

# Postdoc

## In < Atomistic simulation for Eco-Friendly Metal Organic Frameworks and Water Processes >

### Short Description

Are you inspired by how atomistic and molecular simulations can drive the development of new materials for sustainable applications? In this project you will work on combining and developing multiscale simulation methods and machine learning techniques applied to eco-friendly multifunctional nanomaterials with the aim of designing a smart process for water harvesting from air and water distribution based on eco-friendly MOFs.

### Job Description

The climate change prospects point towards a general rise in temperature, with more and longer periods of higher temperatures. Furthermore, changes in precipitation and distribution of water are expected in many regions of Europe. On the other hand, water resources are more and more limited and often of low quality, fragile, and unevenly distributed in space and time. In a collaborative project with several research centers in Europe we plan to develop a smart water distribution system to optimize the water distribution and do real-time prediction of the water demand in accordance with the local requirements. This position is created to approach this challenge from the simulation point of view at the nanoscale. In a collaborative European project, we will develop water adsorption technology to produce water from the air moisture through eco-friendly adsorbent and energy integrated process design. To this aim we will need to study the interaction of water with the material and how the stability of the material is affected by it.

You can find more information about our research here:

<https://www.tue.nl/en/research/research-groups/materials-simulation-modelling>

### Job Requirements

- Motivated researcher, with a PhD in < computational materials/ atomistic and molecular simulation > research, or a comparable domain.
- Strong knowledge in DFT calculations
- Experience with classical simulations is desirable
- Knowledge in Linux environment, bash scripting, python programming (or alternative languages)
- Ability to conduct high quality academic research, reflected in demonstratable outputs.
- A team player who enjoys coaching PhD and Master's students and working in a dynamic, interdisciplinary team.
- A proven ability to manage complex projects to completion on schedule.
- Excellent (written and verbal) proficiency in English, good communication and leadership skills.

## Conditions of Employment

A meaningful job in a dynamic and ambitious university, in an interdisciplinary setting and within an international network. You will work on a beautiful, green campus within walking distance of the central train station. In addition, we offer you:

- Full-time employment for 2 or 3 years.
- Salary in accordance with the *Collective Labour Agreement* for Dutch Universities, scale.
- A year-end bonus of 8.3% and annual vacation pay of 8%.
- High-quality training programs on general skills, didactics and topics related to research and valorization.
- An excellent technical infrastructure, on-campus children's day care and sports facilities.
- Partially paid parental leave and an allowance for commuting, working from home and internet costs.
- A [TU/e Postdoc Association](#) that helps you to build a stronger and broader academic and personal network, and offers tailored support, training and workshops.
- A Staff Immigration Team is available for international candidates, as are a tax compensation scheme (the 30% facility) and a compensation for moving expenses.

## Information and application

### About us

Eindhoven University of Technology is an internationally top-ranking university in the Netherlands that combines scientific curiosity with a hands-on attitude. Our spirit of collaboration translates into an open culture and a top-five position in collaborating with advanced industries. Fundamental knowledge enables us to design solutions for the highly complex problems of today and tomorrow.

### Information

Do you recognize yourself in this profile and would you like to know more? Please contact [Prof. Sofia Calero], [s.calero\[at\]tue.nl](mailto:s.calero@tue.nl)

Visit our website for more information about the [application process](#) or the [conditions of employment](#).

Are you inspired and would like to know more about working at TU/e? Please visit [our career page](#).

### Application

We invite you to submit a complete application using the apply-button. The application should include a:

- Cover letter in which you describe your motivation and qualifications for the position.
- Curriculum vitae, including a list of your publications and the contact information of three references.
- List of five self-selected 'best publications'.

We look forward to receiving your application and will screen it as soon as possible. The vacancy will remain open until the position is filled.