

EMSF 2026 (14.-17.6.2026) at TU Clausthal (TUC)

	Sunday, 14.6.2026
17:00 – 21:00	Registration
18:00 – 21:00	Opening Ceremony – Welcome reception

	Monday, 15.6.2026		
8:00	Registration		
8:30 – 9:30	Plenary lecture by Prof. Irina Smirnova, TU Hamburg, Germany (Chair: Feral Temelli) “Aerogels: a journey from industry to academia and back: current status and future perspectives”		
	Session I: Fundamentals and Properties	Session II: Pharmaceutical and Biomedical Applications	Session III: Novel and Porous Materials
	Chair: Thomas Müller	Chair: Paolo Trucillo	Chair: Ed Lester
9:45 – 10:15	Gurikov: Thermodynamically consistent analysis and reliability filtering of solubility data in supercritical CO ₂	García-González: Towards novel biomedical uses of aerogels using supercritical fluid technology	Zanotti: Effect of ZSM-5 addition on k-carrageenan aerogels properties: bridging precursors characteristics and nanostructures swelling behavior
10:15 – 10:35	Bilgic: A microcapillary method for simultaneous quantification of composition and density of coexisting phases of high pressure VLEs	Yu: Towards the development of supercritical microfluidic processing to form microparticles for long-acting injectable biotherapeutics	Martin: Reversible solid-state hydrogen storage materials by nanoconfinement of magnesium hydride in aerogels
10:35 – 10:55	Göhlich: Delayed phase transition of carbon dioxide during expansion below the triple point pressure	Dietze: Development of an integrated process for decellularization and cross-linking of collagen materials using supercritical carbon dioxide	Rojas: A novel approach to antibacterial food packaging: PLA foams and thymol cocrystals via supercritical fluid technology
10:55 – 11:15	Arany: Phase behavior of polycaprolactone – non-steroidal anti-inflammatory drug systems in pressurized carbon dioxide medium	Mottola: Process optimization of the supercritical CO ₂ impregnation to functionalize electro-spray PVP particles, used for targeted healthcare applications	Zenginobuz: Development of lightweight zeolite/aerogel composite adsorbents for mobile oxygen concentrators
	Coffee break		
	Chair: Andreas Bräuer	Chair: Christelle Crampon	Chair: Bernhard Seifried
11:45 – 12:05	Marevci: Phase equilibria (solid–liquid–gas) in poly(ethylene glycol)–carbon dioxide systems up to 4500 bar	Calvo: Supercritical CO ₂ -based inactivation and removal of prosthesis biofilms using trace-level additives	Carrascosa: Reinforced porous scaffolds for biocompatible medical implants

12:05 – 12:25	Fruton: Looking inside the Widom region: non-equilibrium stratification in supercritical CO ₂	Zizovic: Cocrystal solubility in scCO ₂ and its potential for pharmaceutical applications – Case study of aerogel impregnation with fenofibrate-nicotinamide complex	Blanco-Vales: Supercritical fluid-assisted production of reprocessed starch aerogels
12:25 – 12:45	Szabries: Liquid foams at elevated pressure	Carracedo-Pérez: Scalable supercritical CO ₂ sterilization of medical devices and bioaerogels: A focus on materials performance preservation and process sustainability	Semercioglu: Development of MOF aerogel composites (MOFACs) as adsorbents for CO ₂ capture
12:45 – 13:05	Schwarz: High-pressure rheology of polyethylene: scCO ₂ as a reversible plasticizer for melt processing	Sarnelli: Optimization of a supercritical CO ₂ -based continuous process for the controlled production of lipid-based nanovesicles	Wang: Exploration of large-scale production of silica aerogels via ethanol supercritical drying
13:05 – 15:00	Lunch – Poster Session – Exhibition		
	Session IV: Reaction in Near and Supercritical Media		Session V: Food and Natural Ingredients
	Chair: Edit Szekely		Chair: Irena Zizovic
15:00 – 15:30	Müller: High-pressure modified Fischer–Tropsch synthesis of ethene from CO ₂ and H ₂ : Process windows and environmental implications	Coelho: Sustainable microencapsulation of bioactive microalgae oils using environmentally friendly solvents	
15:30 – 15:50	Alsuhibe: Pt-Carbon black electrocatalysts by supercritical deposition: Effects of conversion route, Pt-precursor concentration, temperature, and pressure	Minceva: Supercritical CO ₂ co-extraction of hemp flowers and seeds to produce ready-to use cannabidiol oils	
15:50 – 16:10	Lee: Highly efficient lignin extraction and depolymerisation from black liquor via a continuous supercritical water process	Pajnik: Supercritical CO ₂ impregnation of cellulose-based aerogels for high-efficiency CBD loading	
	Coffee break		
	Sustainable Feedstock Utilization		Food and Natural Ingredients
	Chair: Danilo Cantero		Chair: Lourdes Calvo
16:30 – 16:50	Tomai: Superior mass-transport in hydrothermal conditions utilizing nanostructured electrodes in electrochemical CO ₂ reduction	Pigaleva: Biomacromolecules in the carbonic acid solutions under high CO ₂ pressure	
16:50 – 17:10	Carmo: Recovery of bioactive peptides from olive pomace by subcritical water hydrolysis	Sadek Ali: Supercritical CO ₂ extraction of bioactive compounds from olive leaves and their impregnation into PLA/PBAT/TPs active packaging films	
17:10 – 17:30	Alessandro: Olive mill wastewater remediation and valorization through supercritical water gasification	Fernández: Ergosterol-rich mushroom extracts: Supercritical CO ₂ and pre-treatment synergies	
17:30 – 17:50	Menalla: Solubility and reaction behavior in oleochemical production using subcritical and supercritical water	Ciftci: Integrated supercritical CO ₂ biorefineries for a sustainable food system	
18:00 – 19:00	ISASF Annual Meeting		

Tuesday, 16.6.2026					
8:30 – 9:30	Plenary lecture by Prof. Denis Rodrigue, Université Laval, Quebec City, Canada (Chair: Valerian Hirschberg) “Applications of supercritical fluids in polymer processing”				
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	Lunch – Poster Session – Exhibition				
14:00 – 16:00	Honorary session Prof. Dr. Michael Buback, Georg-August-Universität Göttingen, Germany (Chair: Sabine Beuermann) “Chemical processes in supercritical fluid phase”				
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16:00 – 22:00	Visit to the historical mining site, Rammelsberg, and Gala Dinner in an historical environment				

Wednesday, 17.6.2026		
8:30 – 9:30	Plenary lecture by Dr. Pierre Gavoille, CEA Energy Division, France (Chair: Elisabeth Badens) “Supercritical fluids for energy conversion systems: Opportunities and challenges”	
9:30 – 10:40	Session VIII: Scale up and Process Optimization	Session IX: Supercritical Fluids in a Circular Economy
	Chair: Kim Jaehoon	Chair: Pavel Gurikov
9:30 – 10:00	Barbinj: Industrial design and operating pressures in scCO ₂ extraction: A comparative analysis	Trucillo: Designing sustainability: When metrics, supercritical fluids and materials converge
10:00 – 10:20	Klein: Continuous supercritical CO ₂ fractionation of wet microalgal suspensions for selective recovery of neutral lipids	Saldaña: Biorefinery of oat straw using subcritical water and pressurized aqueous ethanol: Phenolic recovery and cellulose enrichment
10:20 – 10:40	Cantero: Ultrafast, Catalyst-Free Hydrothermal Hydrolysis of Triglycerides: Kinetic Selectivity and Energy Integration at Pilot Scale	Kim: Biomass conversion for fuels and chemicals: Role of sub- and supercritical fluids
	Coffee break	
	Chair: Arne Pietsch	Chair: Ozan Ciftci
11:00 – 11:30	Mathias: Supercritical CO ₂ extraction: From theory to industrial implementation	Zheng: Recent advances in organic acid hydrothermal leaching technology for metal recovery from spent lithium-ion batteries
11:30 – 11:50	Lester: Exploring supercritical water reactor design for the conversion of lignin-rich wastewater into valuable products	Li: Recovery of high purity Ni- product from laterite nickel ore with organic acids under hydrothermal conditions
11:50 – 12:10	Brian: Innovative wine dealcoholisation using hybrid supercritical CO ₂ extraction/distillation process	Pope: Advances in the direct recycling of end-of-life Li-ion positive electrodes using pressurised fluids
12:20 – 13:00	Closing ceremony – Awards	