

Doctoral Researcher in field of biomass chemistry
Aalto University

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Posted Sep. 27, 2024, set to expire Jan. 27, 2025

Job Title	Doctoral Researcher in field of biomass chemistry
Department	T107 Bioproducts and Biosystems
Institution	Aalto University , , Finland
Date Posted	Sep. 27, 2024
Application Deadline	Open until filled
Position Start Date	Available immediately
Job Categories	Graduate Student
Academic Field(s)	Chemistry - General
Job Website	https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/Doctoral-Researcher-in-field-of-biomass-chemistry_R40994

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.

Circular Materials Bioeconomy Network (CIMANET) is an interdisciplinary doctoral education network to support the renewal of the bio-based industry through new sustainable materials and processes. CIMANET is part of the doctoral education pilot program established by Finland's Ministry of Education and Culture, providing scientific and technological competences to promote sustainable growth. It

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strengthens the knowledge base required to enhance the Finnish forest and bio-based industry with novel solutions unveiling the full potential of biomass. CIMANET consists of nine universities: Aalto University, Hanken School of Economics, LUT University, Tampere University, University of Helsinki, University of Jyväskylä, University of Oulu, University of Turku, and Åbo Akademi University.

CIMANET operates in close collaboration with the industry, research organizations, as well as other stakeholders to create economic and societal impact by addressing the major challenges of our century: resource sufficiency, access to clean water, and climate change. CIMANET has started in 2024 and will provide altogether 67 doctoral researchers funding for three years. Check out all the open positions at the [[url=https://www.aalto.fi/en/doctoral-education-pilot/cimanet-doctoral-education-pilot](https://www.aalto.fi/en/doctoral-education-pilot/cimanet-doctoral-education-pilot)]CIMANET pilot website.

We are now looking for a

Doctoral Researcher in field of biomass chemistry

We are now looking for a doctoral researcher to join the Circular Biobased Materials group at Aalto University. In this position you will have a chance to make an impact by upcycling forestry side streams (bark) into advanced packaging materials, as well as increase the overall yield of forestry products. You will use fundamental aspects of biomass chemistry, analytical methods, plant structures, and fibre science to develop methods to extract composite fibres from bark biomass. The work is done in close collaboration with an industrial partner.

Scientific environment

The Circular Biobased Materials group ([url=http://www.aalto.fi/en/department-of-bioproducts-and-biosystems/circular-biobased-materials](http://www.aalto.fi/en/department-of-bioproducts-and-biosystems/circular-biobased-materials)) is dedicated to advancing sustainable solutions for materials development, production, and utilization. Our primary focus lies in harnessing the potential of non-utilized biobased resources to create materials that adhere to the principles of circular and bioeconomy. We seek strategies to better convert biobased precursors into materials, while considering the best scenario for their end-of-life.

The work will be done in close collaboration with Prof. Monika Österberg and the Bioproducts Chemistry research group [[url=https://www.aalto.fi/en/department-of-bioproducts-and-biosystems/bioproduct-chemistry](https://www.aalto.fi/en/department-of-bioproducts-and-biosystems/bioproduct-chemistry)]. The Bioproducts Chemistry group is dedicated to replacing fossil-oil based materials by renewable biomaterials from natural resources, such as forest biomass. We

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conduct interdisciplinary research on bio-based material science and surface chemistry of lignocellulosics. Efforts are laid on finding novel application possibilities for the main plant polymers; cellulose, lignin and hemicellulose. Through the two groups you will have access to a broad network across Europe and the Americas.

Aalto University has excellent research facilities, being part of major national research infrastructures such as the Bioeconomy (bioeconomyinfra.fi) and Raw Materials (rami-firi.fi) Research Infrastructure, as well as a top-notch Nanomicroscopy Center (<http://nmc.aalto.fi/en/>)

In the first weeks, you will be assigned your own onboarding buddy who will help you get started.

Your role and goals

You will develop processes to extract functional cellulosic fibres from bark biomass, methods to analyse fibre quality, and lightweight materials. You will become an expert in biomass refining and fibre-based materials. For that, you will learn fundamental aspects on chemistry and structure of biomass and their influence on extraction processes. You will become an expert in fibre properties and use, which is extremely relevant for the materials of the future bioeconomy. Nevertheless, you will use several chemical analytical techniques, including GPC, NMR, spectroscopies, as well as mechanical characterization of fibres and products, rheology, and many more.

Your experience and ambitions *

Experience of working in laboratory environment, interest to perform your own experiments and analyse your results. *

Excellent study track records. *

Experience (or interest) with collaborative and multidisciplinary work. *

Passionate about applied science. *

General curiosity to understand fundamental aspects related to applications.

An applicant must have completed by 31 December 2024 or preferably earlier (to start employment on 1 January 2025) *

a master's degree awarded by a university, or *

a study programme that in the awarding country gives eligibility for doctoral level studies

in chemical engineering, chemistry, materials science, or a closely related field. Preferably with MSc in physical chemistry and/or nanomaterials, with knowledge about lignocellulosics. A good command of English is required, Finnish language is not.

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Applicants must fulfil the admission criteria of the Aalto Doctoral Programme and, if chosen for a position, apply for, obtain, and accept the right to pursue doctoral studies at Aalto University. For more information on the general requirements and the application process for doctoral studies, please visit [\[url=https://www.aalto.fi/en/doctoral-education/how-to-apply-for-doctoral-studies.\]https://www.aalto.fi/en/doctoral-education/how-to-apply-for-doctoral-studies.](https://www.aalto.fi/en/doctoral-education/how-to-apply-for-doctoral-studies)

What we offer *

Opportunity to work in a dynamic community of world-class researchers and professionals where students are rigorously selected and highly motivated. This leads to an exceptionally interactive and intellectually challenging atmosphere at Aalto. *

We have a flexible modern work culture. We value the balance and well-being of work and leisure in all aspects of life. *

We offer you an interesting job in an inspiring work environment. You will be able to work in a community where we promote socially significant goals in science and education. We will familiarize you with your tasks and you will be part of a nice and competent team that will provide you with support for your work tasks also in the future. We encourage and offer opportunities for continuous development of your own expertise. *

The expected starting date in the position is on 1st January 2025. Presence in Finland for the duration of the contract is compulsory. *

The employment contract will be made for three years with the funding from the Finnish Ministry of Education and Culture. The contract includes a prerequisite to apply, receive and accept doctoral study right within the probation period of the first 6 months. *

The annual workload of research and teaching staff at Aalto University is 1612 hours. *

Aalto University follows the salary system of Finnish universities. The starting salary is 3000 €/month (gross), and it increases as the Doctoral Researcher progresses in the research and studies. *

The contract includes Aalto University's occupational healthcare. Aalto University provides excellent learning and development opportunities, and a commuter ticket benefit. Unisport offers versatile sports facilities and exercise services with a staff discount. *

We work in a hybrid way, and the primary workplace is Otaniemi, Espoo. The Otaniemi campus is a thriving and connected community of 100 nationalities. 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 and city train lines. See how the campus looks like on our virtual tour: [\[url=https://virtualltour.aalto.fi/\]https://virtualltour.aalto.fi/](https://virtualltour.aalto.fi/)

Join us!

To apply, please submit the following application materials through our [aalto.fi](https://www.aalto.fi) recruitment site by Monday 28 October 2024 Finnish time. Click "Apply now".

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Please note: Aalto University's employees should apply for the position via internal HR system Workday (Internal Jobs) by using their existing Workday user account (not via the external webpage for open positions). Aalto University's students and visitors should apply as external candidates with personal (not Aalto) email.

All material should be submitted in English and in a pdf-file. Application material should include:

1. Letter of motivation (max. one page). Please describe your background and future plans, and in particular the reasons for applying for this project.
2. A curriculum vitae and possible list of publications with complete study and employment history, contact details of referees from 2 senior academic people. We will contact your referees, if recommendation letters are required. (please see CV example [[https://www.aalto.fi/en/doctoral-education/how-to-apply-for-doctoral-studies](https://view.officeapps.live.com/op/view.aspx?src==https%3A%2F%2Ftenk.fi%2Fsites%2Fdefault%2F06%2FTENK_CV_template_2020.docx&wdOrigin==BROWSELINK]TENK_CV_template_2020.docx (live.com)))3. A study transcript provided by the applicant's university that lists studies completed and grades achieved.4. A copy of the M.Sc. degree certificate or equivalent (for doctoral study application it will need to be officially translated into Finnish, English or Swedish). If the degree is still pending, then a plan for its completion must be provided.5. Plan for obtaining certificate of English/Finnish/Swedish language knowledge for doctoral study application if position is offered (in order to have it on time for application, see more from [<a href=)])

We will go through applications, and we may invite suitable candidates to interview already during the application period. The position will be filled as soon as a suitable candidate is identified. The chosen candidate should apply for doctoral study right immediately after accepting the position.

Any questions?

For additional information, kindly contact Senior Scientist Bruno Mattos ([bruno.mattos\(at\)aalto.fi](mailto:bruno.mattos@aalto.fi)). Aalto University reserves the right to leave the position open, extend the application period, reopen the application process, and consider candidates who have not submitted applications during the application period.

For questions about applying, please contact HR Partner Noora Katisko, who can be reached by e-mail at [firstname.lastname\(at\)aalto.fi](mailto:firstname.lastname@aalto.fi).

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Want to know more about us and your future colleagues?

You can watch these videos: [\[url=https://www.youtube.com/watch?v==5k_og_6zUJQ\]](https://www.youtube.com/watch?v==5k_og_6zUJQ)Aalto University - Towards a better world, [\[url=https://www.youtube.com/watch?v==dUfEGVM-ZP8&feature==youtu.be\]](https://www.youtube.com/watch?v==dUfEGVM-ZP8&feature==youtu.be)Aalto People , and [\[url=https://www.youtube.com/watch?v==ZK6pDWm1_CE\]](https://www.youtube.com/watch?v==ZK6pDWm1_CE)Shaping a Sustainable Future.

For more information about living in Finland: [\[url=https://www.aalto.fi/en/careers-at-aalto/for-international-staff\]](https://www.aalto.fi/en/careers-at-aalto/for-international-staff)<https://www.aalto.fi/en/careers-at-aalto/for-international-staff>

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

About Finland

Finland is a great place for living with or without family - it is a safe, politically stable and well-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/)<https://worldhappiness.report/news/its-a-three-peat-finland-keeps-top-spot-as-happiest-country-in-world/>. For more information about living in Finland: [\[url=https://www.aalto.fi/en/careers-at-aalto/living-in-finland\]](https://www.aalto.fi/en/careers-at-aalto/living-in-finland)<https://www.aalto.fi/en/careers-at-aalto/living-in-finland>

Contact Information

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

Contact

Finland