The Erich Schmid Institute of Materials Science of the Austrian Academy of Sciences (ÖAW), Austria's leading non-university research and science institution, is offering a Position as

Ph. D. Researcher (F*M)

(30 hours per week / full-time)

in the Austrian Science Fund project "**Design of oxide precipitates in nanostructured materials**" for a fixed term appointment of 3 years.

Nanostructured materials synthesized by high-pressure torsion (HPT) exhibit exceptional properties such as extremely high strength. It is well recognized that impurity level (i.e., oxygen, etc.) affects the grain sizes and strength of nanocrystalline accordingly. However, the exact role of the oxygen atom in regulating the atomic and electronic structure, property, and thermal stability of nanocrystalline materials remains unclear. Here, the project comes up with an idea to intentionally incorporate a certain oxygen level in a controlled manner. Through the severe plastic deformation, this project intends to design the nanostructured materials by controlling the oxide precipitates in nanocrystalline and ultimately achieve super strength and good ductility synergy. The project will focus on oxygen-impurity-induced atomic and electronic structure changes in nanostructures synthesized by HPT. We aim to understand the atomic-scale mechanism of the oxygen effect and its correlation with the macroscopic properties in nanocrystalline.

Your tasks

The successful candidate will be part of a team whose research activities focus on the microstructure and atomic structure characterization of oxygen-contained nanostructured materials using advanced TEM techniques (Cs-corrected HRTEM/STEM/EELS), APT analysis, and hardness measurement, etc. The candidate will make an effort to establish the structure-mechanical property relation in oxygen-mediated nanocrystalline and, from the atomic level, understand the oxygen atom role. You will work in a dedicated team and have the opportunity to enhance your scientific career, including participation in national and international conferences.

Your profile

- Completed Master's study in Materials Sciences, Physics, or equivalent
- Background in materials science, solid-state physics, or related subjects
- We are seeking an independent, self-motivated, and team-oriented candidate
- Excellent communication skills in spoken and written English are mandatory

Our offer

We offer an international, ambitious environment for basic research-oriented candidates who want to perform cutting-edge research with access to advanced characterization facilities.

The appointment begins at the earliest possible date. Gross salary will be based on the salary scale of the Austrian Science Fund (FWF).

Please email your application, including a motivation letter and a CV with a complete publication list, to: zaoli.zhang@oeaw.ac.at no later than June 30, 2023.

The evaluation of candidates will begin immediately and continue until the position is filled. Please note that only complete applications will be considered.

The Austrian Academy of Sciences (ÖAW) pursues a non-discriminatory employment policy and values equal opportunities, as well as diversity. The ÖAW lays special emphasis on increasing the number of women in senior and in academic positions. Given equal qualifications, preference will be given to female applicants.

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