



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 7,250 employees in one of Europe's biggest research centres and help us to shape change!

At the Institute of Energy and Climate Research - Energy Systems Engineering (IEK-10) we focus on the development of models and algorithms for simulation and optimization of decentralized, integrated energy systems. Such systems are characterized by high spatial and temporal variability of energy supply and demand as well as by a high degree of interdependence of material and energy flows. Research at IEK-10 aims to provide scalable and faster than real-time capable methods and tools which enable the energy-optimal, cost-efficient and safe design and operation of future energy systems.

We are offering a

PhD Position - High Performance Computing Solutions for Energy Systems

Your Job:

Computing performance plays a very critical role in the use of model-based approaches to the planning, design, and operation of energy systems. At IEK-10, the department of High-Performance Computing focuses on the development of innovative methodologies for the parallelization of simulation algorithms as well as on the best exploitation of hardware architectures. In this context, we are developing an innovative High Performance Computing (HPC) solver for the parallel-in-time simulation of multi-modal energy system with founding from Helmholtz Foundation and DFG.

Your areas of research / tasks will include among others:

- Develop innovative parallelization algorithms for DAE and ODE systems
- Explore the use of heterogenous architectures for best runtime performance
- Representation in national and international networks
- Presentation of your research results at (international) meetings and conferences, as well as in the form of publications in relevant journals

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

Your Profile:

- Excellent completed scientific university (Master) studies in electrical engineering, informatics or comparable
- Strong mathematical background
- Knowledge and experience in programming (Python, C, C++)
- Knowledge of state-of-the-art parallel programming paradigms preferred (e.g. MPI, OpenCL)
- Very good communication skills in English

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:

- A highly motivated research group in one of the biggest research centers in Europe
- An excellent scientific and technical infrastructure (both at IEK-10 and at JSC, the Jülich Supercomputing Centre)
- Participation in project meetings and conferences
- Working remote partly possible
- 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

The position is for a fixed term of 3,5 years, where the first half year serves as orientation and probation period. Pay is 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“). Further information on doctoral degrees at Forschungszentrum Jülich including our other locations is available at: www.fz-juelich.de/gp/Careers_Docs

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.