



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!

The development of the bioeconomy (BE) not only aims at ensuring sufficient production of high-quality foods but also plays an important role in contributing to decarbonization, green jobs and reducing import dependency through bio-based chemical products. Assessing the wider environmental, economic and societal impacts of the up-scaling of new bio-based processes, however, requires taking the various and complex interrelations between the BE, the natural environment as well as wider economy and society into account. The research is conducted at the Institute of Energy and Climate Research - Jülich Systems Analysis (ICE-2).

We offer you to the next possible date an exiting

Master Thesis – Technology Choice and the Diffusion of Bio-based Innovations in Process Industries

Your Job:

The focus of the thesis is on modelling the choice of process technologies in the chemical industry based in order to assess the potential of innovative bio-based processes to substitute fossil fuel based ones. Applying a Choice of Technology Model to a database of processes used to produce various chemical products in different world regions the objective estimate impact of changes in processes, feedstocks, energy prices, and government regulations on the diffusion of bio-based processes focusing on monomers and polymers and their wider sustainability implications.

- Literature review on technology choice and innovation diffusion in process industries
- Empirical analysis of the diffusion of bio-based processes in the chemical industry focusing on monomers and polymers
- Assessment of wider environmental, economic and social impacts of innovative bio-based chemical processes

Your Profile:

- Master studies in environmental economics, (business) engineering, (process)

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

engineering, industrial ecology, data science, or related field with a strong quantitative background

- Interest in interdisciplinary research in bioeconomy and the sustainable transformation of supply chains
- Very good programming skills in R, Python or Matlab and ability to work with large datasets
- Independent and analytical working habits
- Very good English language skills

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:

- **SCIENTIFIC ENVIRONMENT:** You can expect excellent scientific facilities, modern technologies and qualified support from experienced colleagues
- **MEANINGFUL RESEARCH:** Your thesis deals with a future-oriented, socially relevant topic with direct practical relevance
- **INTERNATIONAL TEAM:** A pleasant working environment within an international team at one of the most prestigious research facilities in Europe
- **APPROPRIATE REMUNERATION:** You will receive appropriate remuneration for your work
- **FLEXIBILITY:** Flexible working hours make it easier for you to balance work and study
- **CAMPUS-EXPERIENCE:** Our research campus in the countryside provides ideal conditions for collegial exchange and sporting activities right on site
- **SHAPING THE FUTURE:** You will have the opportunity to collaborate with dedicated researchers from various scientific fields and actively contribute to designing the energy system of the future
- **PERSPECTIVE:** 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>