UMEÅ UNIVERSITET

Post doctor position(2 years)developing membrane for harvesting blue energy

Umeå University, Faculty of Science and Technology

Umeå University is one of Sweden's largest institutions of higher education with over 35,000 students and 4,200 faculty and staff. We are characterised by world-leading research in several scientific fields and a multitude of educations ranked highly in international comparison. Umeå University is also the site of the pioneering discovery of the CRISPR-Cas9 genetic scissors - a revolution in genetic engineering that has been awarded the Nobel Prize in Chemistry.

At Umeå University, everything is nearby. Our cohesive campus environment makes it easy to meet, collaborate and exchange knowledge, which promotes a dynamic and open culture where we rejoice in each other's successes.

The Department of Chemistry offers a postdoctoral position in the field of Technical Chemistry that will mainly work on developing and testing membranes for harvesting blue energy based on Swedish natural and artificial water resources. The postdoctoral project includes the theoretical estimation of extractable energy, testing and characterizing the commercial membranes, synthesizing polymers, characterizing new membranes, and applying the prepared membranes for blue energy production. Last day to apply is July 31th 2021.

Project description
Our research group is focused on the design and synthesis of artificial membranes for gas separation, energy storage, and production. Currently, we focuses on designing and synthesizing new polymeric membranes for harvesting blue energy. In collaboration with Professor Frank Lipnizki research group at Lund University, we are going to develop a robust system for harvesting blue energy based on Swedish natural and artificial resources. The project is interdisciplinary, and the postdoctoral candidate will have the opportunity to plan and develop routes to synthesize novel membranes. The research involves the theoretical calculations for estimating the extractable energy, design, synthesis, and testing of new membranes, characterizing the membrane, and applying the prepared membrane in a lab scale unit.

Working tasks
The postdoctoral project includes the theoretical estimation of extractable energy, designing, synthesizing, characterizing new polymeric membranes, and testing them in a lab-scale setup to produce the blue energy. Furthermore, commercial membranes from several companies need to be evaluated. The promising membranes will be tested in the pilot-scale setup that we are planning to build at Lund University for this purpose. As a postdoc, you will contribute with your knowledge to the research group, summarize the research and present your progress at group meetings. The employment is full-time for a period of two years, starting at a date decided in agreement between the two parties.

Qualifications
The required qualification is a doctoral degree or a foreign degree that is deemed equivalent in chemistry in the field of polymer chemistry, chemical engineering or equivalent. Priority should be given to candidates who have completed their doctoral degree no more than three years before the closing date of the application. A candidate who has completed their degree prior to this may be considered if special circumstances exist. Special circumstances include absence due to illness, parental leave or clinical practice, appointments of trust in trade unions or similar circumstances. These must be clearly stated in the application.

You must have good knowledge of polymer chemistry, thermodynamic, membrane fabrication, membrane characterization, and application in energy production. As well as a documented good ability to conduct research and present it in writing in the form of scientific publications in expert-reviewed journals. You must be able to independently develop multistage syntheses and solve challenging synthetic problems in order to efficiently design, produce and characterize new membranes.

A desire to conduct research in a multidisciplinary project and in an environment that promotes collaboration between people with different skills, as well as excellent oral and written knowledge of English is required. We are looking for a highly motivated candidate. It is important that you are creative and have the ability and interest to co-operate with other team members.

Application
The application must be written in English or Swedish and contain the following documents:

- A cover letter that describes qualifications, research interests, and motivation for application. Please specify how your previous experience fits with the advertised employment (maximum 2 pages).
- A curriculum vitae, including a publication list.
- A certified copy of doctoral degree certificate and other relevant degree certificates and grades.
- Name and contact information of at least three reference persons.
- Other documents that the applicant wishes to claim.

Applications must be submitted via our e-recruitment system Varbi no later than **July 31th, 2021**.

For further information, please contact D.Eng. Naser Tavajohi, tfn: +4690-786 60 61 or e-mail: naser.tavajohi@umu.se.

Information about the department
Department of Chemistry is the largest department in the Faculty of Science and Technology, with approximately 200 employees, including about 40 doctoral students, and with a strong and expanding research. Three major areas of research; Biological Chemistry, Environmental and Biogeochemistry and Technical Chemistry, represents the research and chemistry education of our department. We are also a strong partner in KBC, The Chemical-Biological Centre. For more information about working at Umeå University: www.umu.se/en/work-with-us/.

Umeå University wants to offer an equal environment where open dialogue between people with different backgrounds and perspectives lay the foundation for learning, creativity and development. We welcome people with different backgrounds and experiences to apply for the current employment.

We kindly decline offers of recruitment and advertising help.

Type of employment
Temporary position longer than 6 months

Contract type
Full time

First day of employment
By agreement

Salary
Monthly

Number of positions
1

Working hours
100%

City
Umeå

County
Västerbottens län

Country
Sweden

Reference number
AN 2.2.1-781-21

Contact
Naser Tavajohi, 090-7865000

Union representative
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