

RWTH > Home > About RWTH > Working at RWTH > RWTH Jobs Portal > **Research Assistant/Associate (f/m/d)**

Research Assistant/Associate (f/m/d)

PhD position (f/m/d) Interfacial interactions of metal oxide nanoparticles with solvents and ligands

Contact

Name

Mirijam Zobel

Telephone

02418096916

E-Mail

Send Email [<mailto:zobel@ifk.rwth-aachen.de>]

Contact

Name

Marla Stuart

Telephone

02418096900

E-Mail

Send Email [<mailto:sekretariat@ifk.rwth-aachen.de>]

Institution

Lehrstuhl und Institut für Kristallographie

Our Profile

The Institute of Crystallography at RWTH Aachen University is placed in the interdisciplinary field of chemistry, physics, geo- 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 catalysis, for energy materials, geoscience and nanomaterials.

Understanding interfacial properties of nanoparticle-solvent interfaces is crucial to optimize applications of nanostructured materials in the field of (photo-) catalysis, nanotechnology, or also biomedicine. The structure and dynamics of solvent and organic ligand molecules at surfaces of metal oxide nanoparticles are not identical to the respective properties in bulk liquids. Our general understanding of these interfacial properties is still limited. How do solvent layers build up at nanoparticle surfaces in dispersion and in humid atmospheres? How does ligand coverage impact solvent layering? How do solvent layers in turn impact the diffusional mobility of ligands on the surface? How do solvent mixtures in the synchrotron beam affect redox chemistry in the nanoparticles?

Your Profile

- University degree (M.Sc. or equivalent) in chemistry, materials science, geoscience, physics or related field.
- Experience in at least two of the following: (nanoparticle) synthesis, X-ray / neutron scattering, physicochemical characterization (TGA, DLS, IR etc.), 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 interested in further academic qualifications (doctorate).

All applications must include

- Letter motivating the application and background for this position
- CV
- Diploma and transcripts of records (BSc and MSc)

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

Your Duties and Responsibilities

As PhD student you achieve fascinating insight into interfaces of metal oxide nanoparticles with their surroundings with the following tasks:

- Synthesis of non-magnetic metal oxide nanoparticles (TiO₂, ZnO, etc.)
- Characterization techniques of particle and interface properties, e.g. TGA, TEM, IR or DLS.
- X-ray and / or neutron scattering experiments at synchrotron and / or neutron radiation facilities (national and international).
- Data analysis and interpretation, e.g. with Igor Pro, Python, Origin.
- 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 three 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 part-time contract position.

The standard weekly hours will be 26,55 hours.

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

The salary is based on the German public service salary scale (TV-L).

The position corresponds to a pay grade of EG 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. Employees who are covered by collective bargaining agreements and civil servants have access to an extensive range of further training courses and the opportunity to purchase a job ticket.

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> [<http://www.rwth-aachen.de/dsgvo-information-bewerbung>].

Application

Number:	V000004895
Application deadline:	15/04/2023
Mailing Address:	RWTH Aachen University Lehrstuhl und Institut für Kristallographie Prof.Dr. Mirijam Zobel Jägerstr. 17-19 52066 Aachen
Email:	Send Email[mailto:zobel@ifk.rwth-aachen.de] Applicants are invited to submit their applications via email. For data protection reasons, however, we recommend sending applications via mail.