

PhD Position (50%)**“Characterizing new exhaust gas catalysts under applied operation conditions”****Job description:**

The Chair in Chemical Technology and Catalysis (www.itcp.kit.edu/grunwaldt) focuses on the design, testing and in-depth characterization 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 exhaust gas group is engaged in understanding and development of conventional and novel exhaust gas catalysts. It is embedded in the “Exhaust Gas Center Karlsruhe”, which is equipped with modern test benches and a broad variety of state-of-the-art characterization techniques. It is in particular utilizing cutting-edge synchrotron based techniques, which allow the characterization under realistic operation conditions for investigating structure-catalytic activity relationships.

The PhD work will be part of a research project focussing on the development of next generation exhaust gas catalysts. For this purpose, systematic preparation and testing will be combined with *in situ/operando* characterization (e.g. *operando* X-ray absorption/emission spectroscopy, environmental transmission electron microscopy). The study will be closely coordinated with external project partners from industry and academia.

You will therefore work in 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 large-scale facilities (e.g. DESY, ESRF, SOLEIL, SLS, ANKA). Moreover, a research stay at another university is planned, and you will promote your research and represent the group at international conferences.

Qualification:

The ideal candidate should hold a Master’s Degree (or equivalent) in Physics, Chemistry, Chemical Engineering or Materials Science. Previous experience in one (or more) of the following topics would be beneficial: catalysis, solid-state chemistry, *in situ/operando* spectroscopy or physical chemistry. Strong motivation for research and good experimental skills are highly desirable. 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.

Institute: Institute of Chemical Technology and Polymer Chemistry (ITCP)

Contract duration: limited

Starting date: as soon as possible

Application up to: 01.08.2016

Contact person in line-management: Prof. Jan-Dierk Grunwaldt, Tel : (+49) 721/608-42120, email: 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
- Highschool, Bachelor and Master Certificates
- 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:** 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.

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