

**ERASMUS+ BIP ESS-HPT 2024 "The European Summer School in High Pressure Technology"**

**7.7. -20.7.2024, TU Graz**

**Online Phase 22.7. – 23.8.2024**

	MORNING				AFTERNOON										
	8:30 - 9:15	9:25 - 10:10	10:30 - 11:15	11:25 - 12:10	13:15 - 14:00	14:10 - 14:55	15:15-16:00	16:10 - 16:55	17:00 - 17:45	17:45 - 18:30					
Sunday, 7 July 2024	<b>Arrival</b>									18:30 Registration	19:00 Welcome Dinner				
Monday, 8 July 2024	<b>Opening Short Introduction of each Participant</b>		HP Phase Equilibria - Fundamentals (Bren, Maribor/SI)		HP Phase Equilibria - Experimental Methods (Knez-Marevci, Maribor/SI)		16:00 -17:30 guided tour Graz			Free time	Discussion + 20:30 Dinner				
Tuesday, 9 July 2024	<b>Discussion &amp; Coffee Break</b>		Innovative Supercritical Separation Processes for Energy and Resource Reduction (Zetzi, Hamburg/DE)		<b>Discussion &amp; Lunch Break</b>		HP Phase Equilibria - Modelling (Martin, Valladolid/ES)		Supercritical Fluids in Process and Product Design – From Bench Scale to Pilot Plants (Petermann, Bochum/DE)		<b>Exam 1 (Martin, Valladolid/ES)</b>		Discussion + 20:30 Dinner		
Wednesday, 10 July 2024			Chemical Conversions under High Pressure (Müller, Bochum/DE)				Mass Transfer Limitations in Multiphase Reactions (Müller, Bochum/DE)		Biodiesel Synthesis under High Pressure (Stamenic, Belgrade/RS)		Supercritical Water Properties & Applications (Cocero, Valladolid/ES)		Oral Presentation Students (6)		Discussion + 20:30 Dinner
Thursday, 11 July 2024			How to Design High Pressure Equipment (Schlücker, Erlangen/DE)				How to Design High Pressure Equipment (Schlücker, Erlangen/DE)		Transfer to Maribor	15:00 - 16:30 Visit of HP Lab Maribor		16:30 - 18:00 tour Maribor		18:00 - 20:00 Dinner Maribor	
Friday, 12 July 2024	<b>Discussion &amp; Coffee Break</b>		How to Design High Pressure Equipment (Schlücker, Erlangen/DE)		<b>Discussion &amp; Lunch Break</b>		Kinetics of High Pressure Chemical Reactions Including Benefits (Busch, Darmstadt/DE)		Application of Pressure and SCF Technology in a World Scale Process (Busch, Darmstadt/DE)		Oral Presentation Students (6)		Discussion + 20:30 Dinner		
Saturday, 13 July 2024			SCF Extraction of Solid Materials - Design Criteria from Lab Scale to Industrial Scale Plants (Gamse, Graz/AT)				Tutorials in HP Separation Processes for Process Intensification (Gamse, Graz/AT)		Free Time optionally: 14:00 - 17:00 Gin Seminar				Free time		
Sunday, 14 July 2024			Free Time												

Monday, 15 July 2024	Kinetics of SCF Extraction of Compounds from Plants and Microalgae (Sovova, Prague/CZ)		Impregnation and Grafting in Supercritical CO <sub>2</sub> - Challenges and Prospects (Zizovic, Wroclaw/PL)		HP Particle Generation - Pros and Cons to Conventional Processes (Knez, Maribor/SI)	Break	HP Enzymatic Processes - Advantages to Organic Solvents (Knez, Maribor/SI)	Break	Oral Presentation Students (6)	Discussion + 20:30 Dinner		
Tuesday, 16 July 2024	Transfer to NATEX Prozesstechnologie		Design and Layout of Closure Systems and Sealings for High Pressure Vessels (Lack)	Visit of NATEX Prozess-technologie GmbH	Transfer to Innoweld	Visit of INNOWELD Company	Transfer to Graz		17:30 - 20:00 Dinner Graz			
Wednesday, 17 July 2024	Extrusion Foaming of Polymers (Sauceau, Albi/FR)	Discussion & Coffee Break	Processing of Aerogels by Supercritical Fluid Technology and their Applications (Gurikov, Hamburg/DE)	Discussion & Coffee Break	Thermodynamic Aspects of Supercritical Fluid Chromatography (Gurikov, Hamburg/DE)	Exam 2	Discussion & Coffee Break	Oral Presentation Students (6)	Discussion + 20:30 Dinner			
Thursday, 18 July 2024	Oral Presentation Students (6)		Application of CO <sub>2</sub> -Extracts in Food and Cosmetic Industry (Grüner-Lempart, Freising/DE)		Supercritical Fluids in the Oil and Gas Industry (Székely, Budapest/HU)					From Sampling to Analysis (Perva, Maribor/SI)	Free time	Discussion + 20:30 Dinner
Friday, 19 July 2024	Supercritical Fluid Extraction and Separation of Active Components from Medicinal Plants (Vagi, Budapest/HU)		CO <sub>2</sub> Capture and Utilisation (Nunes, Lisbon/PT)		Preparation Final Exam					Free time	Free time	20:00 Farewell Dinner
Saturday, 20 July 2024	ESS-HPT Closing Ceremony	Departure										