Conducting research for a changing society: This is what drives us at Forschungszentrum Jülich. As a member of the Helmholtz Association, we aim to tackle the grand societal challenges of our time and conduct research into the possibilities of a digitized society, a climate-friendly energy system, and a resource-efficient economy. Work together with around 7,500 employees in one of Europe's biggest research centres and help us to shape change!

In pursuit of CO2 neutrality, negative emission technologies (NETs) are gaining attention as a means of offsetting unavoidable CO2 emissions. One possible NET is Direct Air Capture (DAC), which captures CO2 directly from the ambient air for further transport and permanent storage. The DACStorE project is researching novel materials and technologies for DAC and investigating the large-scale application of this NET. As part of this, we examine the sustainability of this technology, including its economic potential via the life cycle costing method.

Using initial cost data, we aim to break down the costs of future DAC systems and determine their application costs at exemplary locations. This work is therefore an integral part of the sustainability assessment.

We offer you to the next possible date an exiting

Master Thesis - Life Cycle Costing of Direct Air Capture of CO2 with subsequent Storage

Your Job:

This work aims to analyze the costs of various direct air capture (DAC) technologies throughout their life cycles, including potential future sites, to determine the production costs of permanently removing CO2 from the air. The DACStorE project investigates three technologies: low-temperature, high-temperature, and electro-swing DAC. The specific research objectives are to:

- Conduct a comprehensive literature review to determine the current and future costs of direct air capture
- Compile the costs of DAC system components
- Perform life cycle costing to determine the CO□ capture costs of DAC technology approaches and compare them with existing techno-economic analysis results

Addressing these objectives will contribute to the current discussion on direct air capture costs and enable informed decision-making regarding net-zero targets as a pillar of

The job will be advertised until the position has been successfully filled. You should therefore submit your application as soon as possible. We look forward to receiving your application via our **Online-Recruitment-System!**

Questions about the vacancy?

Get in touch with us by using **our contact form.**

Please note that for technical reasons we cannot accept applications via email.

www.fz-juelich.de

sustainability assessment

Your Profile:

- Master`s degree in Mechanical Engineering, Process Engineering, Industrial Engineering, or a comparable field
- Experience and/or interest in life cycle thinking
- Interest in climate protection and energy-related ecological and economic issues
- Independent and analytical work style
- Very good written and spoken English

Our Offer:

We work on the very latest issues that impact our society and are offering you the chance to actively help in shaping the change! We support you in your work with:

- An interesting and relevant topic for your thesis with a future-oriented focus
- Ideal conditions for scientific experience alongside your studies
- Interdisciplinary collaboration on projects in an international, committed and collegial team
- Qualified supervision by academic colleagues
- Independent preparation and implementation of assigned tasks
- Flexible working hours and appropriate remuneration
- The opportunity to work flexibly (in terms of location)
- Very good technical equipment for successful home office work
- A large research campus in the countryside, which offers the best opportunities for networking with colleagues and for a sporting balance alongside work

The position is for a fixed term of 6 months.

In addition to exciting tasks and a collaborative working atmosphere at Jülich, we have a lot more to offer: https://go.fzj.de/benefits

We welcome applications from people with diverse backgrounds, e.g. in terms of age, gender, disability, sexual orientation / identity, and social, ethnic and religious origin. A diverse and inclusive working environment with equal opportunities in which everyone can realize their potential is important to us.

Further information on diversity and equal opportunities: https://go.fzj.de/equality