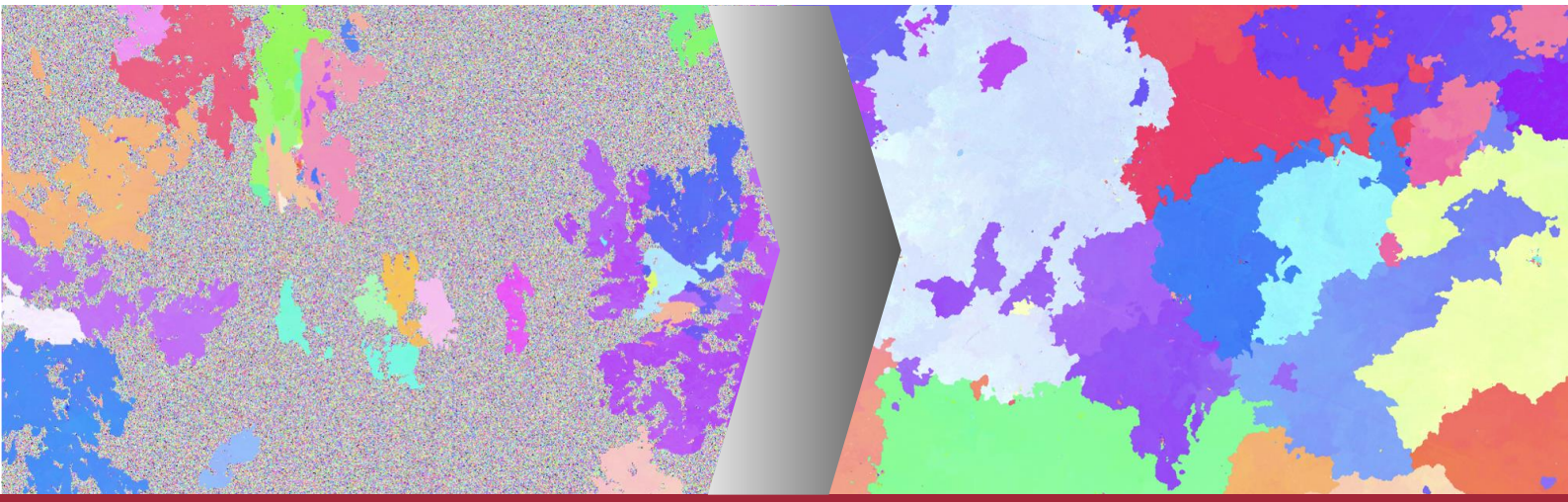
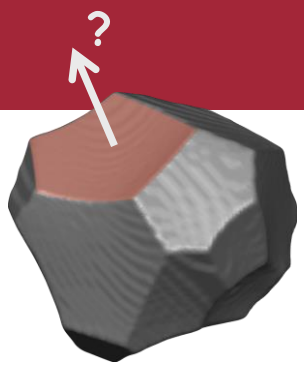


Open PhD position (m/f/d)



Probing the mechanisms of grain growth in nanomaterials

The Institute of Functional Nanosystems at Ulm University is currently looking to hire a PhD student to join our multinational and interdisciplinary research team! The position and related expenditures will be funded through DFG project KR 1658/10-1, a joint effort by the research groups of Prof. Carl Krill (Ulm University) and Prof. Astrid Pundt (Karlsruhe Institute of Technology) to probe the phenomenon of abnormal grain growth in nanomaterials.

For more than three decades, nanocrystalline materials have been a hot topic of research because they exhibit many properties not observed in conventional polycrystals. Unfortunately, the widespread application of nanomaterials is limited by their lack of thermal stability—indeed, the crystallites in nanomaterials are often observed to coarsen even at room temperature! The goal of this PhD project is to identify and elucidate the mechanism(s) underlying such grain growth, particularly when it proceeds in an abnormal manner in nanocrystalline alloys.

Your profile:

- Master's degree in Physics, Materials Science, Engineering or a related discipline, earned at an accredited university (with above-average GPA)
- Good knowledge of materials phenomena such as diffusion and coarsening
- Hands-on mentality and a knack for solving challenging problems
- Practical experience working with vacuum systems and/or various methods for materials characterization would be a plus

SCAN ME

Your responsibilities:

- Design and conduct scientific experiments as part of DFG project KR 1658/10-1
- Synthesize and characterize nanocrystalline materials using techniques like sputtering, thermal evaporation, x-ray diffraction, SEM/FIB and TEM
- Plan and coordinate APT measurements with our partners at KIT
- Develop models and run computer simulations of microstructural evolution in nanomaterials
- Publish your research results in scientific journals and present them at international conferences

Interested in applying? Please email a short letter describing your research interests and a detailed CV as well as a copy of your academic transcripts to Dr. Jules Dake (jules.dake@uni-ulm.de).