

DOCTORAL RESEARCHER IN INDOOR CLIMATE AND
AIR DISTRIBUTION
Aalto University

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Posted Mar. 26, 2024, set to expire Dec. 30, 2024

Job Title DOCTORAL RESEARCHER IN INDOOR CLIMATE
AND AIR DISTRIBUTION

Department T212 Mechanical Engineering

Institution Aalto University
, , Finland

Date Posted Mar. 26, 2024

Application Deadline Open until filled

Position Start Date Available immediately

Job Categories Graduate Student

Academic Field(s) Mechanical Engineering

Job Website https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/DOCTORAL-RESEARCHER-IN-INDOOR-CLIMATE-AND-AIR-DISTRIBUTION_R39147

Apply By Email

Job Description

Aalto University in Espoo Finland is a community of bold thinkers where science and art meet technology and business. We are committed to identifying and solving grand societal challenges and building an innovative future. Aalto has six schools with nearly 11 000 students and a staff of more than 4000, of which 400 are professors.

Aalto University School of Engineering, Department of Mechanical Engineering invites applications for

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The HVAC team under the Energy Conversion and System group

([url=https://www.aalto.fi/en/departement-of-mechanical-engineering/energy-conversion-and-systems]https://www.aalto.fi/en/departement-of-mechanical-engineering/energy-conversion-and-

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systems) is seeking a highly motivated and creative doctoral researcher who would undertake research in indoor climate of healthcare facilities.

General information on the Doctoral Network

The selected doctoral candidate (DC) will be part of the HumanIC Doctoral Network, a Horizon Europe project funded by Marie Skłodowska-Curie Actions Doctoral Networks (MSCA DN). The HumanIC network is composed by 8 universities, 2 hospitals and 9 companies/institutions to train early stage engineers and scientists to enable a new approach to the human-centric indoor climate in Healthcare Environments. Rather than the traditional approach of focusing solely on the building and its ventilation/heating systems, the network will develop new approaches to integrate the multi-dynamic interaction between contamination sources and airflow distribution systems with the clinical, patient and energy requirements of the hospital environment.

Through an ambitious research programme and a tailored training programme HumanIC will provide a new generation of scientists and engineers who understand the implications of these complex interfaces in future hospital design. In building the HumanIC consortium, we will actively promote healthcare environment engineering as an inclusive and diverse career option. HumanIC emphasizes cooperative research and includes international mobility and intersectoral secondments to maximize the career potential of all DCs.

Individual PhD project information

Host institution: Aalto University, Finland

Supervisory team: Prof. Risto Kosonen (PhD main supervisor, Aalto University), Prof. Anna Bogdan (co-supervisor, Warsaw Technical University), D.Sc. Simo Kilpeläinen (second co-supervisor, Aalto), and the representatives of Granlund company, Helsinki.

Enrolment in Doctoral School: [[url=https://www.aalto.fi/en/study-options/aalto-doctoral-programme-in-engineering?check_logged_in==1](https://www.aalto.fi/en/study-options/aalto-doctoral-programme-in-engineering?check_logged_in==1)] Doctoral Programme in Engineering, Aalto University

The positions should start in autumn 2024 and is intended for full-time work. The doctoral researcher will be granted a 3-year contract (with a probation period of 6 months). The successful applicant will have possibility to cooperate with world-class researchers, as well as to attend scientific conferences and meetings. Moreover, the research group provides strong scientific support and academic freedom, with possibilities for interdisciplinary collaboration, both internationally and within Aalto University. Please note that the applicants are not expected to apply to the Aalto doctoral programme at this point - only the successful candidate will do this at the next application window (but is expected to take up the position already before that).

PhD project description

The PhD project will investigate high performing ventilation and airflow distribution systems for different

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healthcare applications that optimize multiple criteria of energy efficiency, infection risk and thermal comfort. The project will also demonstrate methods how to improve persons' perception on indoor climate in hospital patient rooms using novel IoT control platform of bio-signals for microenvironment control. User-centric methods to control both local thermal environment and air distribution will be considered. Instead of adjusting room air temperature with thermostats and air distribution with CO₂ and temperature, the building technical system will be constantly reacting to human physiological signals like heart rate, skin temperature and skin moisture to maintain an optimized condition fit to thermal sensation and air quality locally close to persons.

Planned secondments: * Warsaw Technical University, Poland (3 Months): study of microenvironment involving patients; carry out complex experimental measurements; development of new thermal comfort models. * Granlund Oy, Helsinki Finland (3 Months): Design of ventilation systems for specific spaces such as operation rooms, isolation rooms, commission of ventilation systems.

Essential requirements * A master's degree in HVAC- technology, indoor climate and energy technology or in a related area. * Fluent written and verbal communication skills in English are required * The ability to work independently as part of a group in an international environment is essential. * Appreciated skills include air distribution, measurement methods of indoor climate and thermal comfort.

Other requirements * If you finish your master's degree in the spring of 2024, you are also welcome to apply (you have to complete the master before the date of the recruitment). * You have a keen interest in indoor climate of healthcare facilities and novel ventilation solutions. * You are ambitious, well organized, a team player, and have excellent communication skills. * You are proficient in English, both written and verbal. * You did not reside or carry out your main activity (work, studies, etc.) in Finland for more than 12 months in the 3 years immediately before the recruitment date. Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status are not taken into account. * You must be — at the date of recruitment — a doctoral candidate (i.e. not already in possession of a doctoral degree). * You have the ability to work independently and have a critical mindset. * You are a pro-active and motivated person, eager to participate in network-wide training events, international mobility, and public dissemination activities.

Salary

The selected candidate will receive a salary in accordance with the MSCA regulations for Doctoral Researchers. The exact (net) salary will be confirmed upon appointment and is dependent on local tax regulations and on the country correction coefficient (to allow for the difference in the cost of living in different EU Member States).

The salary paid to the recruited researcher consists of a living allowance and a mobility allowance (and a family allowance, if applicable). The employee's and the employer's mandatory charges,

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as well as tax, will be deducted from the gross salary (according to the local tax and employment regulations).

The guaranteed PhD funding is for 36 months (i.e., funding from the European Commission); additional one year funding is possible to apply from the School of Engineering of Aalto University. The additional one year funding is probably needed because the doctoral studies in Aalto normally take 4 years.

How to apply

To apply for the position, please submit your application electronically through our online recruitment system and provide the following documents: * a CV, describing at least education, employment history and relevant skills * academic certificates and transcripts * a personal statement outlining motivation, interest, and eligibility for the post (maximum two pages)

The deadline for applications is no later than 16th of April 2024, at 23:59 Finnish time (UTC +2). Possible interviews (via MS Teams) will take place during May.

Aalto University reserves the right for justified reasons to leave the position open, to extend the application period, and reopen the application process.

Further information

For more information on the positions, please contact Prof. Risto Kosonen, tel. +358 405027484 (email: risto.kosonen@aalto.fi). For questions related to the recruitment process, please contact HR Advisor Paula Thomsson-Levä (email: paula.thomsson-leva@aalto.fi).

The project descriptions, essential requirements and link to the positions on the university websites for all 11 PhD positions can be found via the website of HumanIC: <https://human-ic.eu/context/> Context - HumanIC (human-ic.eu)

Other information:

<https://cordis.europa.eu/project/id/101119726>

<https://marie-sklodowska-curie-actions.ec.europa.eu/actions/doctoral-networks>

www.aalto.fi/en/study-options/aalto-doctoral-programme-in-engineering

www.aalto.fi/en/department-of-mechanical-engineering/energy-conversion-and-systems

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Contact Information

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

Contact

Finland