process under the discrete element method	Chiaravalle A.G. et al.
2426	Strategies for scaling up the synthesis of stable aqueous ferrofluids of extremely high concentration	Jara D. et al.
2395	Development of a drug delivery nanoplatform based on polylactic acid	Chinellato J. et al.
2281	Silica/lignin hybrid composites by sol-gel: synthesis, properties assessment, and a glance at potential applications	Bruzzoni A. et al.
1634	Ultra-low-cost synthesis of amine modified MCM-41 for CO ₂ capture	Aquino G.D. et al.
2257	Biopesticide based on inulin nanoparticles and neem oil for control of <i>Chloridea virescens</i>	Fuentes M.E. et al.
2110	Development of microfibrillar membranes based on poly(ϵ -caprolactone) to be used in the treatment of cutaneous lesions	Lima T.P.L. et al.
2089	Brewer's Spent Grains for production of binderless boards. A study on its contribution to sustainability.	Rossi L. et al.
2002	Use of avocado seed starch (Israeli Pinkerton) to obtain bio-based polymers	Mallarino-Miranda, L.P. et al.
1972	Chitosan and sodium alginate based membranes as a potential treatment in cutaneous wounds	Martiny T.R. et al.
1958	Incorporation of dragon's blood latex in chitosan film	de Andrade Bonucci G. et al.
1857	PVP-agar hydrogels synthesized by microwave irradiation for biological applications	Azevedo N.O. et al.
1836	Characterization silk fibroin and graphene oxide hydrogels for use as dressings	Ruiz I. et al.
1701	Development of microalgae oil-based drug delivery systems	Lin Y.C. et al.
1472	A Microencapsulation of ginger oil by complex coacervation and cotton impregnation	de Souza Santana Marcos Henrique et al.
1819	Surface treated PET fibers for enhanced functionalization with lavender oil microcapsules	Valle, R.C.S.C. et al.
2261	Carbon nanofiber from ecofriendly Poly (vinyl alcohol) electrospun mat as an effective electrode for water desalinization	Vergara Rubio Maria Alicia et al.