

Doctoral researcher in radio engineering for MRI  
applications  
Aalto University

Direct Link: <https://www.AcademicKeys.com/r?job=229720>

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Posted Jan. 30, 2024, set to expire Dec. 30, 2024

**Job Title** Doctoral researcher in radio engineering for MRI applications  
**Department** T410 Dept. Electrical Engineering and Automation  
**Institution** Aalto University  
, , Finland

**Date Posted** Jan. 30, 2024

**Application Deadline** Open until filled  
**Position Start Date** Available immediately

**Job Categories** Post-Doc

**Academic Field(s)** Electrical and/or Electronics

**Job Website** [https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/Doctoral-researcher-in-radio-engineering-for-MRI-applications\\_R38544-1](https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/Doctoral-researcher-in-radio-engineering-for-MRI-applications_R38544-1)

**Apply By Email**

**Job Description**

Aalto University is where science and art meet technology and business. We shape a sustainable future by making research breakthroughs in and across our disciplines, sparking the game changers of tomorrow and creating novel solutions to major global challenges. Our community is made up of 13 000 students, 400 professors and close to 4 500 other faculty and staff working on our dynamic campus in Espoo, Greater Helsinki, Finland. Diversity is part of who we are, and we actively work to ensure our community's diversity and inclusiveness. This is why we warmly encourage qualified candidates from all backgrounds to join our community.

The Department of Electrical Engineering and Automation is now inviting applications for a:

Doctoral Candidate (PhD Student) Position in the field of Radio Engineering

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The Department of Electrical Engineering and Automation from Aalto University is offering a Doctoral Researcher position in Radio Engineering. The goal of the research is to develop and optimize a new type of transceiver radiofrequency coil for Magnetic Resonance Imaging (MRI). In brief, the proposed coil design is based on a patented innovation which will bring significant advantages for medical imaging and diagnostics. This position is conditional to the project obtaining a Research-to-Business grant from Business Finland during the Spring application period.

#### YOUR ROLE AND GOALS

Your main tasks will involve familiarizing yourself with the electromagnetic principles of the novel coil design, developing a radiofrequency coil array and optimizing it for a given application (e.g. head scanning), performing a comparison study between your prototype and existing coils, and publishing your results in scientific journals. This position will allow you to deepen your knowledge of electromagnetics, grow into an independent researcher but also have practical experience in developing concrete technical solutions for healthcare.

You will be part of Professor Ilkka Laakso's research group on Electromagnetics in Health Technology, and will be specifically working on a Research to Business project, working closely with the researcher behind the innovation (Dr. Masoud Sharifian Mazraehmollaei) and the project business developer.

After the initial learning phase, you will work rather independently, with the close support and supervision of the senior researcher in the group, and of the project leader Prof. Laakso.

As part of your work, you will have the chance to interact with other technical and medical experts, both locally and internationally. You may be expected to travel to possibly perform measurements and visit specialized trade events.

#### YOUR EXPERIENCE

A Master's degree in electrical engineering, biomedical engineering, physics, or a related field is a requirement to be considered for this position. To be successful in this position, proficiency in the following areas are required: \*

Deep understanding in electromagnetics theory \*

Expertise in CST and ADS \*

Knowledge of PCB design, preferably with Altium designer \*

Good command of English based on Aalto University requirements \*

Finnish is a plus, but not required

#### WHAT WE OFFER

Aalto University follows the salary system of Finnish universities. The starting salary of Doctoral

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Researcher is approximately 2700 €/month (gross), and it increases as you progress in your research and studies. The total duration of Ph.D. studies is four years. The annual workload of research and teaching staff at Aalto University is currently 1612 hours.

We offer a wide range of staff benefits, such as occupational health care, flexible working hours, excellent sports facilities on campus and several restaurants and cafés on campus with staff discounts. The position is located at the Aalto University Otaniemi campus which can be easily reached by public transport.

#### HOW TO APPLY

The deadline for applications is the 29th of February 2024, but candidates are encouraged to apply as soon as possible. Please submit your application in our recruitment system by using the “Apply now!” link below.

We will go through applications, and we may invite suitable candidates to interview already during the application period. The start of the employment is to be defined at a later stage, but is tentatively scheduled on the 1st of August 2024. Aalto University reserves the right for justified reasons to leave the position open, to extend the application period, reopen the application process, and to consider candidates who have not submitted applications during the application period.

To apply, please send your application including following attachments (only in PDF format, English language): \*

A letter of motivation describing your interests and why you think you would be the right person to conduct the research (max. 1 page) \*

Curriculum vitae (include the contact details of at least two references, and if available, a list of publications) \*

PDF copy of your MSc and BSc degree certificates, including transcripts of all MSc and BSc university records (grades and courses) and their English translations (Finnish and Swedish certificates are also accepted). Unofficial transcripts are acceptable for application purposes.

For additional information, please contact Professor Ilkka Laakso ([ilkka.laakso@aalto.fi](mailto:ilkka.laakso@aalto.fi)).

#### Contact Information

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Please reference Academickeys in your cover letter when  
applying for or inquiring about this job announcement.

**Contact**

Finland