# Postdoc position in terahertz time-domain spectroscopy for plastic type discrimination

Are you interested in optical characterization and can you contribute to the development of the project with instrumentation of Terahertz Time-Domain Spectroscopy for the plastic sorting industry? Then the Department of Electrical and Computer Engineering invites you to apply for a 2 year postdoc position bridging research with industrial implementation and innovation.

**Application Deadline:**
31 January 2026

**Institute/Faculty:**
Department of Electrical and Computer Engineering

**Faculty:**
Faculty of Natural Sciences

**Academic contact person:**
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**Vacant positions:**
1

**Number of months:**
24

**Hours per week:**
37

**Expected date of accession:**
01/05/2026

### Expected start date and duration of employment
This is a 2–year position from May 1st, 2026, or as soon possible thereafter.

### Job description
We are seeking a motivated researcher with a versatile profile to join the project “Terahertz Time-Domain Spectroscopy for Plastic Type Discrimination.” The position involves addressing several scientific and technical challenges, including:

- Design and implementation of a new THz-TDS system for plastic discrimination and sorting in an industrial setting.
- Testing and benchmarking the system with respect to experimental geometry, operational speed, and robustness against noise factors.
- Advanced data analysis to translate THz signals into optical material properties such as refractive index and absorption coefficient.
- Development of machine learning algorithms for material classification.
- Exploration of technological business models in collaboration with our in-house innovation hub.

### Your profile
The ideal candidate is expected to hold a PhD in Physics, Photonics, Electrical Engineering, or a related field, and demonstrate:

- Experience with optical spectroscopy, and ideally with terahertz technology.
- Experience with hardware control using Matlab, Python, or similar tools. Experience with machine learning algorithms and classification is considered an advantage.
- Hands-on experience in building experimental setups, including hardware implementation.

In addition, applicants are expected to:

- Provide a statement outlining future research interests and expectations.
- Possess strong collaboration and communication skills.
- Have an excellent command of English, both spoken and written.
- Be able to work independently on research questions and manage practical challenges related to laboratory facilities.
- Be capable of supervising students in their research projects and contributing to a constructive and supportive research environment.

### Who we are
You will join the Terahertz Photonics Group within the Department of Electrical & Computer Engineering at Aarhus University. Our research focuses on terahertz science and technology, including the use of terahertz systems for materials characterization of polymers, semiconductors, solar cell materials, and more.

We offer access to a well-equipped laboratory featuring both custom-built and

commercial terahertz time-domain spectroscopy (THz-TDS) systems. Our group consists of researchers and students at all academic levels, providing an environment that supports studies ranging from applied research to fundamental scientific questions.

### What we offer

The successful candidate will have a unique opportunity to join a multidisciplinary team dedicated to addressing one of today's most pressing challenges: plastic recycling. This project combines scientific exploration with technological innovation, and offers the chance to contribute to both cutting-edge research and practical solutions. In addition, the hired candidate may involve business-oriented perspectives through collaboration with our innovation hub.

### Place of work and area of employment

The place of work is Department of Electrical and Computer Engineering, Aarhus University, Finlandsgade 22, 8200 Aarhus N, and the area of employment is Aarhus University with related departments.

### Contact information

For further information, please contact: Associate Professor Pernille Klarskov Hansen, klarskov@ece.au.dk, +4593531158,  Department of Electrical and Computer Engineering

### Deadline

Applications must be received no later than January 31st 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

### 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/*