Open positions

Hybrid Materials Interfaces Group HMI BCCMS

There are two open positions in the Hybrid Materials Interfaces Group at the Bremen Center for Computational Materials Science of the University of Bremen for

PhD or Postdoctoral researchers

at the German TV-L 13 payscale (75 % for PhD, 100% for Postdoc)

The appointments are limited to **three years** and are available immediately.

Position 1) (PhD or Postdoc) The successful candidate will perform atomistic and coarse-grained simulations to study the dynamic interactions of silica nanoparticles at surfactant-laden oil/water interfaces in the context of particle-stabilised emulsion systems (Pickering emulsions). Experimental observables such as contact angles, interfacial energies, adsorption energies or electron density profiles will be estimated through all-atom simulations. A dissipative coarse-grain model will be then parametrized and used to predict the interfacial microstructure and rheology of the nanoparticle assemblies.

Position 2) (PhD only) The successful candidate will become part of a team of researchers investigating the compositional phase space of metallurgical slag models for a rational design of processes of refractory metal recovery through smelting and recrystallization by means of combined experiments and simulations. The work will include high-throughput DFT calculations of thermodynamic properties of mixed oxides systems containing refractory metals, the use of evolutionary algorithms for the unbiased prediction of metastable phases and classical force-field simulation of molten oxide phases.

Requirements

Applicants are expected to possess outstanding academic records and a solid background in physics, chemistry, materials science or related disciplines. The knowledge of programming and scripting languages as well as excellent written and spoken English skills are essential. Existing expertise with molecular dynamics simulation or electronic-structure calculation methods represents a strong advantage.

Further information

As the University of Bremen intends to increase the proportion of female employees in science, women are particularly encouraged to apply. In case of equal personal aptitudes and qualification priority will be given to handicapped applicants. The University of Bremen expressly invites persons with migration background to apply.

The employment is fixed-term and governed by the Act of Academic Fixed-Term Contract (*Wissenschaftszeitvertragsgesetz – WissZeitVG*). Therefore, candidates may only be considered for appointment if they still have the respective qualification periods available in accordance with § 2 (1) WissZeitVG.

Application procedure

Please send your electronic application with the reference **HMI-2021-10** as **one single pdf** document including (1) a motivation letter, in which you make clear for which position you are applying and why your study background fits to the requirements; (2) your curriculum vitae including a list of publications; (3) full transcripts of your academic records (4) the names of two reference persons

to

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