

Postdoctoral researcher, the development of bio-based
processes specializing in process design and ex-ante
analysis
Aalto University

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Posted Jun. 13, 2025, set to expire Dec. 31, 2025

Job Title Postdoctoral researcher, the development of bio-based
processes specializing in process design and ex-ante
analysis

Department T107 Bioproducts and Biosystems

Institution Aalto University
, , Finland

Date Posted Jun. 13, 2025

Application Deadline Open until filled

Position Start Date Available immediately

Job Categories Graduate Student

Academic Field(s) Chemical/Petroleum
Bioengineering (all Bio-related fields)

Job Website https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/Postdoctoral-researcher--the-development-of-bio-based-processes-specializing-in-process-design-and-ex-ante-analysis_R43550

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 more than 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.

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The School of Chemical Engineering is one of the six schools of Aalto University. It combines natural sciences and engineering in a unique way.

We are now looking for a

Postdoctoral researcher in the field of the development of bio-based processes specializing in process design and ex-ante analysis

The postdoctoral researcher will work as expert in process design and modeling in at least two projects related to scale up and optimization of biomass valorization processes from wood and agriculture feedstocks for textiles and packaging applications. The portfolio of projects under the Sustainable Bioproducts Innovation research group provides opportunity for supporting several high impact publications.

Your responsibility and goals *

Develop and validate and optimize Aspen simulations related to bio-based processes with experimental data from lab/pilot-scale systems. *

Build mentoring skills by helping and supervising younger researchers. *

Lead and write peer-reviewed articles for high impact journals. *

Participate in events, give expert talks, support in teaching and workshops. *

Network with scientists and industry to support your research as well as the development of new research proposals. *

Grant reporting, managing and monitoring. *

Work with researchers, and industry partners to gather data and align simulations with practical needs. *

Identify gaps in existing bio-process models and propose solutions.

The postdoctoral researcher will be helping the PI and experts in managing projects, supervising students, funding reporting, gathering data coming from literatures and the industry partners to assess the sustainability of proposed concepts. The position is available immediately.

Your network, project and team

The position is open to the [url=https://research.aalto.fi/en/persons/luana-dessbesell]Sustainable Bioproduct Innovations group headed by Prof. Luana Dessbesell, a highly multidisciplinary team seeking to support the development of truly sustainable bioproducts innovations. If you see yourself wondering what is and what isn't sustainable, please apply and join us. We are working with hard-science evidence to help speed up the development of solutions that can mitigate climate change. The

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research group is about 16 researchers, we care about each other and are people centered. We believe that we can only deliver excellence if we are doing well.

The [url=https://www.aalto.fi/en/departments/bioproducts-and-biosystems]Department of Bioproducts and Biosystems (Bio2) is one of the three departments in the School of Chemical Engineering at Aalto University, has an internationally leading reputation in basic and applied research for the development of advanced materials from natural resources. It is one of the leading European research and higher education institutions in the field of sustainable chemistry and engineering based on the utilization of renewable resources. Bio2 aims to contribute to the development of novel solutions to move towards sustainable primary production and processing systems that can produce materials with fewer inputs, less environmental impact and reduced greenhouse gas emissions. Within bioscience, the department has research in bioprocess technology, molecular biotechnology, enzyme technology, metabolic engineering, synthetic biology, biomolecular, and biohybrid materials. Other strengths of the department include sustainable materials and products based on lignocellulose, ranging from nanomaterials to novel cellulose-based textiles.

Your experience and ambitions

The candidate is expected to have: *

Ph.D. in Chemical Engineering, Biosystems/Bioprocess engineering, Process Engineering, or a related field (completed within past five years). *

Expertise in Aspen One® software for process simulations, preferable to have a background in modelling on Aspen Plus focusing on solids/ bio-based process modelling. *

Strong background in thermodynamics, reaction engineering, and process design. *

Ability to perform mass/energy balances, calculate costs to identify bottlenecks and propose design changes to improve economics. *

Excellent communication skills (written and spoken English) and ability to collaborate with industrial experts.

Nice to have: *

Proficiency in programming languages (Python, MATLAB, or similar software) for data analysis/model automation. *

Prior industrial collaboration or scale-up project experience. *

Experience in conducting Life Cycle Assessments and/or Techno Economic Analysis.

What we offer

The postdoctoral researcher position will be filled for two years. The expected starting salary of a

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postdoctoral researcher is approximately 3900-4110 EUR/month depending on experience.

We work in Otaniemi, Espoo. The Otaniemi campus is a thriving and connected community of 100 nationalities, 13 000 students and 4 500 employees. 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 line.

Ready to apply?

If you want to join our community, please submit your application through our online recruitment system no later than 30.07.2025 using the link on Aalto University's webpage ("Apply now"). If you are an Aalto employee, please apply via Workday system (internal jobs). The submissions will be checked as they arrive.

To apply, please include the following documents in English and as a single pdf document: *

- 1-page maximum motivation letter specific to this project with the description of previous relevant research experience *

- CV with a list of publications and the title and date of your doctoral/PhD thesis *

- List of references that we may contact.

The position will be filled when a suitable candidate is found.

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.

Read more about working at Aalto: [url=https://www.aalto.fi/en/careers-at-aalto]https://www.aalto.fi/en/careers-at-aalto

Check out our new virtual campus experience: [url=https://virtualtour.aalto.fi/]https://virtualtour.aalto.fi

For further information about this position, please contact Prof. Luana Dessbesell
luana.dessbesell(at)aalto.fi

About Finland

Finland is a great place for living with or without family - it is a safe, politically stable, and well-

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organized Nordic society. Finland is consistently ranked high in quality of life and was just listed again as the happiest country in the world: [url=https://worldhappiness.report/news/its-a-three-peat-finland-keeps-top-spot-as-happiest-country-in-world/]https://worldhappiness.report/news/its-a-three-peat-finland-keeps-top-spot-as-happiest-country-in-world/. For more information about living in Finland: [url=https://www.aalto.fi/en/careers-at-aalto/for-international-staff]For international staff | Aalto University

Aalto University reserves the right for justified reasons to leave the position open, to extend the application period, and to consider candidates who have not submitted applications during the application period.

Contact Information

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

Contact

Finland