Post-doc on probing exotic quantum states in conductive Metal-Organic Frameworks

The Goesten Group at the Department of Chemistry, Aarhus University, is seeking a candidate for a 12 months fulltime postdoctoral position, co-supervised by Prof. Yong Chen and Prof. Jill Miwa at the Department of Physics. The position is available from the 1st of May 2026, or as soon as possible hereafter.

Job description

Your research will look at a special class of porous metal-organic frameworks (MOFs) that is based on redox-active organic building blocks. These building blocks enforce charge delocalization and give rise to exotic quantum states that relate to superconductivity.
This project will focus on two types of phenomena: (i) Charge Density Wave (CDW) order in magnetic, lanthanide-based MOFs and (ii) electride-like, quasiatomic electron states that reside in the pores of certain MOFs. The aim of the project is to map these states with Scanning Tunneling Microscopy/Spectroscopy (STM/STS) and where possible, angle-resolved photoemission spectroscopy (ARPES). Your work will focus on the spectroscopy,
and does not involve single-crystal synthesis. This project involves intensive international collaboration with multiple research groups.

Your profile

- You hold a PhD in physics, chemistry or materials science.
- Preferably you have a background in STM/STS, photoelectron spectroscopy (ARPES, XPS) or Atomic Force Microscopy (AFM).
- Preferably you have experience with Ultra High Vacuum sample preparation, cryogenics and surface-science tools.
- You have strong communication and writing skills in English.
- You are a team player but also do not mind working independently.

Who we are/ The Department

The Department of Chemistry at Aarhus University (www.chem.au.dk) is one of the leading European chemistry departments with a broad research programs. It has a permanent staff of ~35 full and associate professors, a support-staff of ~30 people, ~150 PhD-students and postdocs and around 400 students.

Working in Denmark offers opportunities for a good work-life balance. English is widely spoken, though Danish is the main language of campus. English is the working language.

Aarhus is Denmark's second largest city, and forms the center of the western parts of the country on the Jutland peninsula. Recently, Aarhus has attracted international attention as a travel destination due to its unique combination of a thriving food-scene, high-quality museums, a surrounding beautiful nature, a very lively city due to the "young population", many cultural events including music festivals etc. See e.g. the recent recommendation by CNN (https://edition.cnn.com/travel/article/aarhus-denmark-things-to-do/index.html).

Aarhus is easily reached through local international airports in Jutland within 1 hour of Aarhus, or through either Copenhagen or Hamburg Airports, both situated about a 3-hour train-journey from Aarhus.

Aarhus University is consistently ranked as a top-100 university in the World, and it houses both an engineering and a medical school, as well as the traditional sciences, social sciences, environmental and agricultural sciences and arts.

Place of work

The place of work is Langelandsgade 140, 8000 Aarhus C, and the area of employment is Aarhus University with related departments.

Contact information

Further information about the position may be obtained from Maarten Goesten, email: maarten.goesten@chem.au.dk and Yong Chen, email: yongchen@phys.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

Application Deadline:
02 March 2026

Institute/Faculty:
Department of Chemistry

Faculty:
Faculty of Natural Sciences

Academic contact person:
Maarten Goesten
Adjunkt (Tenure Track)
maarten.goesten@chem.au.dk
+4593508849

Vacant positions:
1

Number of months:
12

Hours per week:
37

Expected date of accession:
01/05/2026

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

Natural 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.

At the Faculty of Natural Science at Aarhus University, we strive to support our scientific staff in their career development. We focus on competency development and career clarification and want to make your opportunities transparent. On our website, you can find information on all types of scientific positions, as well as the entry criteria we use when assessing candidates. You can also read more about how we can assist you in your career planning and development.

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/