

# Automation of laser-based ceramic deformation measurements

## ✓ Bachelor- / Studien- / Masterarbeit

Piezoceramic materials offer low deformation, but enable their use at extremely high frequencies, where multiple eigenmodes of the piezoceramic body appear and are of high use. Laser-based deformation measurement must be development further and automated to increase the manufacturing and characterization speed of piezoceramics.

### Tasks:

- Preparation of the specimens for experiments
- Setup of laser-based measurement system
- Measurements and analyses of various piezoceramic geometries, analysis of eigenmodes
- Measurement of piezoelectric properties

**Nature of the study:** Experimental work, high-voltage, high frequency dynamics

**You will learn:** safety while working with high voltages, laser-based deformation measurements, high frequency dynamics

**Optionally:** simulations + experimental work

### Additional information:

- You select language of the work, either German or English
- Multiple works on same topic possible (e.g. Studienarbeit + Masterarbeit)

