Postdoctoral research position in upscaling and optimisation of waste plastic chemical recycling

Are you excited about advanced chemical recycling of waste plastic and can you contribute to the development of the EU project ACTPAC? Then the Department of Biological and Chemical Engineering invites you to apply for a 1.5 year postdoc position.

Expected start date and duration of employment
This is a 1.5–year position from 01.07.2025 to end on 31.12.2026.

Job description

- You will be developing the upscaling of chemical depolymerisation of waste polyolefins by thermochemical processing e.g. metathesis, hydrogenolysis, catalytic processes
- You will be working primarily with engineers to design and implement a continuous reactor for the upscaling of catalytic depolymerisation technology developed by one of the consortium partners.
- The position will focus on aspects of reactor design, operation and optimisation as well as analysis of products using analytical chemistry, mass and energy balances and similar
- These activities will be in close collaboration with the project consortium partners and will be expected to actively contribute to the success of the project outcomes and dissemination.

Your profile
Prior experience in operation, design and maintenance of chemical engineering processes at lab or pilot scale is desired. It is expected that the applicant has previous experience in high temperature, high pressure conversion processes of plastics and possesses a thorough understanding of polymer depolymerization.
The candidate is required to have a PhD in chemical engineering, process engineering or similar (or about to complete the degree). A strong academic background in applied research and publication record are expected. Experience in analysis of polymers, fuels and monomers using equipment such as HPLC, FTIR, NMR, GC-MS and similar are essential skills for the candidate.

The ideal candidate has all or several of the following qualifications and specific competences:

- A PhD degree in Chemical Engineering or similar
- Prior experience in high pressure/temperature processes
- A solid background in chemical recycling of polymers or related areas.
- The ability to work independently and to generate new ideas and creative approaches.
- The ability to write high impact, peer reviewed academic publications.
- Is passionate about science and engineering and working in a team dedicated to green technologies.

Who we are
The Department of Biological and Chemical Engineering Within Chemical Engineering, the BCE Department has strong research sections in Environmental Engineering and Materials & Process Engineering. Close collaboration with our neighboring Departments (Mechanical Engineering, Electrical & Computer Engineering, Molecular Biology & Genetics, iNano, Biosciences, Food, Agroecology and Chemistry) is a natural part of our culture. The successful applicant will be working with Chemical Engineering and will produce and disseminate knowledge and research results. Translation of results into solving relevant societal challenges is a highly prioritized part of our work

Application Deadline:
20 March 2025

Faculty:
Faculty of Technical Sciences

Institute/Faculty:
Department of Biological and Chemical Engineering

Academic contact person:
Patrick Biller
Lektor
pbiller@bce.au.dk

Vacant positions:
1

Hours per week:
37

Number of months:
18

Expected date of accession:
01/07/2025

What we offer

The department/centre offers:

- a well-developed research infrastructure, laboratories and access to shared equipment
- an exciting interdisciplinary environment with many national, international and industrial collaborators
- a research climate encouraging lively, open and critical discussion within and across different fields of research
- a work environment with close working relationships, networking and social activities
- a workplace characterised by professionalism, equality and a healthy work-life balance.

Place of work and area of employment

The position includes two permanent workplace addresses in Foulum and Aarhus respectively. The attendance at each workplace address is by agreement with your immediate supervisor. At the time of employment, the distribution between the workplace addresses is expected equally distributed with place of employment in Aarhus and Foulum. In Aarhus the place of work is Department of Biological and Chemical Engineering, Hangøvej 2, 8200 Aarhus. In Foulum the place of work is Centre for Biorefining Technologies, Blichers Alle 20, 8830 Foulum. The area of employment is Aarhus University with affiliated institutions.

Contact information

For further information, please contact: Associate Professor, Patrick Biller, pbiller@bce.au.dk

Application procedure

Shortlisting is used. This means that after the deadline for applications – and with the assistance from the assessment committee chairman, and the appointment committee if necessary, – the head of department selects the candidates to be evaluated. All applicants will be notified whether or not their applications have been sent to an expert assessment committee for evaluation. The selected applicants will be informed about the composition of the committee, and each applicant is given the opportunity to comment on the part of the assessment that concerns him/her self. Once the recruitment process is completed a final letter of rejection is sent to the deselected applicants.

Letter of reference

If you want a referee to upload a letter of reference on your behalf, please state the referee's contact information when you submit your application. We strongly recommend that you make an agreement with the person in question before you enter the referee's contact information, and that you ensure that the referee has enough time to write the letter of reference before the application deadline.
Unfortunately, it is not possible to ensure that letters of reference received after the application deadline will be taken into consideration.

If you wish to add a referee **after** you have submitted your application, you must send this person's details (name, job title, place of work, and email address) as well as the name of the position you have applied for to: HR.Nattech@au.dk

Formalities and salary range

Technical Sciences refers to the Ministerial Order on the Appointment of Academic Staff at Danish Universities under the Danish Ministry of Science, Technology and Innovation.

The application must be in English and include a curriculum vitae, degree certificate, a complete list of publications, a statement of future research plans and information about research activities, teaching portfolio and verified information on previous teaching experience (if any). Guidelines for applicants can be found here.

Appointment shall be in accordance with the collective labour agreement between the Danish Ministry of Taxation and the Danish Confederation of Professional Associations. Further information on qualification requirements and job content may be

found in the Memorandum on Job Structure for Academic Staff at Danish Universities.

Salary depends on seniority as agreed between the Danish Ministry of Taxation and the Confederation of Professional Associations.

Aarhus University's ambition is to be an attractive and inspiring workplace for all and to foster a culture in which each individual has opportunities to thrive, achieve and develop. We view equality and diversity as assets, and we welcome all applicants.

Research activities will be evaluated in relation to actual research time. Thus, we encourage applicants to specify periods of leave without research activities, in order to be able to subtract these periods from the span of the scientific career during the evaluation of scientific productivity.

Aarhus University offers a broad variety of services for international researchers and accompanying families, including relocation service and career counselling to expat partners. Read more here. Please find more information about entering and working in Denmark here.

Aarhus University also offers a Junior Researcher Development Programme targeted at career development for postdocs at AU. You can read more about it here.

The application must be submitted via Aarhus University's recruitment system, which can be accessed under the job advertisement on Aarhus University's website.

Aarhus University

Aarhus University is an academically diverse and research-intensive university with a strong commitment to high-quality research and education and the development of society nationally and globally. The university offers an inspiring research and teaching environment to its 38,000 students (FTEs) and 8,300 employees, and has an annual revenues of EUR 935 million. Learn more at www.international.au.dk/