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 contribute to the energy transition in Germany through your work? Then the Helmholtz Institute Erlangen-Nürnberg for Renewable Energy (HI ERN) is the right place for you! The HI ERN forms the core of the close partnership between Forschungszentrum Jülich, Helmholtz-Zentrum Berlin for Materials and Energy, and Friedrich-Alexander-Universität Erlangen-Nürnberg at the Erlangen site. The collaboration relates to the areas of innovative materials and processes for photovoltaic energy systems and hydrogen as a storage and carrier medium for CO2-neutral energy. Support us researching and developing solutions for the climate-neutral, sustainable, and cost-effective utilization of renewable energies. For more information on HI ERN and its main research areas, please visit https://www.hi-ern.de

We are offering an interesting

PhD Position - Catalyst Development and Reactor Design

Your Job:
You will be part of the top-class scientific department "Chemical Hydrogen Storage" at the renowned HI ERN. Under the direction of Prof. Dr. Peter Wasserscheid, our department researches and develops a wide range of topics related to chemical hydrogen storage along the entire process chain. We place a particular emphasis on LOHC technology, addressing issues across different scales. Our exciting research topics include the development of tailor-made catalysts and processes, as well as the realization of demonstrators. Our department is a world leader in the field of LOHC technology. Apply now and become part of this innovative research team!

Your task is to develop innovative processes to enable the autothermal dehydrogenation of LOHC molecules. For this purpose, you will investigate exothermic processes, such as the partial oxidation reaction of technically relevant LOHC molecules, using continuous reactors. Your work will span both catalyst and process development, with an initial focus on testing a set of promising pre-identified catalysts in the existing experimental set-up.

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

Based on your findings, you will optimize the catalytic systems and/or adapt the experimental plant to achieve outstanding key performance indicators.

Your tasks in detail:

- Contribute to develop an innovative process for the autothermal dehydrogenation of LOHC using fundamental knowledge of chemical engineering
- Investigate in depth the partial oxidation of technically relevant LOHC molecules
- Construct and operate continuous plants for the catalytic characterization of self-synthesized and industrial catalysts
- Develop analytical procedures and data processing methods to determine key performance indicators
- Use state of the art techniques for the characterization of solids before and after catalytic reactions
- Evaluate your results, formulate conclusions, present your results at national and international scientific conferences and publish the data in scientific journals through peer reviewed processes

Your Profile:

- An excellent master's degree in chemical engineering, industrial chemistry or technical chemistry
- Ability to work independently with intrinsic motivation and show initiative within the team
- Willingness and ability to integrate into an international and interdisciplinary research environment
- Joy and expertise in chemical engineering
- Laboratory experience is required
- Experience with catalyst synthesis and characterization is an advantage
- Excellent cooperation and communication skills complete your profile
- Proficiency in written and spoken English is essential

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:

- An inspiring environment that invites you to conduct high-quality research and successfully implement your own ideas
- Excellent infrastructure for transferring scientific findings into technical applications
- Being part of an interdisciplinary international team
- Benefit from excellent training in catalyst synthesis and characterization, as well as in reaction and process engineering to further expand your portfolio
- An open scientific environment, where you will have the best opportunities for cooperation with first-class partners at the Friedrich-Alexander University Erlangen-Nuremberg (FAU), Forschungszentrum Jülich (FZJ), Helmholtz-Zentrum Berlin (HZB), leading industrial companies in the field of chemical hydrogen storage, and research institutions abroad t
- Individual internal and external training courses to further develop your potential, 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
- 30 days of annual leave and provision for days off between public holidays and weekends (e.g. between Christmas and New Year)
- Targeted services for international employees, e.g. through our International

Advisory Service

In addition to exciting tasks and the collaborative working atmosphere at Jülich, we have a lot more to offer (https://www.fz-juelich.de/en/careers/julich-as-an-employer/benefits).

The position is for a fixed term of 3 years. 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 euro can be found on the BMI website: https://go.fzj.de/bmi.tvoed.entgelt Further information on doctoral degrees at Forschungszentrum Jülich (including its various branch offices) is available at https://www.fz-juelich.de/en/careers/phd

Place of employment: Erlangen

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