Master-/Bachelor-Thesis:
„Investigation of mixing in biogas fermenters using Particle Image Velocimetry“

Project description:
For the development and positioning of measurement technology to monitor the mixing quality in biogas fermenters it is important to know the flow conditions in the biogas plant. At the real plant, measurements of the velocity fields in different levels of the fermenter are difficult to perform. Therefore, pilot plant tests are performed on a dimension analytically scaled test rig using Particle Image Velocimetry (PIV). The results will be compared with literature data. Three different stirrer geometries are available: Submersible motor agitator, long axis agitator and paddle agitator. These are to be measured in different configurations at different levels.

Tasks:
- Literature research and evaluation (PIV in the biogas sector)
- Dimensional analysis for the different agitator configurations
- Development and construction of the agitator drive with angular gear (motor is available, bracket for angular gear still to be constructed)
- Practical tests on the plant

Requirements:
- Basic knowledge of fluid mechanics
- Presence required for tests in the pilot plant

What we offer you:
- Safety briefing and practical instruction of the PIV system
- varied tasks from pilot plant work and small engineering tasks
- Motivated Team

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