

PhD Position (50%) in characterization of novel materials and catalysts by in situ X-ray microscopy and related synchrotron radiation based techniques

Job description:

The Chair in Chemical Technology and Catalysis focuses on the design, testing and in-depth characterisation of heterogeneous catalysts. Our research focus ranges from exhaust gas aftertreatment and fine chemical synthesis, to renewable energy applications including biomass conversion. The group operates in close collaboration with other leading figures in both science and industry, offering a complete approach ranging from fundamental studies to industrial applications.

The XRM group utilises techniques including tomography, ptychography and full-field transmission X-ray microscopy, in order to unravel the structure and properties of catalysts from the macro- to the nanoscale. This hierarchical approach promotes understanding of the mechanisms involved, and furthers the design of future catalysts.

The PhD work will be embedded in one of these cutting-edge research projects in the field of X-ray microscopy, applied to the study of catalysis and novel materials from the nanoscale to the real catalyst. It will be combined with electron microscopy and *operando* spectroscopy, and will include design and optimization of new experimental infrastructure. Moreover, you will promote your research and represent the group at international conferences.

You will operate within a multidisciplinary environment, in close collaboration with the group and our external partners. The position will particularly involve the use of synchrotron radiation, therefore you will have the opportunity to conduct experiments at world-leading facilities (eg. DESY, ESRF, SLS, ANKA).

Qualification:

The ideal candidate should hold a Masters Degree (or equivalent) in Physics, Chemistry or Materials Science. Previous experience in one (or more) of the following topics would be beneficial: synchrotron radiation, *in situ/operando* spectroscopy, microscopy, catalysis or physical chemistry. Good experimental skills and previous experience with X-ray based methods are highly desirable. Knowledge of complex data analysis and programming is considered a plus. The candidate should be fluent in verbal and written English, able to work independently and as part of a team.

Salary:

The remuneration occurs on the basis of the wage agreement of the civil service in TV-L. Salary will be according to German public service positions.

Institute:

Institute for Chemical Technology and Polymer Chemistry (ITCP)

Contract duration:

limited

Starting date: as soon as possible

Application up to: 01.05.2016

Contact person: Prof. Jan-Dierk Grunwaldt, Tel : (+49) 721 / 608 42120, e-Mail: grunwaldt@kit.edu

Application: The application should be written in English and include:

- CV
- Cover letter - 1-2 pages including personal introduction, interests and research motivation
- List of publications (if any)
- Contact details of two referees or letters of recommendation

Please attach your application as a single PDF and send it to **Prof. Jan-Dierk Grunwaldt, e-Mail: grunwaldt@kit.edu**

KIT is an equal opportunity employer. Women are especially encouraged to apply. Applicants with disabilities will be preferentially considered if equally qualified.

Karlsruher Institute of
Technology
Personalservice

