

# Postdoc position in Mechanical Engineering

## A postdoc position in data-driven optimization of manufacturing processes

Applications are invited for a Postdoc position at the Department of Mechanical and Production Engineering and Computer Science at Aarhus University. The position is supported by a Villum Synergy grant for the project "Enabling efficient use and recycling of cutting tools using multifidelity optimization (CutMore)" to be carried out at Professors Ramin Aghababaei's research groups at the Department of Mechanical and Production Engineering. The project will be in collaboration with the Panagiotis Karras's research groups at Computer science Department.

The main objective of this multidisciplinary project is to enable efficient use and thus enhance recyclability of cutting tools. The aim is to use multi-fidelity optimization algorithm to find optimum cutting parameters as a function of tool and work piece geometry manufactured by milling processes. Throughout this project, we will closely collaborate with researchers with both mechanical engineering and computer science background as well as relevant industries.

The position is for 2 years, and the starting date is March 1, 2023 or as soon as possible. The application deadline is January 2nd, 2023.

## What we offer

Aarhus University offers:

- An interdisciplinary environment with many national, international, and industrial collaborators
- The opportunity to co-supervise PhD and MSc students working in related topics
- A workplace characterized by professionalism, equality and a healthy work-life balance.

## Job description and your profile

- PhD degree in Mechanical Engineering or related disciplines
- Strong background in Tribology and mechanics of manufacturing processes in particular milling and turning
- Strong background in computational mechanics (experience with wear modeling is a plus)
- Excellent writing and communication skills
- Experience in physics-based data driven optimization and machine learning is a plus

The Surface Mechanics and Tribology group, led by Associate Professor Ramin Aghababaei, currently consists of 2 postdocs, 6 PhD students and several master students. The group interest is on physics and mechanics of tribological phenomena including friction and wear for a wide range of materials and optimization of manufacturing processes.

## Place of Work and area of Employment

Place of employment is Aarhus University, and place of work is Department of Mechanical and Production Engineering, Faculty of Technical Sciences, Navitas Inge Lehmanns Gade 10, 8000 Aarhus C.

Questions regarding the position should be directed to associate professor Ramin Aghababaei, [ra@mpe.au.dk](mailto:ra@mpe.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.

## 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](#).

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

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#### **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](#).

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**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 8,000 employees, and has an annual revenues of EUR 885 million. Learn more at [www.international.au.dk/](http://www.international.au.dk/)*