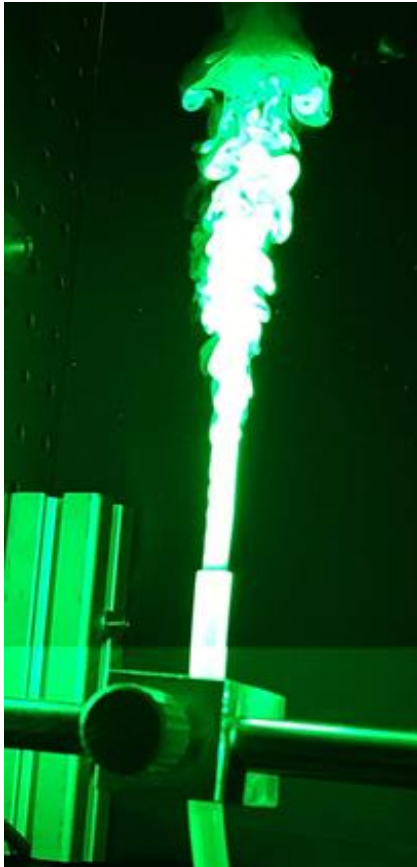


Bachelor/Master Thesis:

Indirect optical geometry measurements with fluorescence particles

Systems Engineering, Mechanical Engineering and Process Technology, Production Engineering, Industrial Engineering, Electrical Engineering, Physics, and related



Making the invisible visible? - With fluorescence particles!

Optical measurement techniques enable fast and precise geometric measurements. However, this is only possible if sufficient light energy is reflected from the object surface to the detector. For this reason, specific measurement methods must be developed for each type of surface.

Therefore, a universally applicable geometry measurement technique is to be researched within the scope of the thesis. Instead of measuring the surface of the object, the geometry of the surrounding gas is measured. The surrounding gas is made visible with the help of tiny, well-controlled fluorescent particles or molecules, the fluorescence signal is detected with a confocal microscope and evaluated with a model-based signal processing.

Possible contents

- Influence of fluorescence and particle properties:
Theoretical and/or experimental investigations
- Signal evaluation:
Evaluation, comparison and extension of different methods
- Determination of measurement quality:
Model-based Matlab/Python evaluation of recordings
and/or theoretical estimation

Your profile

- Enthusiasm for optical or fluorescence measurement technology
- Enjoy experimenting, analysing and understanding
- You like to work independently and responsibly, and want to help shape the future of measurement technology!

Contact:

Björn Espenhahn

☎ (0421) 218 – 64628

@ b.espenhahn@bimaq.de

🌐 www.bimaq.de/en/

✉ Universität Bremen, BIMAQ
Linzer Str. 13
28359 Bremen



(bimaq.de/en/lehre/abschlussarbeiten)