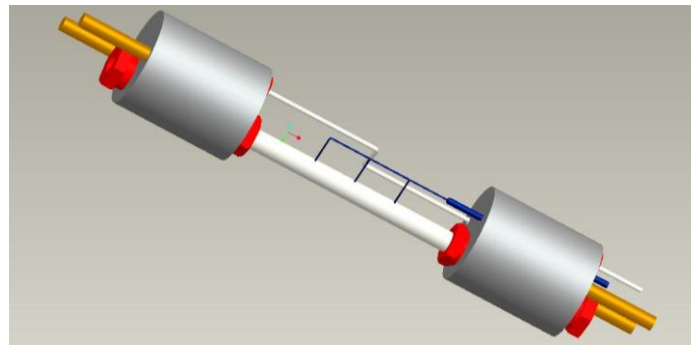


Project / Bachelor- / or Master Thesis

Setup and operation of a high pressure/temperature optical cell for TDLAS validation measurements

Tunable diode laser absorption spectroscopy (TDLAS) is an ideal diagnostic technique for gas-phase temperature and concentration measurements. An optical cell (shown in the figure) which is built up in a tube furnace can provide gas pressure up to 60 bar and temperature up to 1000 K. The cell is used to validate TDLAS measurements using water vapor (and possible other molecules) and compare with spectroscopic modeling.



Task:

- Setup of the cell and other equipment and learn about the basic theory of TDLAS
- Perform a series of experiments for different pressures, temperatures gas mixtures
- Evaluate the measured absorption spectra to obtain the information of absorption line parameters, gas temperature and concentration, and compare those with the given conditions in the cell

Profile:

You are interested in laser diagnostics, and have knowledge of LabVIEW is a bonus.

Contact:

M. Sc. Huinan Yang, Dr. Thomas Dreier, Prof. Christof Schulz
Fakultät für Ingenieurwissenschaften (IVG)
Room MA 361
Tel: 0203-379-3427 E-Mail: Huinan.yang@uni-due.de