The Ruhr-Universität Bochum is one of the leading research universities. The university draws its strength from both the diversity and the proximity of scientific and engineering disciplines on a single, coherent campus. This highly dynamic setting enables students and researchers to work across traditional boundaries of academic subjects and faculties.

Oxide nanoparticles have attracted increasing interest in catalyzing heterogeneous solid-liquid reactions in the applications of lithium ion batteries of water splitting. However, the fundamental insights into the interplay of reactivity, structure and composition of oxides are far less advanced. This knowledge gap prevents a rational design and application of metal oxides as heterogeneous oxidation catalysts in new sustainable liquid-phase processes. In the proposed project, the successful candidate (m/f/d) will synthesis oxide nanoparticles for lithium ion batteries and characterize these nanoparticles by a combination of state-of-the-art microscopy such as atom probe tomography and aberration-corrected transmission electron microscopy. The three-dimensional surface and internal structure and chemistry of catalyst nanoparticles will be revealed, with single atom sensitivity, before and after service. This atomic-scale information will provide a rational guide to nano-engineering catalysts in order to develop cost-effective and high efficiency sustainable energy sources.

The successful candidate (m/f/d) will be working in the new research center for interface-dominated high-performance materials (ZGH) at Ruhr University Bochum, which houses a large and comprehensive suite of equipment dedicated to nanostructure analysis; the center is among the best facilities of its kind in the world. He (m/f/d) will have access to world-class set of laboratories (e.g. glove boxes) and more than 10 major microscopy platforms, including the state-of-the-art atom probe, aberration-corrected TEM and focused ion beam etc.

The load of teaching will be calculated according to §3 of Lehrverpflichtungsverordnung (state of North Rhine-Westphalia).

Travel expenses for interviews cannot be refunded.

At Ruhr-Universität Bochum, we wish to promote careers of women in areas in which they have been underrepresented, and we would therefore like to encourage female candidates to send us their applications. Applications by suitable candidates with severe disabilities and other applicants with equal legal status are likewise most welcome.

The candidate (m/f/d) must have:

- an excellent master degree in materials science, inorganic chemistry, nanoparticle
synthesis, or electrochemistry
- experiences in synthesis of oxide nanoparticles for lithium ion batteries or oxide nanoparticles (e.g. perovskites/spines) for water electrolysis
- can independently conduct potentiostat measurements including cyclic voltammetry, electrochemical impedance spectroscopy, chronopotentiometry, Chronoamperometry etc
- a high level of spoken and written English
- can work both independently and as part of an interdisciplinary team
- ability to plan and organize the PhD project effectively
- can work in multicultural environment
- self-motivated and eager to learn

The candidate (m/f/d) may have:
- experiences in X-ray photoelectron spectroscopy data

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Kontakt

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Bitte beziehen Sie sich in Ihrer Bewerbung auf https://www.stellenwerk-bochum.de/