

Doctoral Researcher in Characterization, aging and  
modelling of polymeric fire-stop materials  
Aalto University

Direct Link: <https://www.AcademicKeys.com/r?job=242758>

Downloaded On: Nov. 21, 2024 11:09pm

Posted Aug. 6, 2024, set to expire Dec. 30, 2024

**Job Title** Doctoral Researcher in Characterization, aging and  
modelling of polymeric fire-stop materials

**Department** T214 Civil Engineering

**Institution** Aalto University  
, , Finland

**Date Posted** Aug. 6, 2024

**Application Deadline** Open until filled

**Position Start Date** Available immediately

**Job Categories** Graduate Student

**Academic Field(s)** Civil Engineering

**Job Website** [https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/Doctoral-Researcher-in-Characterization--aging-and-modelling-of-polymeric-fire-stop-materials\\_R40360](https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/Doctoral-Researcher-in-Characterization--aging-and-modelling-of-polymeric-fire-stop-materials_R40360)

**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 and a staff of more than 4500, of which 400 are professors, working on our dynamic campus in Espoo, Greater Helsinki, Finland.

We believe that people from diverse backgrounds can together reach the best results. Diversity is part of who we are, so we warmly encourage qualified candidates from all backgrounds to apply, as we want to ensure the continued diversity and inclusiveness of our community. Aalto is committed to equal and transparent recruitment procedures.

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

We are located at Aalto University campus in Otaniemi, Espoo where several research institutions and organizations have their laboratories. The Department of Civil Engineering and School of Engineering have well-equipped research facilities and access to national scientific computing services.

Aalto University School of Engineering, Department of Civil Engineering invites applications for a Doctoral Researcher position in Characterization, aging and modelling of polymeric fire-stop materials.

Fire-stops are used in many industrial and residential buildings to ensure fire compartmentation within fire-resistant walls and floors with cable or pipe penetrations. Fire-stop materials range from cementitious, cast-in-place materials to functional polymers and modular systems that react and deform when heated. In the context of nuclear power plant fire safety, the aging of fire-stop materials is a concern when the working life of the operating plants is extended with tens of years. Numerical modelling capabilities are needed, when assessing the performance of fire-stops in non-tested applications.

The goals of the research are i) to develop analytical and numerical techniques for the evaluation of fire-stop performance in special applications that cannot be tested using standard fire-resistance furnaces, and ii) to estimate how much the performance deteriorates with age, by applying accelerated thermal aging and the numerical models developed. The research is funded by the Finnish research program on nuclear safety (SAFER2028) and Palosuojelurahasto.

The position will be filled as soon as a suitable candidate is found.

#### Research Group

The selected candidate will work under the supervision of Prof. Simo Hostikka as a part of the Fire Safety Engineering -research team: <https://blogs.aalto.fi/fire/>. Professor Jukka Niskanen (Polymer technology) from the School of Chemical Engineering will serve as a co-supervisor. The work is supported by laboratory personnel.

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The position mentioned above is within the domain of the Building Design and Construction research group in the Department of Civil Engineering; see [[url=https://www.aalto.fi/en/department-of-civil-engineering/performance-in-building-design-and-construction](https://www.aalto.fi/en/department-of-civil-engineering/performance-in-building-design-and-construction)]<https://www.aalto.fi/en/department-of-civil-engineering/performance-in-building-design-and-construction>. For more information on the research and teaching of the Department, please visit [[url=https://www.aalto.fi/en/department-of-civil-engineering](https://www.aalto.fi/en/department-of-civil-engineering)]<https://www.aalto.fi/en/department-of-civil-engineering>.

### Requirements: \*

We expect a MSc degree in chemistry, engineering, physics or other relevant field. \*

We look for demonstrated skills in analytical chemistry, thermodynamics and heat transfer. \*

Previous experience in the use and development of numerical methods is beneficial. \*

We appreciate excellent success in the previous studies, with Grade Point Average (GPA) of 4 or better in scale 1-5. \*

Excellent command of written and spoken English is mandatory.

The applicant for doctoral studies must satisfy the admission requirements of Aalto University, please see [[url=https://www.aalto.fi/en/study-options/aalto-doctoral-programme-in-engineering#11-how-to-apply-](https://www.aalto.fi/en/study-options/aalto-doctoral-programme-in-engineering#11-how-to-apply-)]<https://www.aalto.fi/en/study-options/aalto-doctoral-programme-in-engineering#11-how-to-apply->. Do 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.

### Financing, duration, and salary

Aalto University applies the salary system of Finnish universities. Currently, the starting salary for doctoral students is 2720 € per month and is increased with the progress towards the doctoral degree to over 3400€ per month. The position is contract-based. The financing is subject to the availability of funding.

The doctoral project lasts four years and consists of writing at minimum three international journal articles and a summarizing thesis. In addition, 40 ECTS worth of studies are part of the degree. The candidate will have work contract with the Civil Engineering Department of Aalto University during the project. Contract is first made for two years, and then continued for another two years upon successful progress of the studies and research. There will be a compulsory midterm review which will be completed during the second year. More information: [[url=https://www.aalto.fi/en/programmes/aalto-doctoral-programme-in-engineering/midterm-review-of-doctoral-studies-eng](https://www.aalto.fi/en/programmes/aalto-doctoral-programme-in-engineering/midterm-review-of-doctoral-studies-eng)]<https://www.aalto.fi/en/programmes/aalto-doctoral-programme-in-engineering/midterm-review-of-doctoral-studies-eng>.

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The annual workload of research and teaching staff at Aalto University is currently 1612 hours. In addition to the salary, the contract includes occupational health care. Finland offers a safe and healthy environment for living. Excellent state-subsidized services include affordable daycare, health care, and free schools, ranked among the best in the world. According to many qualities of life indicators, Finland is among the best countries in the world, including being six years in a row the happiest country in the world (UN study 2024). We are one of the world's most reliable and stable nations with a high level of safety. With increased investments in R&D, a strong innovation culture, open data and an advanced state of digitalization, we are a nation of innovation and entrepreneurship. The Nordic values of equality and cooperation are rooted deeply in our society. Gender equality, flexibility and low hierarchy are at the core of our Nordic working environment.

For more information

Additional information regarding the position may be obtained from Simo Hostikka ([\[url=mailto:simo.hostikka@aalto.fi\]](mailto:simo.hostikka@aalto.fi)simo.hostikka@aalto.fi). In questions related to applying and recruitment process, please contact HR Generalist Jenna Koskenniemi ([\[url=mailto:jenna.koskenniemi@aalto.fi\]](mailto:jenna.koskenniemi@aalto.fi)jenna.koskenniemi@aalto.fi).

How to apply

The open applications for the doctoral student position are to be submitted through the eRecruitment system Workday via the link "Apply now!" no later than September 6, 2024.

The application for the position should contain: \*

A 1-page cover letter motivating the interest for the position \*

A detailed Curriculum Vitae including degrees and publications; list \*

Transcript(s) with grades (in the original language and English) \*

English language proficiency proof, as specified in the Admission Requirements \*

Certified copy of the master's diploma. At the application stage, certification is not required; note that its English translation must accompany the certificate in its original language

All material should be submitted in English (excl. documents required on original language). The application documentation will not be returned.

Please note: Aalto University's employees and visitors should apply for the position via our internal system Workday -&gt; find jobs (not external aalto.fi webpage on open positions) by using their existing Workday user account.

Shortlisted candidates will be requested to prepare a short presentation for the interview. The

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successful candidate will be required to provide all the necessary application documents.

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

### **Contact Information**

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

### **Contact**

Finland