

2 Doctoral Researchers for research groups on Photonics Aalto University

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Posted Aug. 7, 2024, set to expire Dec. 30, 2024

Job Title	2 Doctoral Researchers for research groups on Photonics
Department	T411 Dept. Electronics and Nanoeng
Institution	Aalto University , , Finland
Date Posted	Aug. 7, 2024
Application Deadline	Open until filled
Position Start Date	Available immediately
Job Categories	Graduate Student
Academic Field(s)	Electrical and/or Electronics
Job Website	https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/XMLNAME-2-Doctoral-Researchers-for--research-groups-on-Photonics_R40363-3

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.

[url=https://prein.fi/]PREIN Flagship is a Photonics Research and Innovation platform focusing on light-based solutions from scientific excellence to industrial and societal impact. To address the need of the industry for new high-level experts, the I-DEEP consortium was established based on the activities of

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the Flagship for PREIN, the photonics national research infrastructure FinnLight and Photonics Finland. The I-DEEP programme addresses the urgent need for training experts in the rapidly growing photonics industry.

In this 2nd call, I-DEEP consortium is now looking for two more Doctoral Researchers for research groups on Photonics.
Join us in shaping the future!

Scientific environment

You will mainly be working in the [[url=https://www.aalto.fi/fi/otanano/micronova](https://www.aalto.fi/fi/otanano/micronova)]Micronova facility. Micronova's facilities allow flexible processing and integration of micro- and nanoelectronic, micromechanical, photonic and fluidic devices. Substrate materials include silicon, III-V semiconductors, glass and quartz. The main wafer size is 150 mm, but also 200 mm and 100mm are supported for some processes. For some purposes even smaller samples are used. All necessary main process technologies are available, including optical and nanolithography, CMOS and BiCMOS, dry and wet etching, focused ion beam milling, micropackaging, wafer bonding, thin film processing and epitaxial deposition.

Micronova is part of [[url=https://www.aalto.fi/en/otanano](https://www.aalto.fi/en/otanano)]OtaNano - Finland's national research infrastructure for micro- and nanotechnology, jointly run by VTT Technical Research Centre of Finland and Aalto University.

Your experience and ambitions

We are looking for applicants who have *

A keen interest in research, e.g., learning how to build your own instruments, perform your own experiments, and analyze your results. *

Excellent student track records

A good command of English is required.

An applicant must have completed by 31 December 2024 or preferably earlier (to start employment on 1 January 2025) *

a master's degree awarded by a university, or *

a study programme that in the awarding country gives eligibility for doctoral level studies in Photonics and relevant fields (e.g., Physics, Electrical engineering, Nanotechnology, Material Sciences, Quantum).

Applicants must fulfill the admission criteria of the Aalto Doctoral Programme and, if chosen for a position, apply for, obtain and accept the right to pursue doctoral studies at Aalto University. For more information on the general requirements and the application process for doctoral studies, please visit

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[url=https://www.aalto.fi/en/doctoral-education/how-to-apply-for-doctoral-studies]https://www.aalto.fi/en/doctoral-education/how-to-apply-for-doctoral-studies

If you already have a study right for a doctoral degree at Aalto University, it needs to be awarded 1 November 2023 or thereafter for you to be eligible for these positions.

What we offer *

Opportunity to work in a dynamic community of world-class researchers and professionals where students are rigorously selected and highly motivated. This leads to an exceptionally interactive and intellectually challenging atmosphere at Aalto. *

We have a flexible modern work culture. We value the balance and well-being of work and leisure in all aspects of life. *

We offer you an interesting job in an inspiring work environment. You will be able to work in a community where we promote socially significant goals in science and education. We will familiarize you with your tasks and you will be part of a nice and competent team that will provide you with support for your work tasks also in the future. We encourage and offer opportunities for continuous development of your own expertise. *

The expected starting date for the position is during autumn 2024 or at latest 1st January 2025.

Presence in Finland for the duration of the contract is compulsory. *

Employment contracts will be made for three years with the funding from the Finnish Ministry of Education and Culture. The contract includes a prerequisite to apply, receive and accept doctoral study right within the probation period of the first 6 months. *

The annual workload of research and teaching staff at Aalto University is 1612 hours. *

Aalto University follows the salary system of Finnish universities. The starting salary is approximately 3000 €/month (gross), and it increases as the Doctoral Researcher progresses in the research and studies. *

The contract includes Aalto University occupational healthcare. Aalto University provides excellent learning and development opportunities, and a commuter ticket benefit. Unisport offers versatile sports facilities and exercise services with a staff discount. *

We work in a hybrid way, and the primary workplace is Otaniemi, Espoo. The Otaniemi campus is a thriving and connected community of 100 nationalities. Life at the transformed campus is vibrant and filled with amazing architecture, calming nature, and a variety of cafes, restaurants, services and good connections along the metro and city train lines. See how the campus looks like on our virtual tour:

[url=https://virtualtour.aalto.fi/]https://virtualtour.aalto.fi/ *

In the first weeks, you will be assigned your own onboarding buddy who will help you get started with your work and studies at Aalto.

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Join us!

You can apply for min. 1 or max. 2 of the open positions in this call. You will be asked to prioritize your choices, using the position codes. You will find each position code after the name of the position in the list below - please remember your choices when you move forward with your application. To apply, please submit the following application materials through our aalto.fi recruitment site by 15th September 2024 Finnish time. Click "Apply now". We will start reviewing candidates immediately.

Please note: Aalto University's employees should apply for the position via the internal HR system Workday (Internal Jobs) by using their existing Workday user account (not via the external webpage for open positions). Aalto University's students and visitors should apply as external candidates with personal (not aalto) email.

All material should be submitted in English and a pdf-file. You can send in max. Five (5) documents up to 5M bit in size. Application material should include: *

Letter of motivation (max. one page). Please describe your background and future plans, and in particular, the reasons for selecting the project(s). *

A curriculum vitae and possible list of publications with complete study and employment history, contact details of referees from 2 senior academic people. We will contact your referees, if recommendation letters are required. (please see CV example

[url=https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Ftenk.fi%2Fsites%2Fdefault%2F06%2FTENK_CV_template_2020.docx&wdOrigin=BROWSELINK]TENK_CV_template_2020.docx (live.com)) *

A study transcript provided by the applicant's university that lists studies completed and grades achieved. *

A copy of the M.Sc. degree certificate or equivalent. (for doctoral study application, it will need to be officially translated into Finnish, English or Swedish). If the degree is still pending, then a plan for its completion must be provided. *

Plan for obtaining a certificate of English/Finnish/Swedish language knowledge for doctoral study application if the position is offered (in order to have it on time for application, see more from

[url=https://www.aalto.fi/en/doctoral-education/how-to-apply-for-doctoral-studies]https://www.aalto.fi/en/doctoral-education/how-to-apply-for-doctoral-studies)

We will go through applications, and we may invite suitable candidates to interview already during the application period. The positions will be filled as soon as suitable candidates are identified. Chosen candidates should apply for doctoral study right immediately after accepting the position.

Please find detailed descriptions of the open positions by research group below:

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POSITION 1:

Magneto-plasmonic metamaterials for ultrafast all-optical magnetic switching (Position code: VAN DIJKEN)

We are looking for a highly motivated doctoral student to work on multidisciplinary experiments at the boundary of optics/plasmonics and magnetism. The aim of the project is to induce ultrafast magnetic switching in tailored magneto-plasmonic metamaterials using femtosecond laser pulses, which is relevant for next-generation magnetic memory devices. As a doctoral student you will design and fabricate the magneto-plasmonic metamaterials using finite-difference time-domain simulations, state-of-the-art material deposition techniques, and advanced photo- and electron-beam lithography processing. Moreover, you will learn how to characterize the magnetic, plasmonic, and magneto-optical properties of the samples using a wide range of experimental techniques. The doctoral project is conducted in the Nanomagnetism and Spintronics group at the Department of Applied Physics of Aalto University. We closely collaborate with the University of Lorraine in France on all-optical magnetic switching. As a doctoral student you will be able to visit this institute for at least three months.

For more information, please contact Prof. Sebastiaan van Dijken,
[url=mailto:sebastiaan.van.dijken@aalto.fi]sebastiaan.van.dijken@aalto.fi

POSITION 2:

Organic Electronics (Position code: SOLDANO)

In this position, you will have the opportunity to conduct experimental research in both materials and device physics. The main research work will be carried out in the field of organic transistors and light-emitting devices, with a particular interest in the general understanding of the device properties as well as the overall development and improvement of the performances. In particular, organic light-emitting devices (transistors) are a rather yet largely unexplored device platform, holding tremendous potentials both in terms of fundamental studies as well as technological applications. Large efforts are expected to be devoted to study physical phenomena such as charge/field-effect transport and light emission/sensing, with a particular interest in new semiconductor and luminescent materials and material's interface. The work is expected to result in high-impact scientific publications and communications at national/international conferences. Doctoral training will include study of materials properties, device fabrication and electro-optical characterization, using facilities available in the Organic Electronics Lab and Aalto University facility (Micronova). More information can be found at [url=https://organicelectronics.aalto.fi/]https://organicelectronics.aalto.fi/.

For more information, please contact Prof. Caterina Soldano,
[url=mailto:caterina.soldano@aalto.fi]caterina.soldano@aalto.fi

Any questions?

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For additional information, kindly contact the Professors mentioned in the position descriptions.

Aalto University reserves the right to leave the positions open, extend the application period, reopen the application process, and consider candidates who have not submitted applications during the application period.

In any recruitment process related questions, please contact HR Partner Karoliina Walldén ([url=mailto:karoliina.wallden@aalto.fi]karoliina.wallden@aalto.fi).

Want to know more about us and your future colleagues?

You can watch these videos: [url=https://www.youtube.com/watch?v=5k_og_6zUJQ]Aalto University - Towards a better world, [url=https://www.youtube.com/watch?v=dUfEGVM-ZP8&feature=youtu.be]Aalto People , and [url=https://www.youtube.com/watch?v=ZK6pDWm1_CE]Shaping a Sustainable Future.

More about Aalto University:

[url=https://www.aalto.fi/en/open-positions]Aalto.fi

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twitter.com/aaltouniversity

Contact Information

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

Contact

Finland