



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 7,100 employees in one of Europe's biggest research centres and help us to shape change!

With the ongoing energy transition, the exploitation of the subsurface (e.g., for geothermal energy extraction, CO₂ sequestration, H₂ storage or even nuclear waste disposal) will increase. Ensuring the long-term effectiveness of deep subsurface storage systems relies on our understanding and modeling capability of critical relationships between natural media and engineered components. In the recently acquired ERC funded project Genies (<https://cordis.europa.eu/project/id/101040341>), we aim to fill current knowledge gaps related to mineral dissolution and crystallization processes with gas production and transport in porous media. Moreover, we address the impact of the presence of gas on mineral crystallization in tightly confined porous media, which is important for a realistic description of such processes in reactive transport models.

Strengthen our department Nuclear Waste Management as soon as possible as

Postdoc - On pore scale modelling of multiphase flow in porous media

Your Job:

- Development of pore-scale models of multiphase flows coupled with chemistry
- Development of a framework to speed up geochemical calculations
- Collaboration in the implementation of crystallization mechanisms in reactive transport codes operating in high performance computing environments
- Processing of the data and scientific interpretation of the results
- Independent presentation of the results at scientific conferences and in scientific publications

Your Profile:

- PhD degree in applied mathematics, Earth/Environmental Sciences, Chemistry, Physics, Chemical Engineering, Petroleum engineering or a related discipline
- Expert in pore scale modelling of multiphase flow
- Knowledge in working in high performance computing environments is necessary
- Scientific programming languages (such as C, C++, Python) are necessary

We look forward to receiving your application until 02.03.2023 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

- Skills in geochemical modelling are desirable.
- Skills in machine learning are desirable
- Knowledge on nucleation processes is desirable
- Ability to work in an international multidisciplinary team is essential
- Excellent English communication and writing 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:

- A large research campus with green spaces, offering the best possible means for networking with colleagues and pursuing sports alongside work
- Possibility to develop an own scientific profile in the topic
- An excellent environment to perform cutting-edge research at an international level
- Opportunities for scientific and personal further training at Forschungszentrum Jülich
- 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
- Targeted services for international employees, e.g. through our International Advisory Service

We offer you an exciting and varied role in an international and interdisciplinary working environment. The position is for a fixed term of 2 years. Salary and social benefits will conform to the provisions of the Collective Agreement for the Public Service (TVöD-Bund) depending on the applicant's qualifications and the precise nature of the tasks assigned to them.

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.