Research Assistant/Associate (f/m/d) – Postdoc

Interfacial diffusion dynamics of water and ligands on iron oxide nanoparticles via quasielastic neutron scattering

Lehrstuhl und Institut für Kristallographie

Job-ID: V000002186
Location: Aachen
Contract duration: Fixed-term employment
Job evaluation: E 13 TV-L
Start date: as soon as possible
Working hours: Full-time
Published: 07.02.2022
Application time: 15.03.2022
Job type: Academic staff

Our Profile

The Institute of Crystallography at RWTH Aachen University is placed in the interdisciplinary field of physics, chemistry, geo- and material sciences. Our research aims at a better understanding of the structure and dynamics of nanoscale solid-liquid and solid-gas interfaces.

Project description. Interfaces between iron oxide nanoparticles and water play a crucial role, for instance, in geosciences, nanotechnology, and industrial catalysis. For nanostructured interfaces, our knowledge of interfacial physicochemical properties is still very limited, yet highly relevant to optimize applications. In this project, we aim to shed light onto the dynamics of water and organic molecules at surfaces of magnetic iron oxide nanoparticles. We wish to establish fundamental understanding of diffusion dynamics at nanostructured interfaces. For accessing these interesting dynamics, we carry out quasielastic neutron scattering (QENS) experiments at international large scale research facilities.

Application. Applications must include
- Letter motivating the application and background for this position
- CV
- PhD certificate, study diploma, transcripts of records (BSc and MSc)

Please submit your application in English or German as one PDF file electronically.

Your Profile

- PhD in physics, chemistry or related field.
- Sound experience in neutron scattering, ideally in QENS
- Profound experience in data fitting and scientific programming (e.g. Igor Pro, Python)
- Experience in (nanoparticle) synthesis and physicochemical characterization (e.g. TGA, CHN, DLS)
- Knowledge about magnetismus is welcome.
- High motivation for further training, independent and goal-oriented way of working.
- Good communication skills in English and possibly German.
Your Duties and Responsibilities

- Data analysis and interpretation of quasielastic neutron scattering data (e.g. in Igor Pro)
- QENS experiments at neutron research reactors or spallation sources (national and international)
- Synthesis of iron oxide nanoparticles, sample preparation for QENS experiments and characterization involving e.g. vapor sorption, XRD, TGA, CHN, IR.
- Publication of results in peer-reviewed scientific journals and presentation at conferences.

What We Offer

The successful candidate will be employed under a regular employment contract. The position is to be filled at the earliest possible date and offered for a fixed term of two years. The fixed-term employment is possible as it constitutes one of the fixed-term options of the Wissenschaftszeitvertragsgesetz (German Act on Fixed-term Scientific Contracts). This is a full-time position. The salary is based on the German public service salary scale (TV-L). The position corresponds to a pay grade of E 13 TV-L.

About us

RWTH is a certified family-friendly University. We support our employees in maintaining a good work-life balance with a wide range of health, advising, and prevention services, for example university sports. We also offer a comprehensive continuing education scheme and a public transportation ticket available at a significantly reduced price. RWTH is an equal opportunities employer. We therefore welcome and encourage applications from all suitably qualified candidates, particularly from groups that are underrepresented at the University. All qualified applicants will receive consideration for employment and will not be discriminated against on the basis of national or ethnic origin, sex, sexual orientation, gender identity, religion, disability or age. RWTH is strongly committed to encouraging women in their careers. Female applicants are given preference if they are equally suitable, competent, and professionally qualified, unless a fellow candidate is favored for a specific reason. As RWTH is committed to equality of opportunity, we ask you not to include a photo in your application. You can find information on the personal data we collect from applicants in accordance with Articles 13 and 14 of the European Union's General Data Protection Regulation (GDPR) at http://www.rwth-aachen.de/dsgvo-information-bewerbung.

Contact & Application

Contact regarding the application

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