

HITEC Methods Day

Title: Spectroscopic Applications in Energy and Climate Research

Date: 29 October, 2014

Time: 9:00 – 16:30
afterwards *get together* with snacks and drinks

Location: [Forschungszentrum](#) ► **Buildg. 2.16, Technikum (IEK-5), Seminarroom**

Optical spectroscopy in the wavelength range from the infrared to the ultraviolet is used as a versatile tool for qualitative and quantitative measurements in different fields of energy and climate research.

In climate research exact measurement of the spatial and temporal distribution of trace gases and free radical in the atmosphere contributes to our understanding of the photochemical processes which determine their lifetime and thus their concentration in the atmosphere (key word: self-cleaning processes of the atmosphere). In energy research optical spectroscopy is being used to characterize materials, i.e. the investigation of optoelectronic properties of solar cell materials or processes, i.e. plasma spray coating of components for turbo machines and power plants or to characterize plasma in fusion experiments.

You will learn about:

- Fundamentals of the absorption of electromagnetic radiation by molecules
- Basic techniques of spectroscopic instruments
- Spectroscopic measurement techniques of free hydroxyl radicals in the lower troposphere
- Remote sensing of trace gases from the airborne platforms
- Spectroscopic analysis of plasma characteristics and feedstock evaporation in thermal spray
- Spectroscopic measurement techniques for the characterization of photovoltaic absorbers
- Experimental spectroscopic techniques and analysis of spectra from hot fusion plasmas

Who should attend:

HITEC Ph.D.-fellows;
Postgraduate-, Ph.D.- and postdoctoral fellows from the fields of energy and climate research

HITEC Days

HITEC Days are an inherent part of the graduate school Helmholtz Interdisciplinary Doctoral Training in Energy and Climate Research (HITEC). They devote a whole day to a method or a scientific topic with lectures and discussions. The methodological days serve to encourage scientific interdisciplinarity and will enable the PhD students to extend their range of methods with respect to their own scientific work. HITEC Days always end with a 'Get together', some snacks and drinks. HITEC Days are open for HITEC Ph.D. students and other interested young scientists.