Postdoc in Advanced Image Processing for Spectral Micro-CT Breast Cancer Imaging

Application Deadline:
16 March 2026

Institute/Faculty:
Department of Clinical Medicine

Faculty:
Faculty of Heatlh

Academic contact person:
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Vacant positions:
1

Number of months:
12

Hours per week:
37

Expected date of accession:
01/05/2026

The Department of Clinical Medicine at Faculty of Health at Aarhus University invites applications for a position as Postdocoral researcher in the field of spectral (photon-counting) micro-CT imaging of breast cancer as per 1st of May 2026 or as soon as possible thereafter. The position is a fixed-term full-time position for 1 year.

As a Postdoctoral researcher at the Department of Clinical Medicine, you will be part of what is probably the largest health science research department in Denmark. Our clinical research covers all the medical specialities and takes place in close collaboration with the university hospital and the regional hospitals in the Central Denmark Region. We have approx. 30,000 square metres of modern research facilities for experimental surgery and medicine, animal facilities and also advanced scanners at our disposal. The department has overall responsibility for the Master's degree programs in medicine and in molecular medicine. At the department we are approx. 670 academic employees, 500 PhD students and 160 technical/administrative employees who are cooperating across disciplines. As a Postdoctoral researcher, you will be working at Aarhus University Hospital or another hospital in the Central Denmark Region. You can read more about the department here and about the faculty here.

About the research project

This is an interdisciplinary project in spectral (photon-counting) micro-CT imaging of breast cancer combining cutting-edge imaging technology with clinical pathology to develop quantitative 3D imaging biomarkers that bridge high-resolution micro-CT and histology.

Our team includes a medical PhD student with pathology expertise who performs surgical specimen collection, tissue slicing, micro-CT scans, histological processing, and initial registration. The postdoc will lead the image processing and computational analysis efforts, developing robust methods to register, segment, and analyse spectral micro-CT data, and — where relevant — advance reconstruction and material decomposition techniques.

This position is research-intensive and offers excellent opportunities for high-impact publications and international collaboration.

Your job responsibilities

As Postdoc in the Department of Clinical Medicine, your position is primarily research-based but may also involve teaching assignments. You will contribute to the development of the department through research of high international quality. In your daily work, you will work closely with colleagues on your project, especially the PhD student and the supervisors, where you will receive supervision and guidance.

Your main tasks will consist of:

- Independent research of high international quality, including publication.
- Developing and implementing deformable image registration between micro-CT volumes and histological sections
- Designing and evaluating segmentation algorithms for multi-energy spectral CT data
- Contributing to or leading work on advanced reconstruction, spectral decomposition, or signal processing methods
- Integrating image processing workflows into reproducible pipelines
- Publishing results in international peer-reviewed journals and presenting at scientific conferences
- Collaborating closely with clinical partners and project researchers

You will report to the Head of Department.

Your competences

You have academic qualifications at PhD level, for example within the following areas:

- Medical imaging, biomedical engineering, physics, computer science, applied

mathematics, or similar

Required competences

- Strong background in image processing and analysis, especially Deformable image registration and 3D segmentation methods
- Experience with volumetric image data
- Excellent programming skills (e.g., Python, C++, MATLAB) and familiarity with scientific libraries (ITK/SimpleITK, VTK, TensorFlow/PyTorch, etc.)
- Ability to work independently, collaborate across disciplines, and communicate scientific results effectively in English

Desirable competences

- Knowledge of CT reconstruction or spectral imaging physics
- Experience with deep learning for imaging tasks
- Prior work with histology–imaging registration or material decomposition
- Clinical research exposure

As a person, you have good interpersonal skills, are inclusive and team-oriented and able to contribute to a good work environment. We expect you to be fluent in oral and written English.

In order to be assessed as qualified for a Postdoc position, you must meet these academic criteria.

Shortlisting will be used.

What we offer

- A one year fully funded postdoc position embedded in a clinically relevant, high-profile research project
- Access to state-of-the-art photon-counting micro-CT systems and unique breast cancer specimen datasets
- An interdisciplinary and supportive research environment at Aarhus University's Faculty of Health
- Opportunities for international collaboration, conference travel, and career development
- Assistance with relocation and settling in Denmark for international applicants international.au.dk

Questions about the position

If you have any questions about the position, please contact Head of Innovation at Aarhus University Hospital (AUH), ass.prof. in medical physics, Jasper Nijkamp, JASNIJ@rm.dk or consultant pathologist, ass.prof. Trine Tramm, Dept. of Pathology, AUH, tramm@clin.au.dk.

Your place of work will be the Department of Pathology, Aarhus University Hospital, Palle Juul Jensens Boulevard 99, C112, 8200 Aarhus N, Denmark.

Your daily workplace will, however, mainly be at the Danish Center of Particle Therapy (DCPT), Aarhus University Hospital, where the Spectral MicroCT scanner is located.

We expect to conduct interviews by the end of March.

Terms of employment

- Appointment as a postdoc requires academic qualifications at PhD level.
- Further information on the appointment procedure can be found in the Ministerial Order on the Appointment of Academic Staff at Universities.

- The appointment is in accordance with the Danish Confederation of Professional Associations (Akademikerne).
- Remuneration is in accordance with the above, and the Salary agreement catalogue for staff at Health.
- The yearly base salary for a fulltime postdoc is between DKK 484.214,84 and DKK 538.720,20 depending on the years of working experience after achieved MSc degree. The base salary includes a position related supplement and pension (17.1 %). Additional supplement(s) for special qualifications can be negotiated. Authorisation supplemement(s) will be granted, if relevant for the position. Your local eligible trade union representative at Aarhus University negotiates your salary on your behalf.
- Researchers recruited from abroad are offered a special researcher tax scheme with a lower tax rate.
- Further information on qualification requirements and job description can be found in the Ministerial Order on Job Structure for Academic Staff

Application

Your application must include the following:

- Motivated application
- Curriculum Vitae
- Diploma
- Template for applicant - postdoc
- A list of publications
- A teaching portfolio. We refer to Guideline on the use of teaching portfolios
- A maximum of five of the publications of greatest relevance to the job may be submitted (optional)
- Research plan can be uploaded (optional)
- Coauthor statement(s) can be uploaded (optional)
- References/recommendations can be uploaded separately in the e-recruitment system (optional)

We refer to the faculty's Guidelines for applicants.

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.

International applicant?

Aarhus University offers a broad variety of services for international researchers and accompanying families, including assistance with relocation and career counselling to expat partners. Please find more information about the International Staff Office and the range of services here. Aarhus University also has a Junior Researcher Association and offers career development support. You can read more about these resources 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/