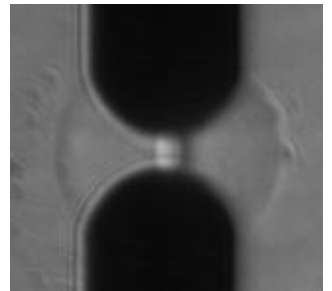


**The Physikalisch-Technische Bundesanstalt is offering a
position for a Bachelor's/Master's Thesis**

in the following subject:

**Investigation of the temperature field after an electrical discharge in
air via background oriented schlieren**

The working group "Analysis and Simulation in Explosion Protection" investigates the ignition of burnable gas/air mixtures by low-energy electrical discharges. Such discharges ("sparks") are frequent ignition sources and may often be the cause of industrial accidents. The rise in temperature due to a discharge is the focus of this thesis topic. It is intended to measure the temperature via background oriented schlieren (BOS). In this method, changes of the refractive index in the hot gas are evaluated and the temperature is determined.



The thesis will comprise these tasks:

- Fine-tuning and calibrating an existing setup
- Conducting the experiments
 - Variation of electrode distance and discharge energy
- Evaluating the experiments

Students interested in this topic should meet the following requirements:

- Course of studies: physics or engineering
- Fundamental understanding of gas dynamics
- Basic skills in octave or python
- Interest in experimental work
- Preferably some experience in optical measurements

Contact details:

Stefan Essmann
Physikalisch-Technische Bundesanstalt
3.51 Analysis and Simulation in Explosion Protection
e-mail: stefan.essmann@ptb.de
phone: +49 531 592-3445

Please send your application documents including a CV and relevant certificates to
stefan.essmann@ptb.de.