Postdoctoral Research Fellow in chemistry/material science

Job description

Postdoctoral Research Fellow in chemistry/material science with focus on diffraction and synchrotron studies available at the Center for Materials Science and Nanotechnology/Department of Chemistry.

Employment is pending the completion of the required contracts between the centre participants and the funding agency. No one can be appointed for more than one Postdoctoral Research Fellowship at the University of Oslo.

More about the position

The fellowship is based at the Catalysis Group and associated with the Centre for Materials Science and Nanotechnology (SMN). The Catalysis section is studying the correlation between catalyst composition and their effects on chemical reactions. The catalysts can be of organic and/or inorganic origin. The Catalysis section has approximately 40 members, subdivided into three groups: the zeolite group synthesizes and characterizes zeolite and zeotype materials and studies catalytic reactions over those materials; the MOF-group does the same with metal-organic frameworks; the homogenous catalysis group synthesizes metal-organic complexes and studies their catalytic reactions.

The vision of SMN is to contribute to an increase of Norway's production through research on materials science and nanotechnology on functional materials, and ensure a level of quality that further builds the recognition of SMN as a leading centre amongst the Nordic countries, as well as internationally.

Employment at the Catalysis Group will allow the successful candidate the opportunity to work in a highly cross-disciplinary field in an internationally competitive research group with a high degree of international collaboration.

Introduction to the position: Postdoctoral fellow

This position is part of the TomoCAT project, which is funded by the Research Council of Norway. The project is a collaboration between the University of Oslo (project owner), the University of Torino, and the Danish industrial partner Haldor Topsøe A/S. The overreaching objective of TomoCAT is to develop the tools that might pave the way for a more efficient utilization of industrial catalysts. Such catalysts are always or shaped into millimeter sized catalyst objects suitable for large scale industrial use. The key feature of TomoCAT is to achieve a description of how various chemical phenomena, such as catalyst deactivation, occur in these shaped objects, resolved both in time and space. Time in this context means the time of use in an industrial process, whereas space means spatial resolution across shaped catalyst objects. This requires a combination of catalyst preparation, extensive basic and spectroscopic characterization and performance measurements in the home laboratory, as well as utilization of national research infrastructures and very advanced synchrotron methods for 3D imaging and tomography.

The main purpose of a postdoctoral fellowship is to provide the candidates with enhanced skills to pursue a scientific top position within or beyond academia. To promote a strategic career path, all postdoctoral research fellows are required to submit a professional development plan no later than one month after commencement of the postdoctoral period.

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 postdoctoral candidate will be extensively involved in advanced characterization of porous zeolite catalysts using synchrotron methods and various imaging techniques. The primary method for these investigations will be X-ray diffraction computed tomography, but other space and time resolved measurements such as Raman, infrared, and UV-Vis spectroscopy, X-ray absorption spectroscopy, and magnetic resonance imaging are also considered very relevant. Secondments with partners is planned as part of the project activities.

- Applicants must hold a degree equivalent to a Norwegian doctoral degree in (chemistry, chemical engineering, or physics). Doctoral dissertation must be submitted for evaluation by the closing date. Only applicants with an approved doctoral thesis and public defense are eligible for appointment.
- Experience with the application for beam time and the planning and execution of synchrotron based experiments is a requirement.
- A strong background in diffraction methods is required.
- Experience with handling and analysis of large datasets is considered highly beneficial.
- Experience with one or more of the methods listed above is considered highly beneficial.
- Experience with catalyst preparation is desirable
- Fluent oral and written communication skills in English

PLEASE NOTE:

In the cover letter to your application, please specify how your background and competence is suited to meet the challenges of the project. Be very specific in outlining your hands on experience with diffraction methods and synchrotron experience.

Personal skills
• Ability to conduct high-quality independent research within a broad collaboration
• Interpersonal communication skills and the ability to work as part of a team
• Willingness to work together with PhD and/or Master/Bachelor students in specialty field
• Self-motivation, creativity, genuine curiosity about the subject, work discipline, professional ethics, and ambition

We offer

• salary NOK 523 200 - 605 500 per annum depending on qualifications in position as Postdoctoral Research Fellow (position code 1352)
• a professionally stimulating working environment
• Postdoctoral development programmes
• 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

How to apply

The application must include:

• Cover letter (statement of motivation - clearly addressing each of the requirements of the position -, 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
• 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 (or a Scandinavian language).

In assessing the applications, special emphasis will be placed on the documented, academic qualifications, the project description (whenever this is required in the call for applicants), and the quality of the project 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

Please see the guidelines and regulations for appointments to Postdoctoral fellowships at the University of Oslo.

No one can be appointed for more than one Postdoctoral Fellow period at the University of Oslo.

According to the Norwegian Freedom of 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: Prof. Stian Svelle, phone: +47 228 55454, e-mail: Stian.Svelle@kjemi.uio.no

For question regarding our application system, please contact HR Adviser Ørjan Pretorius, 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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