



## 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 5- FOOD ENGINEERING

#### Preliminary technical program

*Monday June 5, 2023. Oral presentations*

No oral presentations programmed.

*Monday June 5, 2023. POSTERS SESSION*

#### Food products, properties and characterization

1259	Experimental determination of the molecular weight of a calcium alginate gel by viscometry and <sup>1</sup> H NMR at 25 °C	<u>Oroná, J.D.</u> , Zorrilla, S.E., Peralta, J.M.
1622	Evaluation of physicochemical properties of alginate beads for cryoconcentrated solutions protection	<u>Guerra-Valle M.E.</u> , <u>Carvajal-Mena N.</u> , <u>Orellana-Palma P.</u>
1633	Surface properties-of mixtures containing proteins from white bean ( <i>Phaseolus vulgaris</i> ) and polysaccharides	da Matta, L., Vidigal, M.C.T.R., Minim, V.P.R., <u>Minim, L.A.</u>
2103	Extraction and determination of total polyphenols in residual BSY (Brewing Smelt Yeast) from the craft beer process.	Balussi, M., Pérez, E.E., <u>Constenla, D.T.</u>
2461	Chia mucilage modification by high pressure homogenization: impact on technological properties	Saporittis, K., Morales, R., <u>Martinez, M.J.</u>
2594	Potential for the generation of food products from the Colombian beekeeping value chain	<u>Leones J.</u> , Cuenca M., Sánchez E., Ojeda K.
2691	Characterization of pea protein - bile salts interactions under gastroduodenal conditions by interfacial shear rheology	Herrera, A., Naso, J., Bellesi, F., <u>Martínez, M.J.</u> , Pilosof, A.M.R.
2778	Improvement of the physical properties of quinoa flour ( <i>Chenopodium quinoa</i> ) by agglomeration with steam injection	<u>Mendoza Rojas, C.</u> , Mendoza Cortez, J.W.
2779	Elaboration of a carbonated dairy drink made from demineralized whey	<u>Delgado Burgos, J.S.</u> , Caballero López, A. J., Trujillo Sandoval L. F., Guachetá Ávila, M. A., Castro Moreno, G. A.
2932	Quality properties of sourdough breads enriched with Jerusalem artichoke ingredients	Diez, S.B., Rocha-Parra, A.F., Salvatori, D.M., <u>Franceschinis, L.E.</u>
2937	Conditioning and characterization of craft Pilsen brewers' spent grain (BSG)	Palencia, M.A., <u>Constenla, D.</u> , Pérez, E.E.



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### Preliminary technical program

Tuesday June 6, 2023. Oral presentations, Room 14

Food processing and preservation, Food digestion			
9:00-9:15	1304	Recombinant milk proteins: Towards more sustainable products in food technology	<u>Brune, S. E.</u> , Hoppenreijts, L., Keppler, J., Biedendieck, R., Krull, R.
9:15-9:30	2223	An In Vitro Gastric System Simulator	Donis-Rabanales, F., Martínez-Camacho, I.G., Caballero-Ruiz, A., Córdova-Aguilar, M.S., Brito-de la Fuente, E., <u>Ascanio, G.</u>
9:30-9:45	2951	Optimization of sulforaphane microencapsulation process by oil in water emulsion and study its stability	<u>Zambrano, V.</u> , Bustos, R., Mahn, A.
9:45-10:00	1847	Mathematical modeling of the heat transfer phenomena during the cryopreservation of rainbow trout ( <i>Oncorhynchus mykiss</i> ) sperm from Northern Patagonia	Santos, M.V., Crichigno S., Cussac V., <u>Zaritzky N.</u>
10:00-10:15	1367	Valorization of tough meat samples into new beef products	Ricardo-Rodrigues, S., Silva, S., Rouxinol, M.I., Potes, M.E., Agulheiro-Santos, A.C., Laranjo, M., <u>Elias, M.</u>
10:15-10:30	2422	Design and characterization of sweet potato flour in a semi-pilot scale process	Escobar, L.S., Lafuente, M.F., Villafañe, M.R., Saracho Botero, A.C., Valdeón, D.H., Perotti, N.I., Araujo, P.Z., <u>Cozzitorti, M.E.</u>
10:30-11:00	Coffee Break and Posters Discussion		
11:30-12:30	<b>Section Plenary Lecture:</b> Adding value to natural underutilized products for the synthesis of prebiotic oligosaccharides. Fundamentals behind their technological structure-function relationship. Gómez Zavaglia, Andrea.		
12:30-14:00	Lunch Interval		
Modeling and innovation in food processing			
14:00-14:15	1693	Water sterilization by pulsed electric field – The effects of electric field strength over the energy consumption in microsecond pulses	<u>Rodriguez, I.A.</u> , Ferraro, N., Cabaleiro J.M., Olaiz, N.
14:15-14:30	1290	Experimental study of the drying of Pergamino coffee using microwaves and fluidization	Reyes Chaparro, J., Arballo, J.A., <u>Campañone, L.A.</u>
14:30-14:45	2021	Development of a sugar beet pulp biorefinery for the production of biodegradable pectin-based films with bacterial nanocellulose as reinforcing agent	<u>Sarafidou, M.</u> , Filippi, K., Ladakis, D., Vlysidis, A., Koutinas, A.
14:45-15:00	2496	Respiration rate modelling for ready-to-eat strawberries: including effects of gaseous atmosphere, temperature and time	<u>Irazoqui, M.</u> , Barrios, S., Lema, P.



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15:00-15:15	1518	Technological innovation in batch deodorization for pesticide-free natural antioxidant enriched products	<u>Laoretani D.</u> , Fischer C., Iribarren O.
15:15-15:30	1356	Evaluation of pulsed light technology for the inactivation of Escherichia coli ATCC25922 in food and model solutions: the effect of physical characteristics and process conditions	Pihen, C., López -Malo, A., <u>Ramírez-Corona, N.</u>
15:30-16:00	<b>Posters Discussion</b>		
16:00-16:30	<b>Coffee Break and Posters Discussion</b>		
16:30-17:30	<b>Plenary Conference</b>		
17:30-18:30	<b>Posters Discussion</b>		
<b>Congress Dinner</b>			



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### WCCE11-Area 5 FOOD ENGINEERING

#### Preliminary technical program

Tuesday June 6, 2023. POSTERS SESSION

##### Bioactive food components and food preservation

1364	Antioxidant activity of clove and thyme essential oils over time	Rouxinol, M. I., Galveias, A., Ricardo-Rodrigues, S., Laranjo, M., Capelo Soares, P., Potes, M. E., Agulheiro-Santos, A. C., <u>Elias, M.</u>
1366	The effect of clove essential oil in the microbiological, physical and sensorial properties of pig meat	Galveias, A., Rouxinol, M.I., Ricardo-Rodrigues, S., Laranjo, M., Agulheiro Santos, A.C., Potes, M.E., Capelo Soares, P., <u>Elias, M.</u>
1585	Optimization of the synthesis and purification of galacto-oligosaccharides	<u>Faroux, J.M.</u> , Ureta, M.M., Tymczyszyn, E.E., Gomez-Zavaglia, A.
1639	W/O/W emulsions for calcium and vitamin D transport	Madalão, M. C. M.; Simiqueli, A.A.; Minim, L.A.; <u>Minim, V.P.R.</u>
1803	Conceptual design for recuperation of galactooligosaccharides (GOS) from enzymatic hydrolysates through activated charcoal adsorption	<u>Delgado Burgos, J. S.</u> , Duque Romero, J. F., Castro Moreno, G. A., Noriega Valencia, M. A., Serrato Bermúdez, J. C.
1955	Modeling of the enzymatic synthesis of fructo-oligosaccharides	Ureta, M.M., <u>Faroux, J.M.</u> , Gomez-Zavaglia, A, Salvadori, V.O.
1969	Inhibition of melanosis of Patagonian shrimp using chitosan coatings	Fiedorowicz Kowal, M., Ortiz, N., <u>Dima, J.B.</u>
2038	Green Synthesis of Silver Nanoparticles (Ag) through Extracts Obtained from the Residues (Peel/Pulp) of Guarana (Paullinia cupana)	Silva, G.H.B., <u>Batista, F.R.M.</u>
2491	Evaluation of peanut skin subcritical extract as a natural antioxidant for preserving a high-fat food product.	<u>Rodríguez-Ruiz, A.C.</u> , Martínez, M.L., Maestri, D.M., Velez, A. R., Bodoira, R.M.
2591	Kinetics of galactooligosaccharide (GOS) production with two $\beta$ -galactosidases combined	F. Rico-Rodríguez; <u>M.A. Noriega</u> ; R. Lancheros; J.C. Serrato-Bermúdez
2473	Obtention and microencapsulation of BSG extracts	Alonso, S., Hermida C.B., Nazareno, M.A., Piña, J., <u>Pacheco, C.</u>
2895	Microencapsulation of sulforaphane by O/W emulsion method	<u>Arozarena Y.</u> , Mahn A.
3047	Bioactive phenolic compounds extraction from Cacao bean with ultrasound and their effects on the diseases caused by obesity	Robles A., Elgegren M., Donayre A., Nakamatsu J., <u>Kim S.</u>



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### WCCE11-Area 5- FOOD ENGINEERING

#### Preliminary technical program

Wednesday June 7, 2023. Oral Presentations, Room 14

11:30-12:30	<b>Section Plenary Lecture:</b> Chemical engineers: masters of cleaning and decontamination. Wilson, D. Ian.		
12:30-14:00	<b>Lunch Interval</b>		
	<b>Food packaging, biopolymers and biofilms</b>		
14:00-14:15	1878	Development of nanocomposites with dioxide titanium to remove ethylene based in biopolymers	<u>Maldonado, A.</u> , Rodríguez, F., Gutiérrez, S., Donoso, M., Gallegos, N., Bruna, J., Torres, A
14:15-14:30	2559	Gelatin-based hydrogels reinforced with microcrystalline cellulose extracted from plantain ( <i>Musa paradisiaca</i> ) pseudostems and cellulose nano-crystals	<u>Tejada-Tovar, C.</u> , Acevedo-Puello, V., Ortega-Toro, R.
14:30-14:45	1623	Valorization of agricultural by-products through the production of micro/nanostructures for food, cosmetic and nutraceutical applications, prepared by electrospinning	Ribeiro, A., Costa, I., Vaquina, A., Calçada, B., <u>Estevinho, B.N.</u>
14:45-14:50	1825	Determination of oxygen and carbon dioxide concentration profiles in a box for the export of Hass avocados	Rodríguez, Y.C., Cáceres, C.A., Castellanos, D.A., <u>Noriega, M.A.</u>
14:50-14:55	2497	Development of a combined active packaging system with moisture adsorption and antimicrobial control to preserve strawberry fruits	<u>Mahecha, Y.R.</u>
14:55-15:00	1353	Small and large amplitude oscillatory shear behaviour of full-sugar and reduced-sugar aerated coating systems	<u>Meza, B.E.</u> , De Piante Vicín, D.A., Peralta, J.M.
15:00-15:05	2791	Oleoresin quality obtained by different extraction techniques from turmeric rhizome flour ( <i>Curcuma longa</i> L.) by analyzing peroxide value and curcumin content	<u>Choccare, E.A.</u> , Barriga, M.E.
15:05-15:10	1561	Development of an active and intelligent film with the incorporation of molle essential oil ( <i>Schinus molle</i> ) and tumeric extract	Chavez-Marquez E., Bustamante-Bernedo M., Medrano de Jara E., Quequezana-Bedregal M., <u>Gutierrez-Oppe E.E.</u>
15:10-15:30	<b>Questions flash oral presentations</b>		
15:30-16:00	<b>Posters Discussion</b>		
16:00-16:30	<b>Coffee Break and Posters Discussion</b>		
17:30-18:30	<b>Plenary Conference</b>		
18:30-19:30	<b>Posters Discussion</b>		



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Wednesday June 7, 2023. POSTERS Session

#### Food packaging, biopolymers and biofilms

1350	Sorption, texture, and colour properties of edible films elaborated with cassava starch, rebaudioside A and yerba mate extract	<u>Beuter, D.A.</u> , La Cava, E.L., Holowaty, S.A., Meza, B.E., Brumovsky, L.A., Peralta, J.M.
1721	Jaboticaba peel extract as natural additive in chitosan/zein bilayer films for active food packaging material	<u>Avila L. B.</u> , Martiny T. R., Farias B. S., Moraes C. C., Rosa G. S., Dotto G. L.
1917	Influence of surface crystallinity on light barrier properties of polypropylene films	<u>Fuentes, R.A.</u> , Alonso, Y.N., Castillo, L.A., Barbosa, S.E
2026	Multilayer and biodegradable carton packaging for On-Demand delivery food services	<u>Reis, A.F.</u> , Savicius, B., Cárdenas, V.O.C., Silva, C.F., Yoshida, C.M.P.
2119	Design of eco-friendly packaging based in gelatin and yerba mate industrial waste molded by thermo compression	Lazeski, L., <u>Deladino, L.</u> , Rivero, S.
2187	Effect of ultrasound on microstructural and physical properties of edible films during nanoemulsification treatments	<u>Vasco, M.F.</u> ; Gamboa-Santos J.; Campañone, L.A.
2201	Chitosan-keratin biodegradable plastic films for the control of Listeria monocytogenes in bovine meat	<u>Orjuela-Palacio, J.M.</u> , Pérez-Calderón, J., Giménez, B., Zaritzky, N.
2408	Yeast and water kefir grains biobased films: effect of Kombucha bacterial nanocellulose addition	<u>Ramírez-Tapias, Y.A.</u> , Cottet, C., Peltzer, M.A., Salvay, A.G.
2424	Understanding the role of zeolite A-supported Cu and Ag nanospecies in ethylene adsorption	<u>Gonzalez, M.R.</u> , Moreno, S., Ávila, A., Legnoverde, M.S., Gargiulo, N., Monzón, J.D., Caputo, D., Pereyra, A.M., Basaldella, E.I.
2595	Lemongrass extract as an antimicrobial agent in films of PHBV/PLA/MC-Ac	<u>Bello-Rocha, L.</u> , Sierra-Avila, C., Castellanos-Espinosa, D.
2769	Effect of palladium and silver ions on the ethylene removal in active packaging systems for climacteric fruits	Zeferino, L.M.S., Ochi, D., Santos, J.W.S., Yoshida, C.M.P., <u>Silva, C.F.</u>
3078	Development of binary films of poly(lactic acid) and gallic acid for application in active food packaging	Karamysheva, A., Silvestre, A.J.D., Freire, C.S.R., <u>Vilela, C.</u>



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### WCCE11-Area 5- FOOD ENGINEERING

*Thursday June 8, 2023. Oral presentations*

No oral presentations programmed.

*Thursday June 8, 2023. POSTERS SESSION*

#### Modeling and innovation in food processing

1255	Block freeze concentration assisted by centrifugation applied to extracts of matico ( <i>Buddleja globosa</i> ) and mint ( <i>Mentha piperita</i> ) leaves	<u>Orellana-Palma, P.</u> , Guerra-Valle, M., Castillo-Suero, A., Fuentes-Godoy, Y., Meza-Vergara, Y.
1291	Study of the application of edible coatings and different osmotic dehydration on pear cubes	Soteras, E.M., Rodriguez, A., <u>Campañone, L.A.</u>
1423	Evaluation and optimization of salted wakame processing conditions using the response surface methodology (RSM)	Solana, V.P., Tomás, M.C., Dellatorre, F.G., <u>Ixtaina, V.Y.</u>
1694	Freeze-drying of strawberry. Experimental study and mathematical modelling of the sublimation period	<u>Reale, V.A.</u> , Torrez Irigoyen, M.
1766	Study of the storage conditions on quality parameters of salted wakame	Solana, V.P., Tomás, M.C., <u>Ixtaina, V.Y.</u> , Dellatorre, F.G.
1967	Ohmic baking of sponge cake	<u>Olivera, D.F.</u> , Goñi, S.M., Salvadori, V.O.
2025	Application of ultrasound and soda (separate and combined) as skin pretreatments for freeze-drying of blueberries	<u>Schenck, S.</u> , Barrios, S., Lema, P.
2119	Design of eco-friendly packaging based in gelatin and yerba mate industrial waste molded by thermo compression	Lazseski, L., <u>Deladino, L.</u> , Rivero, S.
2159	Analysis of the rheological behavior and stability of pesticides based on Tebutiron	Belaz, C.B., <u>Guimarães, D.H.P.</u>
2160	Mathematical simulation of the physical, chemical and rheological properties of blueberry jam	<u>Guimarães, D.H.P.</u> , Arce, P.F.C.
2290	Modelling and simulation of gluten free sponge cake ohmic baking	Goñi, S.M., <u>Olivera, D.F.</u> , Salvadori, V.O.
2663	Mass transfer analysis during dehydration of <i>Pyrus communis</i> variety "Lechera" by microwave drying	González-Pérez, J.E., López-Malo, A., <u>Ramírez-Corona, N.</u>
2714	Exploring the viability of using yerba mate stems as green urea carrier fertilizers	Schneider-Teixeira A., Molina-García A.D., <u>Deladino L.</u>
2936	Dietary fiber sticks obtained by fluidized bed drying from pear bio-wastes from the canning industry	Retamal, E., Gomez-Mattson, M., Garrido, F., Sette, P., Diez, S., Franceschinis, L., Mazza, G., Zambón, M., <u>Salvatori, D.</u>



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JUNE 4 - 8

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