ESS-HPT

The European Summer School in High Pressure Technology

2nd July – 16th July 2017

University of Maribor, Slovenia
and
Graz University of Technology, Austria

Speakers:

The European Summer School in High Pressure Technology is promoted by the members of the Working Party “High Pressure Technology” of the European Federation of Chemical Engineering (EFCE). All members, recognised European experts, both in the theoretical aspects and in the industrial applications of high pressure technologies, will present the keynote lectures.

Prof. Gamse, Graz University of Technology, Austria, Organiser of the Course
Prof. Knez, University of Maribor, Slovenia, Local Organiser in Maribor
Prof. Bren, University of Maribor, Slovenia
Dr. Knez-Hrncic, University of Maribor, Slovenia
Dr. Perva-Uzunalic, University of Maribor, Slovenia
Dr. Lack, NATEX Prozesstechnologie, Austria
Dr. Sovova, Institute of Chemical Process Fundamentals, Prague, Czech Republic
Prof. Fages, Ecole des Mines d'Albi-Carmaux, France
Prof. Petermann, Ruhr University Bochum, Germany
Prof. Busch, Technical University of Darmstadt, Germany
Prof. Schlücker, University of Erlangen-Nürnberg, Germany
Dr. Zetzl, Technical University Hamburg-Harburg, Germany
Dr. Gurikov, Technical University Hamburg-Harburg, Germany
Prof. Szekely, Budapest University of Technology and Economics, Hungary
Dr. Zambon, University of Padua, Italy
Prof. Kleintjens, DSM Research and Patents, Netherlands
Prof. Cocero, University of Valladolid, Spain
Prof. Martin, University of Valladolid, Spain
Prof. Alonso, University of Valladolid, Spain
Prof. Schaschke, University of Abertay, United Kingdom
Prof. Zizovic, University of Belgrade, Serbia

Keynote Lectures:

Basics:

- Thermodynamic Properties and Phase Equilibria for HPT Phase Equilibria
- HP Transport Processes Including CFD Simulation
- Kinetics of High Pressure Chemical Reactions Including Benefits
- HP Viscometry - Pros and Cons for Process Intensification
- Preparation of Catalysts in Supercritical Fluids
- Selective Pre-Treatment of Plant Material for Optimized Release of Active Principles During SFE
- Modelling of Efficiency and Energy Consumption of SCF Extraction from Plant Materials
- Process Intensification by Supercritical Water

Applications:

- SCF Extraction of Solid Materials - Advantages in Energy and Resource Consumption to Conventional Processes
- Tutorials in HP Separation Processes for Process Intensification
- HP Extraction and Separation of Pharmaceutical Plants
- HP Production of Chiral Compounds
- Counter Current SCF Extraction - Comparison and Pros to Conventional Processes
- Supercritical Fluids in Process and Product Design – from Bench Scale to Pilot Plants
- Application of Pressure and SCF Technology in a World Scale Process
- HPT for High Quality Pharmaceuticals and Cosmetic Products
- HP Pasteurisation and Sterilisation - A Promising Low Energy Consumption Technology
- HP Food Processing - Fresh Food by Energy Input
- HP Extrusion - Increase of Productivity by Decrease of Energy Consumption
- HPT in Materials Industry - Strategies for Process Intensification, Energy and Resource Reduction
- HP Particle Generation - Pros and Cons to Conventional Processes
- HP Enzymatic Processes - Advantages to Organic Solvents
- Supercritical Water Oxidation - An Efficient and Clean Energy Production Technology
- HP and Ionic Liquids for Green Chemistry Applications
- Innovative Supercritical Separation Processes for Energy and Resource Reduction
- Intersection of Chemical and Biomedical Engineering: Green Technologies Towards the Development of Enhanced Biomaterials

Equipment:

- High Pressure Equipment
- Design and Layout of Closure Systems and Sealings for High Pressure Vessels
- Practical applications will be shown within the visit to NATEX company.

Oral Presentations:

All participating students have to present their research topic within an oral presentation (10 min + 5 min discussion). They have to send an abstract in advance (max. 4 pages), which will be published in the book of abstracts.

Diploma:

For this European Summer School **5 ECTS-Credits** will be delivered to the participants after passing all examinations. These credits are included in the diploma handed over at the end of the summer school.

Preliminary Program

Sunday, 2nd July 2017

Arrival at University of Maribor

18:00 Registration, Come Together

19:30 Welcome Dinner

Monday, 3rd July until Sunday, 8th July 2017 University of Maribor

8:45 - 19:00 Keynote Lectures, Oral presentations, Exercises, Exams

Monday, 10th July 2017

7:00 - 22:00 Visit of NATEX Company, Keynote Lecture, Social Programme, Transfer to Graz

Tuesday, 11th July 2017 until Friday, 14th July 2017, Graz University of Technology

8:45 - 19:00 Keynote Lectures, Oral presentations, Exercises, Exams

Saturday, 15th July 2017

8:45 - 16:00 Keynote Lectures, Final Exam

20:00 Farewell Dinner

Sunday, 16th July 2017

9:00 – 11:00 Delivery of Diploma, Closing Ceremony, Departure from Graz

Registration Fees for Additional Participants

Students	1.400 €			
Companies:	1 week:	2.000 €	2 weeks:	3.000 €

The registration fee includes

- participation in the course
- documentation (lecture notes, book of abstracts)
- diploma
- **accommodation and full board**
- visit of industries including bus transportation.

Travel costs to Maribor and from Graz are not included.

Deadline for Registration
1st May 2017

For further information please contact the coordinator by email

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