



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!

Would you like to join us in actively shaping structural change in the Rhenish mining area? With us, you have the opportunity to support the newly founded Institute for a Sustainable Hydrogen Economy (INW) with your ideas right from the start. Together with the H₂ demonstration region, the INW forms the "Helmholtz Cluster for a Sustainable and Infrastructure-Compatible Hydrogen Economy" (HC-H₂). Here, scientific foundations are laid in the field of innovative hydrogen technologies in order to advance research and development approaches with high sustainability potential and attractive economic prospects. They will be part of the Reaction Engineering for Chemical Hydrogen Storage (INW-3) institute division. The focus here will be on detailed reaction engineering investigation of catalyst materials in relevant process environments and operating scenarios as well as the development of innovative reactor concepts. If you are interested in the topics of energy transition, sustainability and chemical hydrogen storage, then you are in your element here.

Join our team to the next possible date as

PhD Student - Analytical detection of green hydrogen and hydrogen carriers

Your Job:

You will develop instrumental analytical and theoretical methods to determine the origin of hydrogen and, in particular hydrogen carriers (including methanol, LOHC systems, formic acid) by investigating the physical properties of the molecules in the laboratories on the campus of Forschungszentrum Jülich. The investigation of how these characteristics are influenced by processes in the value chain of the hydrogen economy will also be part of your work.

- Further development of the detection concept for green hydrogen, particularly green hydrogen carriers
- Development and implementation of analytical methods in isotope ratio mass spectrometry (IRMS) and gas chromatography coupled with mass spectroscopy (GC-MS), as well as other spectrometric methods
- Experimental and modelling analysis of relevant processes in the hydrogen industry

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

- Investigation of reaction mechanisms in the field of the hydrogen economy, particularly with regard to the charging and discharging of hydrogen carriers
- Cooperation with partners in the green hydrogen sector
- Publication and presentation of research results in relevant journals and at national and international conferences
- Collaboration with other working groups at Forschungszentrum Jülich
- Participation in the development of the institute

Your Profile:

- Successfully completed scientific university degree (Master) in the fields of chemical engineering, process engineering, chemistry, experimental physics or a comparable discipline
- Experience in instrumental analytical chemistry
- Knowledge of hydrogen and energy research is an advantage
- Experience in the practical application of GC-MS methods is advantageous
- High motivation to complete the doctorate within three years
- Very good organizational skills
- Ability to show initiative and work independently
- Very good cooperation and communication skills and the ability to work as part of a team
- Very good written and spoken English 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 offer ideal conditions for you to complete your doctoral degree:

- Comprehensive training courses and individual opportunities for personal and professional further development
- Extensive company health management
- Ideal conditions for balancing work and private life, as well as a family-friendly corporate policy
- Flexible work (location) arrangements, e.g. remote work
- 30 days of annual leave (depending on agreed working time arrangements) and provision for days off between public holidays and weekends (e.g. between Christmas and New Year)
- Further development of your personal strengths, e.g. through an extensive range of training courses; a structured program of continuing education and networking opportunities specifically for doctoral researchers via JuDocS, the Jülich Center for Doctoral Researchers and Supervisors: <https://www.fz-juelich.de/en/judocs>
- Targeted services for international employees, e.g. through our International Advisory Service

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

The position is for a fixed term of 3 years, with possible long-term prospects. Pay in line with 75% of pay group 13 of the Collective Agreement for the Public Service (TVöD-Bund) and additionally 60 % of a monthly salary as special payment („Christmas bonus“). The monthly salaries in euros can be found on page 66 of the PDF download: <https://go.fzj.de/bmi.tvod> Further information on doctoral degrees at Forschungszentrum Jülich including our other locations is available at: https://www.fz-juelich.de/gp/Careers_Docs

Place of employment: Brainergy Park Jülich

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>