

331. Job Advertisement: -One vacant position for a full-time Project Researcher (m/f/d) at the Chair of Physical Chemistry in the Department of General, Analytical and Physical Chemistry - **Reference ID: 2408WPE**

The Montanuniversität Leoben is a modern teaching and research institution and offers excellent conditions for careers in scientific and non-scientific fields.

One vacant position for a full-time Project Researcher (m/f/d) at the Chair of Physical Chemistry in the Department of General, Analytical and Physical Chemistry will be advertised for a 3-year fixed-term employment contract starting on 01.01.2025. Salary Group B1 according to the Uni-KV, monthly minimum salary excl. Szlg.: € 3.578,80 for 40 hours per week (14 x per year), actual classification is according to previous relevant experience.

The position is embedded within the field of "Innovative manufacturing and fundamental electrochemical characterization of ceramic high-temperature fuel cells and electrolysis cells for energy-efficient and reliable energy conversion and storage." The focus of the scientific work is the development of innovative manufacturing methods and novel materials for a paradigm shift in cell design, which will contribute to increasing power density, reliability, and lifespan, reducing manufacturing costs, and achieving independence from critical raw materials.

Requirements

- The candidate is expected to hold a Master's degree from a university in natural or technical sciences.
- Very good command of written and spoken English.
- Willingness to pursue a dissertation.
- Ability to perform independent scientific research.
- Very good knowledge of materials science/chemistry and electrochemical energy conversion and storage.
- Ability to work in a team and good communication skills.
- Willingness to publish and willingness to undertake further training (possibly abroad).

Advantageous additional qualifications

- Experience in synthesis and materials research and development of novel electrodes and electrolytes for solid oxide fuel cells and electrolysis cells.
- Experience in electrochemical characterization at cell level (e.g. electrochemical impedance spectroscopy, current density-voltage curves).
- Experience in the characterization of ceramic materials with regard to structural and material properties (e.g. crystal structure, fundamental mass and charge transport properties).
- Experience in ceramic manufacturing (e.g. tape casting, additive manufacturing or lithography-based 3D printing, spark plasma sintering).
- Willingness to co-supervise scientific work of students (e.g. supervision of Bachelor's or Master's students).
- Independent working style, initiative, technical aptitude, enjoyment of interdisciplinary work, teamwork and organizational skills.
- Command of written and spoken German.

Focus of scientific activity

- Synthesis of novel functional ceramics for solid oxide fuel cells and electrolysis cells (e.g. using sol-gel methods), structural characterization and investigation of fundamental material properties.
- Preparation of porous electrodes, diffusion barriers and current collectors (e.g. using screen printing, sintering), production of (multilayer) ceramic electrolytes using tape casting and 3D printing stereolithographic processes.
- Measurements of the ionic conductivity of the newly developed electrolytes and electrochemical cell tests on half and full cells (electrochemical impedance spectroscopy, current density-voltage characteristics).
- Microstructure and interface characterization including post-test analyses (e.g. XRD, SEM).

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End of Application: 27.10.2024

The Montanuniversitaet Leoben intends to increase the number of women on its faculty and therefore specifically invites applications by women. Among equally qualified applicants, women will receive preferential consideration.

For the application please use the online form on the homepage: <http://www.unileoben.ac.at/jobs>

The Rector:

Univ.-Prof. Dipl.-Ing. Dr.mont. Dr.-Ing. E.h. Peter Moser

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