



# Researcher position in Materials chemistry of battery (energy storage) materials/systems

## Job description

A four years position as researcher within the field of materials chemistry of battery (energy storage) materials and battery system development is available at the Department of Chemistry/Centre for Materials Science and Nanotechnology (SMN), research group NAFUMA - nanostructures and functional materials. Starting date will be autumn 2019.

## More about the position

We are searching for a creative, skilled and ambitious researcher for our activities on battery materials and applications. The researcher will work in a team of some 6-8 PhD and post doctor fellows /researchers plus master students. External collaboration with other academic research groups and industry actors will take place, e.g., via the FME center MoZEEs. This project is funded by Equinor ASA through its strategic alliance with the University of Oslo, with the ambition to strengthen academic research in selected fields and to establish competence exchange with Equinor as an industry partner.

Our research activities are directed towards understanding phenomena connected with electrochemical cycling of cathode and anode materials for Li-(and other alkali and alkaline earth) based batteries, in particular targeted towards large scale applications in the transportation sector and grid storage systems. Major emphasis is put on exploring new materials, for cathode, anode and solid electrolytes, including improvement of electrochemical activity by protective coatings of electroactive particles.

We have well-equipped laboratories with complete in-house electrochemical characterization of battery materials and component testing. Battery work is also supported with operando studies of structural and interfacial phenomena within cell using in-house X-ray and mass spectrometry facilities. The operando studies extend to utilization of synchrotron based tools; X-ray and neutron diffraction and total scattering, XAS spectroscopy, and tomography. Experiments are tightly interfaced with DFT/MD modelling for electrode and electrolyte materials. Methods like NMR, IR/Raman spectroscopy, XPS, SEM and TEM are frequently used, and available in the group or at UiO. Our facilities for materials synthesis are excellent, for nanomaterials and powders, which also extend to thin film batteries design and electrode coatings by Atomic layer Deposition. We foresee to develop battery prototypes at our UiO facility.

The researcher to be hired is expected to hold excellence in fields of high relevance for our research focus on materials and phenomena in lithium and beyond lithium-ion battery technologies. The researcher will work under supervision of permanent scientific staff and report to the head of section. The researcher will interact closely with all other members of the battery group. Hence, personal suitability will be given major weight in the selection process.

## Qualification requirements

The Faculty of Mathematics and Natural Sciences has a strategic ambition of being a leading research faculty. 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 candidate must hold a degree equivalent to a Norwegian PhD degree within chemistry or a relevant related field, specialization within inorganic chemistry, nanochemistry, materials chemistry, electrochemistry or materials science. Candidates for the position are expected to be in the upper segment of their class with respect to academic credentials.
- The following requirements on qualifications are given major weight in the evaluation of the candidates. In the cover letter (or in the CV), the applicant must specifically describe his/her expertise in relevant fields, like e.g.
  - Inorganic materials synthesis
  - Electrochemical characterization of battery materials
  - Operando studies of materials
  - Analysis of local and average crystal structure of materials
  - DFT modelling of inorganic materials and their stability and properties
  - Batteries at the system level

Due to the ambition for close contact with Norwegian battery industry good knowledge of Norwegian or one of the Scandinavian languages will be evaluated positively.

## We offer

- salary NOK 523 200 - 573 100 per annum depending on qualifications in position as Researcher (position code 1109)
- a professionally stimulating working environment
- attractive welfare benefits and a generous pension agreement, in addition to Oslo's family-friendly environment with its rich opportunities for culture and outdoor activities
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- 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 and research interest)
- CV (summarizing education, positions, pedagogical experience, administrative experience and other qualifying activity)
- Copies of educational certificates, academic transcript of records and letters of recommendation
- 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 (or a Scandinavian language).

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 etc.

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 further information please contact: Professor Helmer Fjellvåg, phone: +47 22855564, e-mail: [helmer.fjellvag@kjemi.uio.no](mailto:helmer.fjellvag@kjemi.uio.no)

For questions regarding the recruitment system please contact: HR-Adviser Ørjan Pretorius, e-mail: [orjan.pretorius@mn.uio.no](mailto:orjan.pretorius@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.

**Centre for Materials Science and Nanotechnology (SMN)** is an interdisciplinary focus field for material and energy research at the University of Oslo. SMN has focused on basic research in renewable energy and environmentally friendly use of fossil energy sources. The center consists of research groups from the Department of Physics (Fi) and Chemistry (Ki), has about 100 employees from around the world and manages more than 80 projects funded by the EU, the RCN and others.

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