

**Jobnumber: 33359**  
**Institutskennziffer: 542110**



## **Research Assistant/Associate (f/m/d) PhD student**

**Institut für Kristallographie**

### **Our Profile**

The Institute of Crystallography at RWTH Aachen University is placed in the interdisciplinary field of chemistry, physics, geosciences and material sciences. Our research aims at a better understanding of the structure and dynamics of nanoscale solid-liquid and solid-gas interfaces, because of their importance in catalysts, energy materials, and nanomaterials. To achieve these goals, we employ and develop modern X-ray and neutron scattering techniques, both in the laboratory and at large scale research facilities.

Project: Interfacial dynamics of molecular diffusion on iron oxide nanoparticles via neutron scattering

Interfaces between iron oxide nanoparticles and water play a crucial role in photocatalysis, biomedicine, 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 in order 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.

### **Your Profile**

- University degree (M.Sc. or equivalent) in physics, chemistry, materials science, geoscience or related field.
- Experience in at least two of the following: (nanoparticle) synthesis, X-ray/neutron scattering, data analysis/scientific programming (Origin, Igor Pro, Python).
- High motivation for further training, independent and goal-oriented way of working.
- Good communication skills in English and possibly German.
- You are also interested in further academic qualifications (doctorate).

### **Ihre Aufgaben:**

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

### **What We Offer**

The position is limited to 3 years and to be filled at the earliest possible date.

This is a part-time position (75% of the standard weekly hours for full-time employees).

The successful candidate has the opportunity to pursue a doctoral degree.

The salary corresponds to pay grade EG 13 of the German public service salary scale (TV-L).

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**

If you have any questions, please contact

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Please send your application by July 31, 2021 to

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**RWTH Aachen University**

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Applicants are invited to submit their applications via email to [zobel@ifk.rwth-aachen.de](mailto:zobel@ifk.rwth-aachen.de). For data protection reasons, however, we recommend sending applications via mail.