



COST ACTION GREENERING – DATA COLLECTION

First name, Family Name: Thomas GAMSE

Type (Academic or Industrial): Academic

Country: Austria

Leadership position in the COST: WG3 Leader

Working Group in which you are involved: WG3

E-mail: Thomas.Gamse@TUGraz.at

Laboratory/Company:

TUG - Graz University of Technology

CEET - Institute of Chemical Engineering and Environmental Technology

Inffeldgasse 25/C

A- 8010 Graz

Austria

Laboratory/Company info:

CEET is active in

- Basics of Chemical Engineering Thermodynamics
- Mass Transfer Unit Operations
- Chemical Reaction Engineering
- Process Simulation Tools

We are very proud of our equipment in the base lab as well as the technical lab. We can provide investigation of process steps in different scale (lab scale up to pilot scale), support experiments with process analytics and validate simulations with test runs.

Link to the home page of the Laboratory/Company:

<https://www.tugraz.at/en/institutes/ceet/home/>

Fields of expertise:

- All different kind of mass transfer unit operations (distillation, liquid-liquid extraction, drying, membranes,)
- Special knowledge in supercritical fluid extraction (solid and liquid raw materials) and supercritical fluid impregnation
- Development of full production processes including feasibility studies

5 Main publications or patents:

- Lack E., Gamse T., Marr R., "Extraction of Solids", in High Pressure Process Technology: Fundamentals and Applications, edited by A.Bertucco and G.Vetter, Elsevier Verlag, 2001, chapter 6.6, 378-395
- Gamse T., Marr R., "Extraction from Liquid Mixtures", in High Pressure Process Technology: Fundamentals and Applications, edited by A.Bertucco and G.Vetter, Elsevier Verlag, 2001, chapter 6.7, 396-403
- Gamse T., Rogler I., Marr R., "Supercritical CO₂ Extraction for Utilisation of Excess Wine of Poor Quality", Journal of Supercritical Fluids 14 (1999), 123-128



- Gamse T., "Supercritical Fluid Techniques for Production of Micron and Submicron Particles", Journal of Oil Soap Cosmetics 54 (2005), 161-167
- Campos Dominguez C., Gamse T., "Process Intensification of Liquid Fractionation with Supercritical Fluids by Use of Micro Devices", Chemical Engineering Research and Design 108 (2016) 139-145
- Varga D., Alkin S., Glusnitz P., Péter-Szabó B., Székely E., Gamse T., "Supercritical Fluid Dyeing of Polycarbonate in Carbon Dioxide", Journal of Supercritical Fluids 116 (2016) 111-116.

Collaborations:

- NATEX Prozesstechnologie (Austria)
- VTU Engineering (Austria)
- BDI - BioEnergy International (Austria)
- Prozess Optimal Holzer GmbH (Austria)
- all partners of EFCE Working Party "High Pressure Technology"
- all partners of ESS-HPT "The European Summer School in High Pressure Technology"

Facilities:

- several mass transfer unit operations apparatus (distillation, liquid-liquid extraction, high pressure CO₂ plants, drying, membranes,) in lab scale sizes up to pilot scales
- several analytical equipment (GC-FID, GC-MS, AAS, HPLC, TOC, titration incl. Karl Fischer, Paar densiometer, viscosity,)