

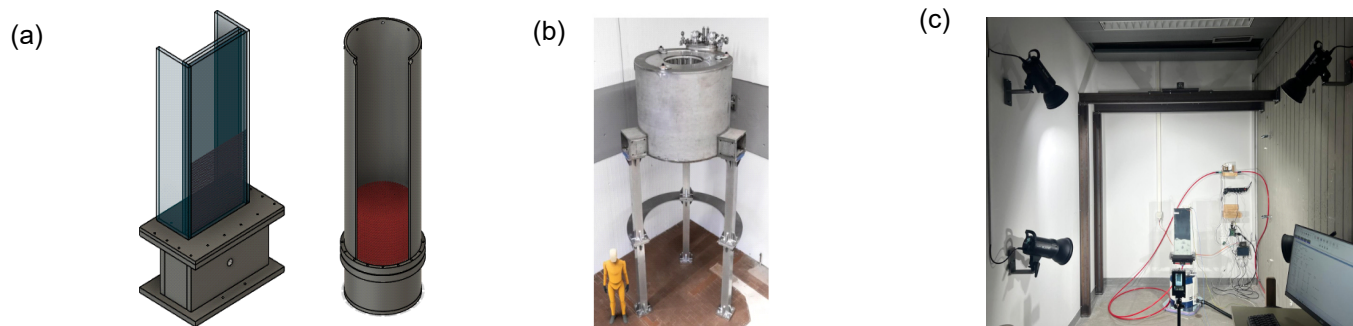
11.03.2025

## Tutor - Process Imaging SoSe 25

Institute of Process Imaging (IPI) offers Process Imaging module which focuses primarily on established imaging techniques that are relevant for chemical and bioprocess engineering. Additionally, the module includes a project-based learning (PBL) practical course, where students work in small teams to investigate a chemical engineering setup—a gas-solid fluidized bed—using two imaging techniques: Magnetic Resonance Imaging (MRI) and optical imaging.

The aim is to investigate critical process parameters such as bubble size, bubble size distribution and bubble rise velocity with two techniques to investigate the strengths and limitations of both techniques.

We are looking for a tutor for the PBL component of the module to assist with experiment preparation, guide students during the experiments, and support data analysis.



*Figure 1: (a) 3D model of pseudo-2D and 3D fluidized beds. Pseudo-2D fluidized bed will be used in optical imaging experiments while 3D bed will be used in MRI measurements. (b) Large-bore vertical MRI scanner, specifically designed for the study of chemical engineering reactors. (c) Experimental setup of vibrated pseudo-2D beds: front lights illuminate the bed, and bubble properties are investigated using a high-speed camera.*

Your profile: Ideally, experimental work experience, programming with Python, experience with optical and magnetic resonance imaging

Starting date: 01.04.2025

Working hours (Hilfskraft in Stunden / Tutorium in SWS): 3.00

Duration: 3 months

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