

# Postdoc in Graph-based District Heating Modelling and Optimisation

Are you interested in optimisation of District Heating Systems and can you contribute to the development of our Villum Synergy project, "Recycling waste heat: Graph-based Algorithms for Spatiotemporal Optimization of Thermal Networks"? Then the Department of Civil and Architectural Engineering invites you to apply for a 2-year and 3-month position.

## Expected start date and duration of employment

This is a 2-year and 3-month position from 1 April 2026, or as soon as possible. This is a fixed-term position to end on 30 June 2028.

## Job description

We are offering a Postdoctoral research position in district heating modelling and optimisation, with particular focus on:

- Graph-based, data-driven modelling of district heating networks.
- Data analysis and modelling of waste-heat sources and demand profiles.
- Spatio-temporal optimisation of waste-heat sources and supporting energy technologies integration.
- Cross-domain collaboration with computer science.

This position is part of an interdisciplinary project, where research tasks will be carried out in collaboration with the research group of [Davide Mottin](#), at the Department of Computer Science, and [Kredsløb](#), Aarhus's district heating company.

## Your profile

The ideal candidate has:

- a PhD in Mechanical Engineering, Energy Engineering, Civil Engineering or similar.
- Strong background in one or more of the following areas: district heating modelling, thermal energy system optimisation, data-driven modelling of energy systems, energy systems planning.
- Documented experience in handling research challenges
- Solid programming skills (e.g. Python, Matlab)
- Ability to analyse spatial (GIS) and temporal datasets
- Interest in interdisciplinary work involving computer science
- Strong written and verbal English communication skills

## Who we are

Department of Civil and Architectural Engineering was established on January 1, 2021 in connection with Aarhus University's reorganisation of the engineering area. The department employs around 100 people and is responsible for research and education within the department's scientific areas. We educate both Bachelors and Masters of Science in Engineering and around 950 students are enrolled in our study programs. Furthermore, we also offer an ambitious PhD program. Our PhD students have high academic ambitions and deliver high-quality results for both the private and the public sectors.

Through research and development, we forge sustainable technological solutions to some of the biggest challenges facing industry and society. We strive to contribute to sustainable development and to create green solutions to challenges within construction, indoor climate, geotechnics, environmental and climate adaptation and many other areas.

Our research is both basic and applied, and we develop current knowledge into workable solutions in the business community. We collaborate with a wide range of public and private enterprises, and many of the department's research and development activities are based on the innovation needs of the business community. Through collaboration, we ensure that the knowledge and technology generated in the university's technical research environments are clearly anchored in reality and benefit the surrounding society. Based on our research on building materials, architectural design and technology, we also offer research-based public sector services and

**Application Deadline:**  
07 January 2026

**Institute/Faculty:**  
Department of Civil and Architectural Engineering

**Faculty:**  
Faculty of Technical Sciences

**Academic contact person:**  
Massimo Fiorentini  
Lektor  
massimo@cae.au.dk  
+4593522961

**Vacant positions:**  
1

**Number of months:**  
27

**Hours per week:**  
37

**Expected date of accession:**  
01/04/2026

consultancy on technology to public agencies and ministries.

### **What we offer**

- 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 place of work is Inge Lehmanns Gade 10 (Navitas), Aarhus, at the Department of Civil and Architectural Engineering of Aarhus University.

### **Contact information**

For further information, please contact: Associate Professor, Massimo Fiorentini, +45 93 52 29 61, [massimo@cae.au.dk](mailto:massimo@cae.au.dk).

### **Deadline**

Applications must be received no later than 7 January 2026.

### **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](mailto: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/](http://www.international.au.dk/)*