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!

Are you motivated to pursue a 4-year doctoral project that requires a diverse set of skills? Are you excited by complex challenges that demand interdisciplinary solutions? Then the Program for Collaborative Doctoral Projects offers a perfect opportunity for you. Today's most pressing problems can only be solved in cross-institutional collaborations. That's why our projects are designed specifically to benefit from collaboration among scientific experts from various fields and disciplines, enabling you to benefit from the combined supervision of experienced researchers from different institutes at Forschungszentrum Jülich. As one of Europe's largest and most multidisciplinary research centres, Jülich offers access to state-of-the-art infrastructure and a vibrant scientific community. Join us in developing solutions for a rapidly changing world and help shape the future by working in an international environment. For more information about the Program for Collaborative Doctoral Projects please visit: https://go.fzj.de/Collaborative-Doctoral-Projects

We are offering an interesting

Collaborative Doctoral Project (PhD Position) - Computationally-enabled inverse design of perovskite-based materials for photovoltaic devices

Your Job:
As a PhD candidate you will develop and deploy an artificial intelligence (AI) driven approach to streamline high-throughput experimentation (IMD-3: Institute of Energy Materials and Devices - Photovoltaics) and high-performance computation (IET-3: Institute of Energy Technologies - Theory and Computation) towards the overarching aim of implementing an inverse design approach for novel lead-free perovskites for emerging photovoltaic applications. Your contributions will connect competencies and capacities of two institutes at Forschungszentrum Jülich who are leaders in their respective fields, viz. AI driven materials property prediction and high thoughput materials development.

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

Computational studies will be performed on Jülich`s world-class computational and AI infrastructure.

Your Tasks:
- Develop a workflow in high-performance computational studies and integration into a mixed fidelity experimental high-throughput platform
- Create a data management platform that connects institutes to facilitate a rapid and efficient exchange among experimental and computational groups and
- Devise an approach in invertible predictive modelling that links semiconductor properties to the composition of lead-free double perovskites

Your Profile:
- Master`s degree in theoretical or computational physics, chemistry, materials science or similar fields
- Familiarity with atomistic simulations, high-performance computing and application of AI-based methods
- Basic knowledge in photovoltaics and solid-state materials for energy application
- Ability to work individually and in the team, to effectively collaborate and to communicate in a diverse scientific environment
- High proficiency in spoken and written English
- Interest in learning effective usage of emerging computational infrastructures and methods

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 large research campus in a green setting, offering excellent opportunities for networking with colleagues and for sports and recreation alongside your work
- Superb scientific and technical infrastructure
- Opportunity to participate in (international) conferences and project meetings
- Continuous professional support from your scientific supervisors
- 30 days of annual leave
- The option of flexible working arrangements
- A structured doctoral program with a comprehensive suite of training and networking opportunities provided by the HITEC Graduate School: https://www.hitec-graduate-school.de/home and the JuDocs doctoral platform: 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 at Jülich, we have a lot more to offer: https://go.fzj.de/benefits

We offer a 4-year PhD position. Salary and social benefits in conformity with the provisions of the Collective Agreement for the Civil Service (TVöD). Depending on your qualifications and the precise nature of the tasks, salary grade 13 TVöD-Bund (up to 100%) 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

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