

Open PhD position at KIT – Institute for Applied Materials

The Institute for Applied Materials – Materials- and Biomechanics (IAM-WBM) at the Karlsruhe Institute of Technology (KIT) strives for a fundamental understanding, prediction and optimization of mechanisms responsible for the degradation of advanced functional material systems. Our material portfolio comprises, among others, materials required for the energy transition, i.e. for energy conversion and storage.

We are offering a PhD position in material science. The focus of the DFG-funded project is the identification and application of toughness-increasing mechanisms in functional material systems (e.g. hard coatings). The successful candidate will be tasked to measure and tailor the toughness of model materials and applied hard coatings using *in situ* micromechanics in order to establish a quantitative, mechanism-based understanding of toughening mechanisms. The project is part of an international cooperation between the KIT, the Max-Planck-Institut für Eisenforschung in Düsseldorf (Prof. Gerhard Dehm), the Research Center Jülich (Dr. Steffen Brinckmann) and the University of Leoben in Austria (Dr. Matthias Bartosik).

Tasks carried out at the KIT include:

- Experimental micromechanics comprising of sample preparation via femto-second laser ablation and focused ion beam microscopy (FIB) and *in situ* testing of micro fracture samples in the scanning electron microscope (SEM)
- Data analysis and interpretation
- Publication of the results in the form of journal publications and scientific talks

Candidates must hold a master degree with focus on physics, materials science or mechanics. A basic understanding of the physics of electron microscopy as well as mechanics is required. Applications from candidates having prior experience in SEM operation are particularly encouraged.

Besides a state-of-the-art micromechanics laboratory at the IAM / KIT and an inclusive, caring as well as supportive atmosphere, we can offer up to a 75% EG 13 salary for three years. We warmly welcome applicants of different cultures, ethnicities and beliefs – indeed this very diversity is vital to our success, it is fundamental to our values and enriches life at the institute.

The call for applications is open until filled.

For more information do not hesitate to contact Prof. Christoph Kirchlechner, christoph.kirchlechner@kit.edu