



Sunday, 26th May 2024

16.00-18.00	Registration (registration desk at UM)
17.00-18.30	Meeting of HPT EFCE (North Tower)
18.00-22.00	Welcome reception (Minoriti church) Gathering starts at 18:00 Official program starts at 19:00



Monday, 27th May 2024

8.00-9.00	Registration (registration desk)		
	Vladimir Bračič Hall		
9.00-9.30	Opening and welcome		
9.30-10.15	Plenary session I Dr. Christoph Lütge <i>Industrial applications of supercritical fluid technologies</i> Chair: Ž. Knez		
10.15-10.45	Coffee break (Anton Trstenjak Hall)		
	Vladimir Bračič Hall	Lecture Room 1	Fran Miklošič Hall
	Scale-up and economics Chair: Ž. Knez	Thermodynamics/HP equilibria Chair: M. J. Cocero	Foods and functional food ingredients Chair: E. Székely
10.45-11.10	V. Steinhagen <i>Trends in the development of high-pressure processes</i>	L. A. Estévez <i>Modeling the solubility of β-carotene by a modified Peng-Robinson or Redlich-Kwong equations of state</i>	J. A. P. Coelho <i>Supercritical extraction of <i>Scenedesmus obliquus</i> BGP and <i>Porphyridium cruentum</i>: Assessment of the potential for the algal oils utilization</i>
11.10-11.30	J. Fernandes <i>Assessment of a flow pattern heat transfer model in the design of evaporators and condensers in SFE industrial plants</i>	F. Ercicek <i>In situ microfluidic investigations of APIs crystallization dynamics in $scCO_2$: from thermodynamic equilibrium to growth kinetics</i>	E. Y. Wong <i>Pressurized Gas eXpanded (PGX) liquid technology as a separation, concentration and drying technique for acid and sweet whey streams</i>
11.30-11.50	A. P. Kaucz <i>Reduction of energy consumption in supercritical CO_2 processes using a commercial membrane for CO_2 regeneration</i>	L. Göhlich <i>Generation of liquid CO_2 jets under atmospheric conditions for cutting applications</i>	A. Zambon <i>Increasing food preservation with supercritical CO_2 drying technology</i>
11.50-12.10	S. Barbini <i>Plastics recycling by $scCO_2$: evaluation of OPEX</i>	P. Guillou <i>Thermodynamic assessment of two-step crystallization</i>	L. M. Cuellar <i>Effect of temperature-pressure on the supercritical CO_2 extraction of polyphenols from hydroethanolic suspension of Calafate fruits</i>
12.10-13.10	Lunch break and coffee break (Anton Trstenjak Hall)		
	Vladimir Bračič Hall	Lecture Room 1	Fran Miklošič Hall
	Novel materials	Thermodynamics/HP equilibria	Chemical and biochemical reactions



	Chair: I. Žižovič	Chair: M. Stamenić	Chair: F. Temelli
13.10-13.35	C. Aymonier <i>Supercritical fluids in materials science: synthesis, shaping and recycling</i>	C. Secuianu <i>High-pressures phase equilibria in carbon dioxide + branched alkanes binary systems</i>	M. Petermann <i>Electrochemical activation of supercritical carbon dioxide</i>
13.35-13.55	S. Messias <i>Tuning Cathode Porosity for electrochemical reduction of CO₂ at high pressure</i>	E. Pérez <i>Phase behavior of Therapeutic Deep Eutectic Solvents (THEDES) in presence of supercritical carbon dioxide</i>	M. D. A. Saldaña <i>Cellulose-based packaging material made of wheat straw by combining pressurized water + ethanol and high-intensity ultrasound</i>
13.55-14.15	F. Carrascosa <i>Foaming hydrogels: a new approach in tissue regeneration</i>	N. Piche <i>Liquid or supercritical CO₂ as cooling fluid for cryogenic minimum quantity lubrication</i>	A. Roubaud <i>The chemistry of microalgae conversion under HTL conditions</i>
14.15-14.35	A. Dandre <i>Innovative and flexible synthesis of strontium titanate nanoparticles with new composition in supercritical water/ethanol mixture</i>	M. Kőrösi <i>Melting point depression of a eutectic mixture under carbon dioxide pressure</i>	A. Kruse <i>The hohenheim hydrothermal biorefinery: production of a platform chemical and phosphate fertilizer</i>
14.35-15.05	Coffee break (Anton Trstenjak Hall)		
	Vladimir Bračić Hall	Lecture Room 1	Fran Miklošič Hall
	Transport properties Chair: T. Gamse	Processing Chair: M. Busch	Applications Chair: S. Camy
15.05-15.30	E. Lester <i>Flow modelling and high pressure systems design</i>	E. Reverchon <i>SuperSomes process used for the production of antioxidant nanoniosomes</i>	J. Kim <i>Lignin conversion in fuels and chemicals: role of sub- and supercritical fluids</i>
15.30-15.50	D. D. Rhee <i>Melting and crystallization temperatures and foaming of poly(ϵ-caprolactone) in CO₂ and N₂, and fluid-induced crystallization during foaming</i>	C. S. A. Bento <i>Sterilisation of alginate-gelatine aerogels through an integrated high-pressure and supercritical CO₂-based process</i>	Q. Zheng <i>Mechanism and kinetic study of hydrothermal recycling of PET/PE multi-layer film using a semi-batch system</i>
15.50-16.10	J. S. Schaefer <i>Experimental determination and modeling of the diffusion coefficient as a function of the composition of binary</i>	J. S. Zhang <i>Enhancing sterilization efficacy: evaluating bacterial resistance to supercritical CO₂ for sterilization of implantable medical devices</i>	A. Cosenza <i>Syngas production from organic fraction of municipal solid waste by supercritical water gasification</i>



	<i>mixtures of CO₂ and ethanol</i>		
16.10-16.30	A. Fabien <i>Interfacial properties of ethanol, water and their mixtures in contact with stainless steel under dense CO₂ atmosphere</i>	M. Sauceau <i>Thermal investigations of supercritical CO₂ jet impingement and its cooling applicability in a machining context</i>	E. V. Pasini <i>Process development for catalytic cyclohexene oxide copolymerization with scCO₂</i>
16.30-17.30	General meeting of ISASF (North Tower)		
18.00-20.00	Guided city tour (UM entrance)		



Tuesday, 28th May 2024

Vladimir Bračič Hall	
Section dedicated to Erdogan Kiran	
8.30-8.35	Opening statement Chairs: E. Badens & F. Temelli
8.35-9.20	Plenary session II Prof. Erdogan Kiran <i>Industrially relevant high pressure polymer research based on fundamentals</i>
9.20-9.50	E. Weidner
9.50-9.55	G. Brunner
9.55-10.05	M. J. Cocero
10.05-10.25	J. Sarver <i>Fundamental data for rational selection of foaming conditions in supercritical fluids</i> <i>Lessons learned under pressure from 7 years in Kiran lab</i>
10.25-10.30	Closing remarks Chairs: E. Badens & F. Temelli
10.30-11.00	Coffee break (Anton Trstenjak Hall)
	Vladimir Bračič Hall
	Lecture Room 1
	Novel Materials Chair: C. Secuianu
	Cosmetics, pharmaceuticals, powders Chair: E. Badens
11.00-11.25	I. Žižović <i>SC-CO₂ assisted manufacturing of membrane materials for separation of high-pressure gas mixtures</i>
	M. Knez Marevci <i>Supercritical fluid technologies for the incorporation of synthetic and natural active compounds into materials for drug formulation and delivery</i>
11.25-11.45	P. Gurikov <i>Structural changes in gels by imaging tracer particles using X-ray microtomography</i>
	A. Mouahid <i>Supercritical millifluidic process for the production of lipid-based formulations of anti-cancer drugs</i>
11.45-12.05	B. Schroeter <i>Biopolymer based carbon aerogels: Influence of crosslinking strategy and pyrolysis conditions on textural properties</i>
	A. O'Sullivan <i>Polymorphic control of pharmaceutical cocrystals using conventional bench-top and continuous particle production techniques</i>
12.05-12.25	M. Pantić <i>Modifying the properties and the morphology of starch aerogels using cellulose fibers</i>
	L. Jūrienė <i>Recovery of valuable cosmetic ingredients from berry seeds and pomace using sub/supercritical extraction methods, and their application for cream</i>
12.25-12.45	T. Kotnik <i>PolyHIPEs, hydrogels, and aerogels derived from aliphatic π-conjugated polyazines</i>
	Z. Laggoune <i>Supercritical CO₂ impregnation: a novel approach in the elaboration of active stents</i>
12.45-13.05	I. Bilgic <i>Optimizing the surface area and morphology of TiO₂ aerogels by supercritical drying</i>
	A. Cabañas <i>Supercritical solution impregnation (SSI) of orthopedic prosthesis to prevent infections</i>



13.05-14.05	Lunch break and coffee break (Anton Trstenjak Hall)	
	Vladimir Bračič Hall	Lecture Room 1
	Applications Chair: Z. Novak	Extractions Chair: M. Knez Marevci
14.05-14.30	J. Sarver <i>Solvent dissolution based purification and recycling of polypropylene: fundamental data for industrial applications</i>	J. Lagrue <i>Sequential extraction of high-value added molecules from grape pomaces using supercritical fluids with water as a co-solvent</i>
14.30-14.50	P. Trucillo <i>Design of integrated polymeric sandwiches through physical foaming</i>	J. Jovaišaitė <i>Subcritical water extraction of vincetoxicum spp. leaves: a promising approach for isolation of antiviral compounds targeting zika virus</i>
14.50-15.10	L. G. Kaake <i>Polymer self-assembly and high resolution structural control in sub-critical fluids</i>	A. Mouahid <i>Simulation of SC-CO₂ extraction kinetics: a novel methodology considering the broken and intact cell mathematical model and experimental design</i>
15.10-15.30	J. S. Park <i>Green extraction of marine phospholipids from conger eel byproducts: lipidomic profiles and biological activities</i>	S. V. Luca <i>A systematic supercritical CO₂ extraction study to produce terpene-rich and terpene-depleted cannabidiol fractions from hemp flowers</i>
15.30-15.50	E. Saeed <i>Carbonation kinetics of calcium silicate minerals synthesized by supercritical flow synthesis considering its use for CO₂ sequestration application</i>	A. B. Paninho <i>Optimization of scCO₂ extraction of insect flour oil</i>
15.50-16.10	E. Lester <i>Functional nanomaterial inks for 3D-printed electronics via supercritical continuous-flow synthesis</i>	J. M. del Valle <i>An experimental methodology to validate the use of hydroethanolic mixtures as suspending medium/modifier for the supercritical CO₂ extraction of suspensions</i>
16.10-18.00	Poster section (Lecture Room 1 – lobby) and coffee break (Anton Trstenjak Hall)	
19.00-22.00	Gala dinner (Narodni dom)	



Wednesday, 29th May 2024

Vladimir Bračič Hall	
8.30-9.15	Plenary session III Prof. Tadafumi Adschiri <i>Chemical reactions in supercritical water and their applications</i> Chair: J. Kim
9.15-9.45	Coffee Break (Anton Trstenjak Hall)
	Vladimir Bračič Hall
	Applications Chair: J. Kim
	Lecture Room 1
	Processing Chair: M. Petermann
9.45-10.10	T. Adschiri <i>Synthesis of bio-oils by hydrothermal reaction of biomass</i> <i>Toward carbon neutral society by combining pulp & paper industry, waste treatment industry and chemical industry</i>
	M. J. Cocero <i>Plant barrier biopolyesters from cuticle wastes via ultrafast supercritical hydrolysis</i>
10.10-10.30	M. Škerget <i>Hydrothermal recycling of plastic waste – technology of the future?</i>
	G. Philippot <i>Tuning the polymorphism of ZrO₂ nanocrystals from purely monoclinic to purely tetragonal playing with supercritical hydro- solvothermal conditions</i>
10.30-10.50	E. Duarte <i>Supercritical fluid assisted ionothermal relithiation of Li_{1-x}(Ni_{0.6}Mn_{0.2}Co_{0.2})O₂ positive electrode materials for Li-Ion battery direct recycling</i>
	M. Osada <i>Production of biomass nanofibers self-sustaining hydrogels by hydrothermal gelation</i>
10.50-11.10	I. Gaalich <i>Life cycle assessment of an innovative process assisted by pressurized CO₂ for the direct recycling of lithium-ion battery positive electrode production scraps</i>
	L. Calvo <i>Preparation of Liposomes by SFEE. Application to encapsulate amphotericin B</i>
11.10-11.30	Z. Li <i>Recycling of LiFePO₄ cathode material by hydrothermal leaching with glycine, oxalic acid or citric acid and precipitation isolation</i>
	D. Adam <i>New supercritical flow synthesis of Ba_{1-x}Sr_xTiO₃ nanocrystals using acetylacetonate precursors for the development of dielectric composites</i>
11.30-11.50	O. N. Ciftci <i>Upcycling tomato processing waste through a green integrated extraction-reaction-particle formation process</i>
	D. Piña <i>DELOS-SUSP for the production of highly homogeneous non-liposomal nanovesicles</i>
11.50-12.50	Lunch break and coffee break (Anton Trstenjak Hall)
	Vladimir Bračič Hall
	Lecture Room 1
	Processing Chair: M. D. A. Saldaña
	Applications Chair: M. Škerget



12.50-13.15	A.A. Myint <i>Integrated sub-/supercritical fluids to produce highly stable encapsulated astaxanthin/β-cyclodextrin microparticles from wet <i>Haematococcus pluvialis</i></i>	L. Calvo <i>Antimicrobial activity of the supercritical CO₂ in the healthcare field</i>
13.15-13.35	C. Costa <i>Continuous manufacturing in pharma: a benchmarking between supercritical fluids and electrospraying in drug crystallization</i>	S. Mottola <i>Highly effective removal of pollutants using cactus wastes-loaded bio-aerogels produced by supercritical drying</i>
13.35-13.55	L.A. Estévez <i>Solubility of chlordiazepoxide in supercritical carbon dioxide: modeling investigation</i>	Y. Akbas <i>PVDF removal from shredded spent Li-ion battery via supercritical CO₂</i>
13.55-14.15	Baassiri <i>CFD modelling of supercritical CO₂-assisted spray drying for drug particle production</i>	E. Menalla <i>Hydrolysis of cutin from tomato peels in subcritical and supercritical water: new polyester building blocks and products</i>
14.15-14.45	Award Ceremony Closing	
14.45-15.15	Coffee break (Anton Trstenjak Hall)	
15.30-16.30	Laboratory visit (optional)	