

Doctoral or Postdoctoral Researcher in Computational
Structural/Solid Mechanics
Aalto University

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Downloaded On: Aug. 19, 2025 8:00pm

Posted Jul. 3, 2025, set to expire Dec. 31, 2025

Job Title Doctoral or Postdoctoral Researcher in Computational
Structural/Solid Mechanics
Department T214 Civil Engineering
Institution Aalto University
, , Finland

Date Posted Jul. 3, 2025

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-or-Postdoctoral-Researcher-in-Computational-Structural-Solid-Mechanics_R43677-4

Apply By Email

Job Description

Aalto University is where science and art meet technology and business. We shape a sustainable future by sparking the game changers of tomorrow and by creating novel solutions to major global challenges. Our community is made up of 13,000 students, 400 professors and close to 4 500 other staff members working on our vibrant campus in Espoo, Greater Helsinki, Finland. 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 an international unit with nearly 70 talented professors and 3400 full-time students. Currently, the Department of Civil Engineering has 20 professors together with lecturers, staff scientist, post-doctoral researchers, doctoral students, and technical staff. In total, the number of departmental personnel is over 100.

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The Department of Civil Engineering is looking for a highly qualified, talented, and motivated individual with an enthusiastic attitude toward high-quality research to work as a full-time Doctoral Researcher or Postdoctoral Researcher in Computational Structural/Solid Mechanics. The candidate's research activities will focus on the development of a computational setup for fiber-enriched materials design within the Processing-Structure-Properties-Performance (PSPP) framework under the joint supervision of Assistant Professor Sergei Khakalo and Professor of Practice Jouni Punkki.

Job description

Research activities will involve computational methods relying on physics-based continuum models to assess the mechanical, thermal, and acoustical performance of fiber-enriched materials such as concrete and plastic. One of the objectives will be to correlate fiber characteristics, e.g., fiber properties, orientation, aspect ratio, concentration, distribution, fiber-matrix and fiber-fiber adhesion/cohesion characteristics, with materials performance in applications. As 3D printing will be utilized as one of the manufacturing options, the focus will also be on simulating the printing process, which requires, e.g., the definition of a proper material model that adequately describes rheological aspects and the adjustment of extrusion-related parameters.

Qualification requirements

The selected candidate should have a master's degree in a related field: e.g., civil engineering, mechanical engineering, computational materials science, or applied mathematics. The candidate should have excellent grades from the bachelor and master level courses in mathematics and mechanics as well as appropriate skills in programming and finite element analysis. Proficiency in written and spoken English are required as well.

Note for Postdoctoral Researcher position applicants: the selected candidate should have a doctoral degree in a related field as well.

Note for Doctoral Researcher position applicants: experience in co-authoring scientific articles in high-quality journals is not a necessary requirement but an advantage. For the candidate qualified for the position, an official application process for doctoral studies will be accomplished. Hence, before submitting his/her application the candidate should ensure that the corresponding formal requirements are fulfilled:

[url=<https://www.aalto.fi/en/doctoral-education/how-to-apply-for-doctoral-studies#5-general-eligibility-and-academic-evaluation>]

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What we offer

Aalto University offers excellent learning and development opportunities, provides an inspiring and supportive working environment, and a diverse professional community to work with. By joining our group, you would get the possibility to develop multidisciplinary research skills and be engaged in collaboration with other research groups in Aalto and abroad. Traveling with research visits to leading research groups outside Finland will provide knowledge and experience exchange and help to establish long-term international relationships.

Besides conducting high-quality scientific research, you will also get a unique opportunity to develop your supervising and teaching skills, e.g., by instructing graduate and undergraduate students as well as acting as a teaching assistant for some of the department courses.

For Doctoral Researcher position, the doctoral studies at Aalto University take approximately 4 years. The candidate will be offered a two-year full-time contract with a two-year extension after passing the midterm review. The annual total workload of research and teaching staff at Aalto University is 1612 hours. The starting (gross) salary for the position is about 2900 €/month and will increase with responsibilities and performance over time. The employment contract includes occupational health care, and Finland has a comprehensive social security system.

For Postdoctoral Researcher position, the employment relationship is full-time for a period of 2 years. The annual total workload of research and teaching staff at Aalto University is 1612 hours. The starting (gross) salary for the position is about 4000 €/month and will increase with responsibilities and performance over time. The employment contract includes occupational health care, and Finland has a comprehensive social security system.

How to apply

To apply for the position, please submit your application electronically through our online recruitment system and provide the following documents in English:

For Doctoral Researcher position applicants: *

Motivation letter - including contact information (max. 1 page) *

Curriculum Vitae - including publications if any and contact information for at least one reference (max.

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3 pages) *

Master's degree certificate - including a translation to English (if the originals are not in English, Finnish or Swedish) *

Transcripts of records - including both bachelor and master level studies *

Description of MSc thesis project (max. 1 page)

For Postdoctoral Researcher position applicants: *

Motivation letter - including contact information (max. 2 pages) *

Curriculum Vitae - including contact information for at least one reference (max. 3 pages) *

List of publications - please highlight publications where you were the main author (i.e. the person who did most of the research and the writing)

These documents (written in English) must be combined, in the given order, into a single PDF file (named 'lastname_firstname_application.pdf') and attached to the online application. The submission deadline is August 8, 2025, at 23:59 Finnish time. The position will be filled as soon as a suitable candidate is identified.

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.

Note: Aalto University's employees and visitors should apply for the position via the internal HR system Workday (Internal Jobs -> Find Jobs) by using their existing Workday user account (not via the external webpage for open positions).

For more information

For additional information, please contact Assistant Professor Sergei Khakalo via email ([url=mailto:sergei.khakalo@aalto.fi]sergei.khakalo@aalto.fi) with the subject "PhD/Postdoc position in Computational Structural/Solid Mechanics". In questions related to the recruitment process, please contact our HR unit via [url=mailto:hr-eng@aalto.fi]hr-eng@aalto.fi.

More about living in Finland: [url=https://www.aalto.fi/en/careers-at-aalto/living-in-finland]https://www.aalto.fi/en/careers-at-aalto/living-in-finland

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Contact Information

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

Contact

Finland