

Doctoral researcher in Global Hydrogen Economy Aalto University

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Posted Sep. 19, 2024, set to expire Jan. 19, 2025

Job Title Doctoral researcher in Global Hydrogen Economy
Department T106 Chemical and Metallurgical Eng
Institution Aalto University
, , Finland

Date Posted Sep. 19, 2024

Application Deadline Open until filled
Position Start Date Available immediately

Job Categories Graduate Student

Academic Field(s) Material/Metallurgy
Chemical/Petroleum

Job Website https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/Doctoral-researcher-in-Global-Hydrogen-Economy_R40908

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.

The Sustainable Systems research group in the [url=https://www.aalto.fi/en/department-of-chemical-and-metallurgical-engineering/polymer-synthesis-technology]Department of Chemical and Metallurgical Engineering is now looking for a motivated

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Are you passionate about advancing renewable energy technologies? Do you want to contribute to cutting-edge research that will shape the future of sustainable energy?

As a Doctoral researcher in our group, you will have the opportunity to work on impactful and innovative projects aimed at answering critical questions such as: * Where should green hydrogen production plants be located around the world to maximize cost-effectiveness? * How should green hydrogen be delivered to markets efficiently, considering geographical and economic constraints? * How can the entire green hydrogen supply chain—from production (Power-to-Hydrogen), storage, and pretreatment (liquid hydrogen technologies) to transportation and end-use—be optimized? * What are the most sustainable strategies for Hydrogen-to-X (H2X) processes that can transform green hydrogen into valuable products?

Your role and goals

You will be responsible for conducting research in the global hydrogen economy, with a specific focus on developing and optimizing sustainable hydrogen systems. Key tasks and responsibilities include: * Performing conceptual process design and process synthesis using superstructure optimization techniques to address global hydrogen economy challenges. * Carrying out techno-economic analysis (TEA) and life cycle assessment (LCA) to evaluate the economic feasibility and sustainability of hydrogen supply chains. * Collaborating with team members and external partners to achieve the group's research objectives. * Presenting research findings at international conferences and publishing results in high-impact, peer-reviewed journals.

To support your research, you will have access to our comprehensive model library for hydrogen systems and sustainability topics.

Your network and team

This position will be based in the Sustainable Systems group, which focuses on developing models, algorithms, and computer-aided tools to explore circular and sustainable solutions for renewable energy systems, carbon capture and utilization, food production processes, supply chain optimization, and emerging technologies.

You will be supervised by Prof. Rofice Dickson and work closely with fellow PhD students, postdocs, and external stakeholders from industry and academia.

The unique competitive edge of the [url=https://www.aalto.fi/en/node/5271]Department of Chemical and Metallurgical Engineering in the School of Chemical Engineering is based on sustainable utilization of raw materials, designing more efficient processes and developing new materials and products. Our department's areas of expertise enable sustainable future with high performance

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products and processes in circular economy and bioeconomy. The department is in a key position in research of chemical engineering, materials technology, metals processing, efficient energy technologies and digitalization of these. Our core competences include unit operations and processes in chemical engineering, hydro- and pyro-metallurgy, catalyst and polymeric materials, novel catalytic process, process control and process systems engineering.

Your experience and ambitions

We are seeking highly motivated candidates with a strong background in process systems engineering, energy systems, and sustainability analysis. The ideal candidate has: * Experience with process simulators such as Aspen Plus, Aspen Hysys, or similar packages * Experience using techno-economic analysis and LCA methodologies * Experience with LCA software and databases such as SimaPro or OpenLCA * Interest in renewable energy technologies, sustainability, and optimization * Proficiency in at least one programming language (Python, GAMS, Matlab, etc.) is considered an advantage but is not mandatory * Master's degree in chemical engineering or a closely related field.

What we offer

The starting date is February 1, 2025, or as mutually agreed. The first employment contract is made for one year, during which you will apply for the study right in doctoral studies at Aalto University School of Chemical Engineering. Please check the student information and admission criteria at [\[url=https://www.aalto.fi/en/study-options/aalto-doctoral-programme-in-chemical-engineering\]](https://www.aalto.fi/en/study-options/aalto-doctoral-programme-in-chemical-engineering)<https://www.aalto.fi/en/study-options/aalto-doctoral-programme-in-chemical-engineering>. Please pay attention to the mandatory skill level in English. Doctoral studies at Aalto University take approximately four years.

The starting salary for a doctoral researcher is 3000 EUR/month, and will increase over time according to the salary system of Aalto University.

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, 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 recently opened metro line.

Join us!

If you want to join our community, please submit your application no later than 15.10.2024, in English through our online recruitment system by using the link ([Apply Now](#)) on Aalto University's web page. Please note that we only accept applications via Workday.

Please including the following attachments mentioned below, in English: * A cover letter describing

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your motivation for pursuing this PhD position * A CV, including your academic achievements, possible list of publications, and any relevant work or research experience * Contact details of at least two references * Copies of your academic transcripts and degrees

Please note that the position will be filled as soon as a suitable candidate is identified.

For additional information, kindly contact Prof. Rofice Dickson at rofica.dickson@aalto.fi.

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://virtualltour.aalto.fi/]https://virtualltour.aalto.fi/

Please note: Aalto University's employees should apply for the position via our internal HR system Workday (Internal Jobs) by using their existing Workday user account (not via the external webpage for open positions).

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/. 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 .

Contact Information

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

Contact

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