

!! Lecture Announcement!!

(students with background in mechanical & chemical engineering, pharmaceutical sciences, as well as chemistry are welcome!)

CHE.874UF

Design of Multiphase Flow Processes

1.3 Lecture/0.7 Exercise
Summer 2020

Institute for Process and Particle Engineering,
Simulation Science Group
<https://ippt.tugraz.at/SimSci>

Short Description

An overview of the applications of multiphase reactors will be provided, mainly focusing on fundamental reactor design and selected applications in the area of “pharmaceutical engineering”. For example, the influence of mixing on fast chemical reactions will be discussed. The students will gain advanced skills in the conceptual design, calculation and simulation of multiphase reactors (e.g., gassed stirred tanks, fluidized beds).

Core Topics

- Mixing and Fast Chemical Reactions
- Rheology and Species Transport in Liquids
- Fluidized Beds
- Flow and Mass Transfer in Gassed Stirred Tanks
- Modeling and Numerical Simulation of Multiphase Systems (includes a basic introduction to the software tools **OpenFOAM®**, **LIGGGHTS®**, CFDEM®, and ParScale)

Expected Knowledge of the Participants

Basic skills in reaction engineering and particle technology are desired.

Language

Lecture Notes will be provided **in English**. Presentations and exercises can be given in German or English.

Time

The course starts Friday, March 6th 2020 (9.15 a.m., HS i3). The lessons will be **blocked** such that the course will end mid of June latest. **Details to be discussed during first lecture.**

Contact and Further Details

<https://tc.tugraz.at/main/course/view.php?id=579>
Assoc.Prof. Stefan Radl (radl@TUGraz.at)

includes Software
Training for
OpenFOAM® and
LIGGGHTS®

