

# VI Iberoamerican Conference on Supercritical Fluids

October 29 to November 2, 2023  
Los Cocos, Córdoba, Argentina



## Conference Program

<b>SUNDAY (29/10)</b>	15:30 - 18:00		Registration	
	19:00 - 22:00		Welcome Reception & Cocktail	

Day	Time	Presentation Format	Title	Speaker & Affiliation
<b>MONDAY (30/10)</b>	8:30 - 9:30		Registration	
	9:30 - 10:00		<b>Opening Session</b>	
			<b>Session: High Pressure Process Engineering</b> <b>Chair: Ignacio Gracia</b>	
	10:00 - 11:00	Plenary Lecture	<i>Touring the Supercritical Space</i>	Brignole, Esteban PLAPIQUI-UNS-CONICET (Argentina)
	11:00 - 11:30	Coffee Break		
	11:30 - 12:00	Keynote	Supercritical fluids technology and sustainability: some opportunities, many challenges	Bolaños, Gustavo Universidad del Valle (Colombia)
	12:00 - 12:30	Keynote	Hydrothermal Extractions-Reactions for circular bioeconomy	Cantero, Danilo University of Valladolid (Spain)
	12:30 - 13:00	Keynote	Simulation of heat transfer effects on the supercritical CO <sub>2</sub> extraction at a two-vessel industrial plant	Toledo, Felipe Pontificia Universidad Católica de Chile (Chile)
	13:00 - 15:00	Lunch		
			<b>Session: Chemical &amp; Biochemical reactors – Biorefinery</b> <b>Chairs: Marcos Corazza &amp; Francisco Sánchez</b>	
	15:00 - 15:30	Keynote	Integrated and Sustainable Pressurized Fluid Processes for Biorefinery of Plant and Animal By-Products	Saldaña, Marleny D. A. University of Alberta (Canada)
	15:30 - 15:50	Oral	Production of homogeneous biofuel mixtures by supercritical transesterification of vegetable oil and aqueous ethanol field of application: chemical and biochemical reactors	Marulanda, Victor Universidad de La Salle (Colombia)
	15:50 - 16:10	Oral	Catalytic synthesis of ethyl levulinate aided by supercritical carbon dioxide	Zakrzewska, Malgorzata NOVA School of Science and Technology (Portugal)

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<b>MONDAY (30/10)</b>	16:10 - 16:30	Oral	Kappaphycus alvarezzi biorefinery: PLE and SFE applications for phenolics and carragenan recovery and aerogel drying	De Andrade, Cristiano Federal University of Santa Catarina (Brazil)
	16:30 - 16:50	Oral	Extraction of neutral oil and polyphenolic fractions of spent coffee grounds: single step and sequential extractions with compressed fluids	Corazza, Marcos Federal University of Paraná (Brazil)
	17:00 - 19:00		Poster Session 1 + Coffee Break	
	20:30	Dinner		

Day	Time	Presentation Format	Title	Speaker & Affiliation
<b>TUESDAY (31/10)</b>			<b>Symposium on Cannabis Processing</b> Chair: Herminio C. de Sousa	
	8:30 - 9:30	Plenary Lecture	<i>The Role of Sub-and Super-critical Fluids in the Processing of Cannabis/Hemp</i>	King, Jerry CFS (Critical Fluid Symposia) (USA)
	9:30 - 10:00	Keynote	Important aspects and challenges for the supercritical extraction processes in industry	Nunes, Pedro Ivo Singularity (Brazil)
	10:00 - 10:30	Keynote	Processing of hemp seed and cannabis flowers - a New Zealand perspective	Catchpole, Owen Callaghan Innovation (New Zealand)
	10:30 - 11:00	Coffee Break		
			Chair: Pablo Hegel	
	11:00 - 11:30	Keynote	Ultra High-Pressure Processes-Design and Examples	Knez, Zelkjo University of Maribor/Uhde High Pressure Technologies GmbH (Slovenia/Germany)
	11:30 - 12:00	Keynote	Development of an Online Integrated Method for Analyzing Bioactive Compounds: Pressurized Liquid Extraction Coupled with High-Performance Liquid Chromatography	Viganó, Juliane Universidade Federal de São Carlos (Brazil)
	12:00 - 12:30	Keynote	Come into a new era of purification	Kone, Assia SFE Process (France)
	12:30 - 14:00	Lunch		

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TUESDAY (31/10)			<b>Session: Extraction &amp; Fractionation</b> <b>Chairs: Julián Martínez</b>	
	14:00 - 14:20	Oral	Antioxidant extracts from olive pomace by compressed fluid extraction technologies: comparison between SFE and PLE	Dauber, Cecilia Universidad de la República (Uruguay)
	14:20 - 14:40	Oral	Simultaneous extraction of macauba oil and active compounds from olive leaves using pressurized propane	Cabral, Vladimir Universidade Estadual de Maringá (Brazil)
	14:40 - 15:00	Oral	Extraction of volatile oils from aromatic Ecuatorian plants	Jaramillo, Lorena Escuela Politécnica Nacional/ Université de Toulouse (France)
	15:00 - 15:20	Oral	Extraction of bioactive compounds from <i>Scaptotrigona depilis</i> pollen using supercritical carbon dioxide	Gomes da Silva, Adriane Universidade Federal do Pará (Brazil)
	15:20 - 15:40	Oral	Concentration of oxygenated terpenes in orange essential oil by supercritical fluid adsorption	Saldanha Carvalho, Victor UNICAMP (Brazil)
	15:40 - 16:00	Oral	High pressure packed column for fractionation of low volatile and viscous mixtures. Conceptual design of glycerol acetates refinement with scCO <sub>2</sub>	Fortunatti Montoya, Mariana PLAPIQUI-UNS-CONICET (Argentina)
	16:00 - 16:30	Coffee Break		
			<b>Session: Materials Processing</b> <b>Chairs: Alejandra Torres and Nicolás Gañán</b>	
	16:30 - 16:50	Oral	Ionic gelation assisted by compressed fluids (IGACF): a new process for microencapsulation of bioactives in chitosan	Pardo Castaño, Camilo Universidad del Valle (Colombia)
	16:50 - 17:10	Oral	CO <sub>2</sub> + Ethanol Assisted Impregnation of Chitosan Microparticles with Curcumin	Cassel, Eduardo Pontifícia Universidade Católica do Rio Grande do Sul (Brazil)
	17:10 - 17:30	Oral	Chitosan-TPP based aerogels for tissue engineering applications	Bento, Cristiana University of Coimbra (Portugal)
	17:30 - 17:50	Oral	Nutraceutical delivery via SC-CO <sub>2</sub> : Lentil protein and pectin based aerogels to encapsulate $\beta$ -carotene	Mekala, Srujana University of Alberta (Canada)
	17:50 - 18:10	Oral	Supercritical CO <sub>2</sub> Assisted Impregnation of Pink Pepper Essential Oil in Gelatin-Siloxane Gels for Biomedical Applications	Maia-Obi, Ligia Federal University of ABC (Brazil)
	18:10 - 18:30	Oral	Supercritical CO <sub>2</sub> -assisted impregnation of PLA films with R-carvone: I. Effect of processing on thermal and crystallinity properties	Goñi, María Laura IPQA-UNC-CONICET (Argentina)
20:30	Dinner			

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Day	Time	Presentation Format	Title	Speaker & Affiliation	
WEDNESDAY (01/11)			<b>Session: Neoteric Solvents</b> <b>Chair: Sandra Ferreira</b>		
	8:30 - 9:30	Plenary Lecture	<i>Advances on the use of sustainable solvents for pharmaceutical and biomedical applications</i>	Duarte, Ana Rita NOVA School of Science and Technology (Portugal)	
	9:30 - 9:50	Oral	High-pressure sequential extractions using aqueous solutions of deep eutectic solvents (DES): a sustainable process with Green Certificate	Benvenuto, Laís Federal University of Santa Catarina (Brazil)	
	9:50 - 10:10	Oral	New Deep Eutectic Solvents based on hyperbranched polyglycerols and superbases for CO <sub>2</sub> absorption	Silveira Dos S., Gabriel Institute of Chemistry University of São Paulo (Brazil)	
	10:10 - 10:30	Oral	Comparison of emerging extraction techniques for recovering phenolic compounds from avocado byproducts using a Natural Deep Eutectic Solvent based on chloride choline and lactic acid	Grisales-Mejía, Juan F. Universidad Nacional de Colombia (Colombia)	
	10:30 - 11:00	Coffee Break			
				<b>Session: Fundamentals</b> <b>Chairs: Martin Cismondi</b>	
	11:00 - 11:30	Keynote	Complex Fluid Phase Behavior in Binary and Ternary Systems, including the Critical Region	Peters, Cor Colorado School of Mines (Holland/USA)	
	11:30 - 11:50	Oral	Supercritical carbon dioxide processing of maritime pine ( <i>Pinus pinaster</i> ): sorption study	Leocádio, João University of Coimbra (Portugal)	
	11:50 - 12:10	Oral	Interfacial description of binary systems containing CO <sub>2</sub> , n-butanol and H <sub>2</sub> O	Villablanca-Ahues, Rafael Technische Universität Clausthal (Germany/Austria)	
	12:10 - 12:30	Oral	Influence of phase behavior on enzymatic esterification of residual oils using propane as solvent: experimental study and thermodynamic modeling	Nogueira, Bruno Universidade Federal do Rio de Janeiro (Brazil)	
	12:30 - 14:00	Lunch			
				<b>Session: Materials Processing</b> <b>Chairs: Eduardo Cassel</b>	
	14:00 - 14:30	Keynote	ScCO <sub>2</sub> -impregnation of clove extract in polycarbonate, poly(L-lactic acid) and their blends	Champeau, Matilde Federal University of ABC (Brazil)	
	14:30 - 14:50	Oral	Supercritical CO <sub>2</sub> and melt-extrusion to produce enhanced PLGA scaffolds	Gracia, Ignacio University of Castilla-La Mancha (Spain)	
	14:50 - 15:10	Oral	Effect of operational variables on the development of PLA/PBAT active foams using supercritical fluids	Torres, Alejandra University of Santiago de Chile (Chile)	
	15:10 - 15:30	Oral	Phase Boundaries and Copolymerization of Acrylic Acid + Butyl Methacrylate + Carbon Dioxide under High-Pressure Single-Fluid Initiation	Milanesio, Juan IPQA-UNC-CONICET (Argentina)	

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WEDNESDAY (01/11)	15:30 - 17:30		Poster Session 2 + Coffee Break	
	17:30 - 20:30		Social Activity	
	20:30		Conference Dinner	

Day	Time	Presentation Format	Title	Speaker & Affiliation	
THURSDAY (02/11)			<b>Session: Food and functional food ingredients</b> Chair: Jane Block		
	8:30 - 9:30	Plenary Lecture	<i>Supercritical Fluid Technology for Food Processing</i>	Martínez, Julián UNICAMP (Brazil)	
	9:30 - 9:50	Oral	Effect of supercritical CO <sub>2</sub> extraction as pretreatment to obtain c-phycoyanin from spirulina ( <i>Arthrospira maxima</i> )	Lopez-Limón, Juana Universidad Iberoamericana Puebla (Mexico)	
	9:50 - 10:10	Oral	Development of $\beta$ -sitosterol-loaded nanocapsules obtained by supercritical fluid extraction of emulsion process for potential use in functional foods	Cerro, Daniela University of Santiago de Chile (Chile)	
	10:10 - 10:30	Oral	Supercritical CO <sub>2</sub> extraction of oil from soldier fly larva meal ( <i>Hermetia illucens</i> L) – yield and antioxidant activity	Cruz, Vanessa University of São Paulo (Brazil)	
	10:30 - 11:00	Coffee Break			
				<b>Session: Green Extraction</b> Chair: Vladimir Cabral	
	11:00 - 11:30	Keynote	Selection of Green Extraction Solvents Using the Hansen Solubility Parameters Approach	Sánchez-Camargo, Andrea del Pilar Universidad de los Andes (Colombia)	
	11:30 - 11:50	Oral	Extraction and evaluation of peach ( <i>Prunus persica</i> ) seed oil obtained by supercritical CO <sub>2</sub> extraction	Huayta, Fredy Pontificia Universidad Católica del Perú (Perú)	
	11:50 - 12:10	Oral	Evaluation of the lipid fraction of tucumã-do-Amazonas ( <i>Astrocaryum aculeatum</i> ) almond extracts obtained by SFE	Carvalho, Luciedry UNICAMP (Brazil)	
	12:10 - 12:30	Oral	Supercritical extraction from <i>Citrus reticulata</i> Blanco with carbon dioxide	Batista, Marcelle Federal University of Paraná (Brazil)	
	12:30 - 13:00			<b>Closing Ceremony</b>	