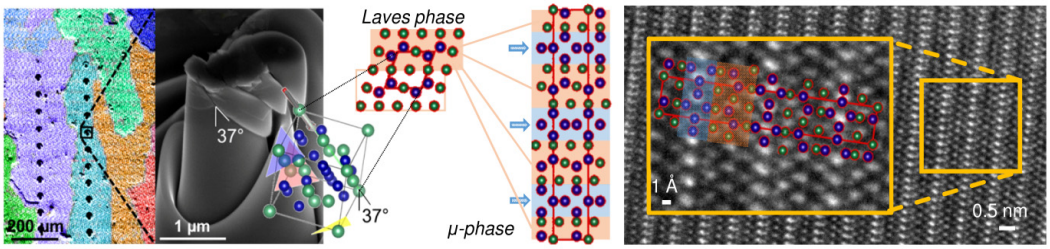
Doctoral researcher/ PhD candidate

...or start with a **master thesis!**

Institute of Physical Metallurgy and Metal Physics (IMM)

Deformation of intermetallic Fe-Mo phases

Nanomechanical testing ⇔ Sub-cells in crystals ⇔ Atomic resolution imaging



About us:

Research at the Institute of Metallurgy and Metal Physics at RWTH Aachen University focuses on fundamental and applied materials physics. Materials are characterized, modelled and optimized in interdisciplinary collaborations at national and international level and using state-of-the-art equipment for experiments and simulations.

We are looking for:

An enthusiastic candidate with a background in materials science and engineering who

- holds (or will soon hold) a masters degree in Materials Science or Physics
- is interested in working on fundamental questions of plastic deformation to ultimately support materials design for high temperature applications
- is keen to learn and apply different microscopy (up to atomic resolution) and nanomechanical characterization techniques
- has a very good command of English (and preferably also German) and enjoys working in a team

Your responsibilities:

The goal of this project is to unravel the atomic scale deformation mechanisms of two closely related crystalline phases, the µ- and λ-(Laves) phase in the Fe-Mo system. These stand in as model materials which will allow us to gain a much better understanding of the higher alloyed variants that frequently occur in superalloys and steels. In order to successfully complete this project you will be introduced to several microscopy techniques including scanning and transmission electron microscopy, the diffraction techniques applied in both microscopes and nanomechanical testing at the nano- to microscale. The latter will be used to introduce dislocations for microscopy and also to measure the relevant stresses required for deformation in a quantitative manner. You will be expected to learn how to obtain and interpret results from these methods by yourself and in this, you will be supported by the IMM team and several post-doctoral researchers who are experts in these methods. In addition to your research, you will gain valuable skills also in teaching and project management.

We offer:

The position is offered on a temporary contract for a fixed term of initially 12 months (full-time, extendable to a maximum of 48 months to study towards a Dr.-Ing./Dr.rer.nat.) and is to be filled as soon as possible. The salary is based on the German public service salary scale (TV-L EG13). The RWTH Aachen University is certified as a "Family-Friendly University". We particularly welcome and encourage applications from women, disabled persons and ethnic minority groups, recognizing that they are underrepresented across RWTH Aachen University. The principles of fair and open competition apply and appointments will be made on merit.

Your contact person:

For further information or application, please contact Prof. Dr. Sandra Korte-Kerzel (korte-kerzel@imm.rwth-aachen.de) or Dr. Talal Al-Samman (al-samman@imm.rwth-aachen.de)

Applications accompanied by supporting documentation in German or English (Cover letter, CV and any supplementary information) should be submitted **as soon as possible.**

Institute of Physical Metallurgy and Metal Physics

Rheinisch-Westfälische Technische Hochschule Aachen

8 January 2019

Institut für Metallkunde und Metallphysik

Direktorin:
Prof. Dr. Sandra Korte-Kerzel

Postanschrift/Mail:
RWTH Aachen
D - 52056 Aachen

Gebäude/Deliveries:
Kopernikusstraße 14
D - 52074 Aachen

Tel.: +49 (0)241 80-2 68 55
Fax: +49 (0)241 80-2 23 01

imm@imm.rwth-aachen.de
www.imm.rwth-aachen.de