Researcher in Solid-State Hydrogen Storage

Job description

Position as Researcher available at the Department of Technology Systems.

The position is for a period of three years.

Preferred starting date: 01.12.2020, but no later than 01.03.2021.

More about the position

We seek a research enthusiast with a PhD, who presents appropriate work performance and interest to investigate, construct and optimize a photoelectrochemical device for hydrogen production and storage.

The position is associated with the project "HERA (Hydrogen Energy Rechargeable Architectures): Coupling of On-demand Hydrogen Generation and Storage" funded by the EEA and Norway Grants within the POLNOR/Applied Research program. The HERA project is owned and coordinated by the Centre of New Technologies at the University of Warsaw (Poland). The University of Oslo (UiO) and InPhoCat (the industrial collaborator) are project partners.

HERA will explore the technological application of the photoelectrochemical hydrogen production and storage by integrating lab-scale studies with system-oriented experimental examinations. The project’s main goal is to design a kinetically enhanced photoelectrochemical device that will enable the absorption of the produced “solar hydrogen” by a cathode.

The most important task of this Researcher position is the synthesis and optimization of novel hydrogen storage alloys/intermetallic compounds, which will be used as a cathode material. The research will also involve optimization and broad characterization of the material structural and functional properties in view of their photoelectrochemical application. This will require extensive, accurate, and efficient hands-on work.

The main activity will be carried out within the Section for Energy Systems at the Department of Technology Systems (ITS); however, a part of the research will also be conducted aboard. The Section for Energy Systems focuses on application-driven research, where we address issues relevant to enabling sustainable solutions for renewable energy system technologies.

Qualification requirements

The Faculty of Mathematics and Natural Sciences has a strategic ambition to be among Europe’s leading communities for research, education and innovation. Candidates for these fellowships will be selected in accordance with this and expected to be in the upper segment of their class with respect to academic credentials.

The following qualifications will count in the assessment of the applicants:

- Applicants must hold a PhD or a degree equivalent to a Norwegian doctoral degree, preferably in materials science, solid-state physics, electrochemistry, chemistry or crystallography
- Solid scientific background in materials science, and acquaintance with the material synthesis and structural characterization, in particular by X-ray/neutron diffraction methods
- Experience with synthesis techniques such as powder metallurgy (e.g. arc melting, hot pressing, spark plasma sintering) is an advantage
- Documented research experience with hydrogen storage materials and their structural /functional characterization is an advantage
- Familiarity with techniques such as Pressure-Composition-Temperature (PCT) method, Transmission Electron Microscopy (TEM), X-ray Photoelectron Spectroscopy (XPS) is an advantage
- Fluent oral and written communication skills in English is a must
- Good communication and presentation skills are desired
- The Researcher is expected to travel abroad occasionally, to participate in the material characterization at collaborating groups’ laboratories
- Applicants must have defended their doctoral thesis before their starting date.

Personal skills

- High interest in the research topic
- Quick learning
- Pro-activeness
- Interdisciplinary mind-set
- Collaborative and open attitude
- Ability to work independently in a well-organized, attention-focused and timely manner
- Ability to express yourself, orally and written, in a clear and concise way
We offer

- Salary NOK minimum 523 200 - 605 500 per year depending on qualifications in position as Researcher with PhD (position code 1109)
- Attractive welfare benefits and a generous pension agreement
- Professionally stimulating working environment
- Vibrant international academic environment
- Oslo’s family-friendly surroundings with their rich opportunities for culture and outdoor activities

How to apply

The application must include:

- Cover letter (statement of motivation, summarizing scientific work performance and research interest relevant for this position)
- CV (summarizing education, positions, any other relevant experience and qualifying activity)
- Copies of educational certificates and academic transcript of records
- A complete list of publications and up to 5 academic works that the applicant wishes to be considered by the evaluation committee
- Names and contact details of 2-3 references (name, relation to candidate, e-mail and telephone number)

The application with attachments must be delivered in our electronic recruiting system, please follow the link “apply for this job”. Foreign applicants are advised to attach an explanation of their University's grading system. Please note that all documents should be in English.

In assessing the applications, special emphasis will be placed on the documented, academic qualifications as well as the candidates’ motivation and personal suitability. Interviews with the best-qualified candidates will be arranged.

It is expected that the successful candidate will be able to complete the project in the course of the period of employment.

Formal regulations

According to the Norwegian Freedom and Information Act (Offentleglova) information about the applicant may be included in the public applicant list, also in cases where the applicant has requested non-disclosure.

The University of Oslo has an agreement for all employees, aiming to secure rights to research results a.o.

The University of Oslo aims to achieve a balanced gender composition in the workforce and to recruit people with ethnic minority backgrounds.

Contact information

For question and further information about the project please contact: Dr. Matylda N. Guzik, Senior Lecturer at the Department of Technology Systems, phone: +47 228 42 224 , e-mail: m.n.guzik@its.uio.no

For technical questions regarding the recruitment system, please contact HR Adviser Therese Ringvold, phone: +47 228 51 606, e-mail: therese.ringvold@mn.uio.no

About the University of Oslo

The University of Oslo is Norway’s oldest and highest rated institution of research and education with 28 000 students and 7000 employees. Its broad range of academic disciplines and internationally esteemed research communities make UiO an important contributor to society.

The Department of Technology Systems (ITS) is a newly established department at the Faculty of Mathematics and Natural Sciences at the University of Oslo. ITS has taken over the activities at UNIK from January 2017. The Institute is located in the Kjeller Research Park, which is one of the largest research and development centers in Norway. ITS collaborates with the research institutes at Kjeller, and with industry, while it is also tightly integrated with complementary activities at UiO in Oslo. The department has two sections: section for energy systems and section for autonomous systems and sensor technologies. An important goal of ITS is to provide wider opportunities at UiO within applied technologies.

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