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), the employees of our Institute of Energy and Climate Research - Nuclear Waste Management (IEK-6) aim to fill current knowledge gaps related to geochemical processes coupled with multiphase flow in subsurface system. We apply innovative experimental and computational approaches to analyze and interpret complex coupled thermal-hydraulical-mechanical-chemical processes relevant to contaminant transport in the subsurface.

We are looking to recruit a

**Postdoc - Reactive transport modelling**

**Your Job:**
- Development of models for multiphase flow coupled with chemistry (mineral dissolution and precipitation) in porous media
- Implementation of mineral crystallization mechanisms in reactive transport codes operating in high performance computing environments
- Development of surrogate models to speed up geochemical calculations
- Processing of the data and scientific interpretation of the results
- Independent presentation of the results at scientific conferences and in scientific publications

**Your Profile:**
- Master and PhD in applied mathematics, Earth/Environmental Sciences, Chemistry, Physics, Chemical Engineering, Petroleum engineering or a related discipline
- Experience in modelling transport in porous media
- Scientific programming languages (such as C, C++, Python) are necessary

We look forward to receiving your application until 23.11.2023 via our [Online-Recruitment-System](www.fz-juelich.de)!

**Questions about the vacancy?**
Get in touch with us by using [our contact form](www.fz-juelich.de).
Please note that for technical reasons we cannot accept applications via email.
• Skills in geochemical modelling are desirable
• Knowledge in working in high performance computing environments is desirable
• Skills in machine learning are 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 opportunity to actively help in shaping change. Here is what Forschungszentrum Jülich can offer you:
• Possibility to develop an own scientific profile in the topic
• An excellent environment to perform cutting-edge research at an international level
• Developing the potential of our employees is important to us, which is why we offer individual professional development opportunities
• Ideal conditions for balancing work and private life, as well as a family-friendly corporate policy supported by our Equal Opportunities Bureau
• A full-time position with flexible working hours
• Flexible work arrangements, e.g. in the home office in coordination with the supervisor and in accordance with required presence appointments
• 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
• Exploration and preparation of next career opportunities, supported by our Career Center & Postdoc Office: https://www.fz-juelich.de/en/career-center-postdoc-office

We offer you a position for a fixed term of 2 years. Salary and social security benefits will conform to the provisions of the Collective Agreement for the Public Service (TVöD-Bund), pay group 13, depending on your current qualifications and the precise nature of the tasks assigned to you.

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