UNIVERSITETET I OSLO

Jobbnorge ID: 257244
Deadline: 2/29/2024
Website: http://www.uio.no/
Scope: Fulltime
Duration: Engagement

Postdoctoral Research Fellow in Heterogeneous Catalysis and Chemical Kinetics

About the position

Position as Postdoctoral Research Fellow available at the Department of Chemistry, Centre for Materials Science and Nanotechnology (SMN).

Starting date no later than **October 1, 2024**

The appointment is a fulltime position and is for a period of three years (10% of which is devoted to required duties, usually in the form of teaching activities).

A fourth year may be considered with a workload of 25 % that may consist of teaching, supervision duties, and/or research assistance. This is dependent upon the qualification of the applicant and the current needs of the department.

No one can be appointed for more than one Postdoctoral Research Fellowship at the University of Oslo.

Knowledge development in a changing world - Science and technology towards 2030.

The Faculty of Mathematics and Natural Sciences

Video: https://www.youtube.com/watch?v=t4wvWQEhDEs

Job description / Project description / Development plan:

Valorization of CO2 as carbon source for fuels and commodity products is an integral part of a future circular economy scheme. The Catalysis Section at the University of Oslo is investigating processes for converting bulk products obtained from CO2/H2 mixtures, such as methanol, C2-C4 alkenes and alcohols, to longer-chain hydrocarbon products over zeolite/zeotype catalysts.

This research builds on a long tradition of studying the effect of zeotype composition and topology on preferred reaction paths and intermediates for methanol-to-hydrocarbons and olefins oligomerization reactions, yet with the increasing complexity of higher pressure and presence of co-products of CO2 hydrogenation, such as CO and H2O.

For this effort, we seek a postdoctoral candidate who will be responsible for catalytic testing and mechanistic investigations of methanol, C2-C4 alkenes and alcohols conversion to longer-chain hydrocarbon products over zeolite/zeotype catalysts, alone and in the presence of CO, CO2, H2, H2O co-feeds. The project will be co-supervised by Prof. Unni Olsbye and Dr. Evgeniy Redekop.

The postdoctoral researcher will be hosted at the Catalysis Section of the Department of Chemistry, Centre for Materials Science and Nanotechnology (SMN), which comprises approximately 30 members with expertise in catalysis by zeolites/zeotypes, metal organic frameworks, and organometallic compounds. Multiple collaboration opportunities exist within the section and the center, creating a stimulating and diverse research environment.

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.

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

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.

- Applicants must hold a degree equivalent to a Norwegian doctoral degree in in chemistry, chemical engineering or a closely related field. Doctoral dissertation must be submitted for evaluation by the closing date. Only applicants with an approved doctoral thesis and public defence are eligible for appointment.
- Documented experience in catalytic testing, gas chromatography, mass-spectrometry, chemical kinetics, transient methods, zeolite catalysis

- Intermediate level of data processing, including signal processing and numerical (transport-reaction) microkinetic modeling of chemical reactors. Programming experience and the knowledge of topical software is highly encouraged
- Documented skills in technical and scientific writing, such as publications in peer-reviewed scientific journals
- Fluent oral and written communication skills in English
- The position's subject area may require licensing under the Norwegian Export Control Act. In order to be considered for the position, it is a prerequisite that UiO must be able to be granted such licence. Må også lenke til denne siden: https://www.uio.no/english/studies/admission/master/export-control.html

Desired qualifications:

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

- Experience from synchrotron radiation facilities, preferably including operando studies
- Experience with standard characterization methods, such as N2 physisorption, TGA, SEM-EDX, FT-IR, NMR, TEM and XPS

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 teach 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 575 400 - 657 300 per annum depending on qualifications in position as Postdoctoral Research Fellowship (position code 1352)
- Attractive welfare benefits and a generous pension agreement
- Professionally stimulating working environment
- Vibrant international academic environment
- Postdoctoral development programmes
- Oslo's family-friendly surroundings with their rich opportunities for culture and outdoor activities

The application must include:

- Cover letter (statement of motivation, summarizing scientific work and research interest)
- Project description, including progress plan (max. 2 pages)
- CV (summarizing education, positions, pedagogical experience, administrative experience and other qualifying activity)
- Copies of educational certificates, 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 (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 projectas well as the candidates motivation and personal suitability. Interviews with the best qualified candidates will be arranged.

Formal regulations:

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

If an applicant has applied for and been granted funding for a fulltime research stay abroad while being employed as a Postdoctoral Research Fellow, the employment will be prolonged with the equivalent time as the research stay, but for no longer than of twelve months (thus extending the employment to a maximum of four years)

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.

Inclusion and diversity are a strength. The University of Oslo has a personnel policy objective of achieving a balanced gender composition. Furthermore, we want employees with diverse professional expertise, life experience and perspectives.

If there are qualified applicants with disabilities, employment gaps or immigrant background, we will invite at least one applicant from each of these categories to an interview.

Contact persons:

For further information about the position please contact:

Professor Unni Olsbye, phone: +47 228 5456, e-mail: unni.olsbye@kjemi,uio.no

For technical questions regarding the recruitment system, please contact:

HR Adviser Olga Holmlund, e-mail: olga.holmlund@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 Chemistry** is Norway's largest institution within research and education in chemistry. Our research excels internationally and we educate students to a wide variety of jobs in industry, academia, research institutions, schools and public administration.

Our research ranges from the core topics of chemistry to applied science within in environmental, health, energy and materials.

The Department has extensive contacts with industry, research and educational institutions at home and abroad. As partner in the Centre for Materials Science and Nanotechnology our researchers contributes to a significant interdisciplinary efforts in cooperation with the Department of Physics. The Department of Chemistry has its own school laboratory as a great resource for teachers, public outreach and the didactics of chemistry.

Additional information

Place of service:

Problemveien 7 0313 Oslo (Oslo Municipality)