

Professor, Sustainable large-scale implementation of wind
and solar power
Aalto University

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Posted Sep. 3, 2024, set to expire Jan. 3, 2025

Job Title	Professor, Sustainable large-scale implementation of wind and solar power
Department	T212 Mechanical Engineering
Institution	Aalto University , , Finland
Date Posted	Sep. 3, 2024
Application Deadline	Open until filled
Position Start Date	Available immediately
Job Categories	Professor
Academic Field(s)	Mechanical Engineering
Job Website	https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/Professor--Sustainable-large-scale-implementation-of-wind-and-solar-power_R39673

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 School of Engineering is one of the six schools of Aalto University. The main task of the School of Engineering is to renew technologies related to the technical industry and the built environment through scientific research, technological innovation and inspiring education. Our objective is to create

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new knowledge, information and solutions to serve the goals of sustainable development. Our research topics are highly relevant to the surrounding society, connecting theory with practice. Collaborative projects with the technological industry and the surrounding society have been a trademark for decades. Our research focus areas are Multidisciplinary Energy Technologies, Sustainable Built Environment, Marine and Arctic Technology, Mechanics and Materials and Systems Design and Production.

The Department of Mechanical Engineering at the Aalto University School of Engineering invites applications for

Assistant or Associate Professor in Sustainable Large-Scale Implementation of Wind and Solar Power (Tenure Track)

We are seeking outstanding individuals who have a strong background and broad understanding on the challenges and solutions of sustainable large-scale implementation of renewable energy systems, especially focusing on utility-scale wind and solar power and solar energy (excluding bioenergy). In the middle of the green energy transition, we need to actively work for pushing our current climate, food, water etc. systems back within their planetary boundaries, making it critical to consider the impacts large scale deployment of renewables has on, e.g., land use, biodiversity and critical material demand. This position does not encompass wind or solar PV material research or electrical engineering aspects of power generation, nor bioenergy research. Position also excludes research on fluid mechanics and CFD modeling. The competences for these excluded fields should come from the research partners and collaborators.

The candidate should have a strong background in large-scale wind power and renewable energy engineering applications to be able to work on actual engineering solutions that can minimize the impacts on nature and environment. Scientific fields that fit to the TT-position are wind and solar power plant engineering and design, combined with environmental assessment, spatial and temporal analysis, and sustainability analysis. Tools to be used are for example LCA methods, spatial and temporal analysis tools such as QGIS and different wind turbine siting and wind power plant design tools, and similarly for solar PV and hybrid renewable energy systems. Willingness to learn, and ability for close collaboration with multidisciplinary networks will be needed.

The focus of the position is in understanding how we can implement all the required renewable energy generation systems, to secure the needed reduction of CO₂ emissions, and at the same time, minimize the negative impacts on nature, societies and climate. What technical solutions are required and how they need to be implemented?

As a tenure-track faculty member, you are expected to complement the expertise of the current faculty

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by bringing new ideas and perspectives into our community. You are also expected to teach in our study programs with a typical teaching load of about three courses per year. The position will be filled at the Assistant and Associate Professor levels. The position will be located at the Aalto University Campus in Otaniemi, Espoo.

Your experience and ambitions

We are looking for applicants with *

A positive, solution-based “We can do it!” attitude. *

a doctorate in renewable energy technologies, especially on wind power and wind power deployment, combined with land-use, siting analysis (e.g., GIS) and/or environmental (LCA, biodiversity and nature impact) and societal (social acceptance) analysis competences and understanding their role in a system limited by the planetary boundaries and social foundation. *

a proven ability and passion to carry out high-quality research and publish in top venues of the discipline *

potential to attract research funding and build up your own research team *

an interest and capability to collaborate with industry *

already existing (or a proven ability to build) high-level multidisciplinary (including, e.g., engineering-ecology-social sciences-economics) international collaboration network *

motivation to teach at undergraduate and/or graduate levels

We offer *

an extremely active and motivated research group and inspiring working environment *

a competitive benefits package including access to health care *

start-up funding and grant writing support to help you establish your own team *

excellent multi-disciplinary collaboration possibilities within the university *

great future in one of the happiest, cleanest and safest countries in the world, with comprehensive social security system and free education up to university level

?Aalto tenure track

This position belongs to our tenure track system and will be filled to the assistant/associate professor level. The salary is based on Aalto University salary system, but you can also provide your own salary requests. Getting tenure and advancement on Aalto tenure track is based on an evaluation of your achievements and merits against the Aalto tenure track criteria. Please see the details about the evaluation criteria at [\[url=https://www.aalto.fi/services/tenure-track-evaluation-criteria\]](https://www.aalto.fi/services/tenure-track-evaluation-criteria)<https://www.aalto.fi/services/tenure-track-evaluation-criteria>, and work profile at [\[url=https://www.aalto.fi/en/tenure-track/tenure-track-career-path\]](https://www.aalto.fi/en/tenure-track/tenure-track-career-path)<https://www.aalto.fi/en/tenure-track/tenure-track-career-path>.

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Scientific environment

Department

The Department's main research areas besides energy technology are engineering design, engineering materials and digital production and marine and arctic technology. The Department provides education in bachelor, master's and doctoral programs. Currently, the department has about 30 professors together with lecturers, post-doctoral researchers, doctoral students, and technical staff. In total, the number of personnel is about 250. (See [[url=https://www.aalto.fi/en/department-of-mechanical-engineering](https://www.aalto.fi/en/department-of-mechanical-engineering)]<https://www.aalto.fi/en/department-of-mechanical-engineering>)

Research group

The position will be filled in the Energy Conversion and Systems research group of the Department of Mechanical Engineering. [[url=https://www.aalto.fi/en/department-of-mechanical-engineering/energy-conversion-and-systems](https://www.aalto.fi/en/department-of-mechanical-engineering/energy-conversion-and-systems)]<https://www.aalto.fi/en/department-of-mechanical-engineering/energy-conversion-and-systems>.

The group works on energy conversion technologies and energy systems research with focus on renewable energy, carbon neutrality and low environmental impact of energy technologies. We have an active team of 9 Tenure Track professors (will increase with this position to 11 by 2025), 4 Professors of Practice, 3 Lecturers, 15 Post-Docs, and more than 50 doctoral students focusing on various applications in energy conversion, including P2X2P applications, energy storage, sustainable and carbon free combustion applications, CCUS solutions, HVAC systems, optimization, energy systems and markets and advanced CFD methods with topics including clean combustion and two-phase flows.

The Energy Conversion and Systems Research Group collaborates extensively with industrial and academic partners in research projects and participates in many international collaboration projects. [[url=https://www.aalto.fi/en/news/joint-project-seeks-low-emission-industrial-solutions](https://www.aalto.fi/en/news/joint-project-seeks-low-emission-industrial-solutions)]<https://www.aalto.fi/en/news/joint-project-seeks-low-emission-industrial-solutions> [[url=https://www.aalto.fi/en/news/bjorn-savens-donation-to-aalto-university-makes-a-significant-contribution-to-hydrogen](https://www.aalto.fi/en/news/bjorn-savens-donation-to-aalto-university-makes-a-significant-contribution-to-hydrogen)]<https://www.aalto.fi/en/news/bjorn-savens-donation-to-aalto-university-makes-a-significant-contribution-to-hydrogen>, [[url=https://circularfuels.eu/](https://circularfuels.eu/)]<https://circularfuels.eu/>

The Energy conversion research group has an active role in offering several courses in energy engineering. Everyone in the group is participating both in teaching and in research. The research group is in charge of the Aalto wide Master's Programme Advanced Energy Solutions and an active partner Environmental Pathways for Sustainable Energy Systems Master's programs and Nordic5Tech's Innovative Sustainable Energy Engineering Master's Program. As a member of our

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team, you will also be an important member of our teaching community.

<https://www.aalto.fi/en/study-options/masters-programme-in-advanced-energy-solutions-sustainable-energy-conversion><https://www.aalto.fi/en/study-options/masters-programme-in-advanced-energy-solutions-sustainable-energy-conversion>.

How to apply

Please submit your application latest on 11.10.2024, through our recruiting system by using the [Apply!](#) link above. (If you are already working at Aalto, please apply via our internal system Workday [Find Jobs](#).)

Please include the following pdf documents in English: *

Motivation letter Curriculum vitae - Please use the <https://www.tenk.fi/en/template-researchers-curriculum-vitae> template (opens in new window) recommended by The Finnish Advisory Board on Research Integrity (TENK). *

Research portfolio - For instructions, visit https://www.aalto.fi/sites/g/files/flghsv161/files/2021-08/20210617%20Aug%20Aalto%20Tenure%20Track%20Policies%20and%20Procedures_ENG.pdf Policies and Procedures -document, page 24. *

Copies of the five most significant (recent, within 5 years) publications and justification for significance in these five publications and your role in them described *

Teaching portfolio - See https://www.aalto.fi/sites/g/files/flghsv161/files/2021-01/Teaching%20competence%20assessment_Guidelines_for_candidate_2020_Aalto%20University_FINAL.pdf portfolio guidelines for candidate (pdf)

If necessary, shortlist candidates will be asked for references; contact information.

General instructions for applicants including language requirements and guidelines for compiling the teaching portfolio and CV are at <https://www.aalto.fi/tenure-track/interested-in-joining-our-tenure-track><https://www.aalto.fi/tenure-track/interested-in-joining-our-tenure-track>

More information

If you wish to hear more about the position or us, please contact group leader Professor Mika Järvinen, mika.jarvinen@aalto.fi. In case you have questions related to the recruitment process, please contact HR Partner Anna-Maija Harju, anna-maija.harju@aalto.fi.

Aalto University reserves the right for justified reasons to leave the position open or to extend the application period.

About Aalto University, Helsinki and Finnish society

At Aalto, high-quality research, art, education and entrepreneurship are promoted hand in hand.

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Disciplinary excellence is combined with multidisciplinary activities, engaging both students and the local innovation ecosystem. Our main campus is quickly transforming into an open collaboration hub that encourages encounters between students, researchers, industry, startups and other partners. Aalto University was founded in 2010 as three leading Finnish universities, Helsinki University of Technology, the Helsinki School of Economics and the University of Art and Design Helsinki, were merged to strengthen Finland's innovative capability.

The greater Helsinki region is a world-class information technology complex, attracting leading scientists and researchers in various fields of electrical engineering. As a living and working environment, Finland consistently ranks high in quality of life, and Helsinki, the capital of Finland, is regularly ranked as one of the most livable cities in the world.

Contact Information

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

Contact

Finland