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!

We at Forschungszentrum Jülich are making a significant contribution to the development of future fusion power plants. In this context, a novel cooling concept for plasma-exposed components is being developed in the BMBF-funded project HPPFC – Advanced Technologies for Plasma-Exposed Wall Components Based on High-Temperature Heat Pipes. The aim is to integrate liquid metal heat pipes into plasma-facing components (PFCs) to enable efficient heat dissipation.

**Join our team to the next possible date as**

# Postdoc – Design and Simulation of High-Temperature Heat Pipes for Fusion Applications

**Your Job:**

- Development and optimization of high-temperature heat pipes for fusion applications
- Numerical simulations of heat transfer and fluid dynamics in heat pipes using COMSOL, ANSYS, or similar software
- Structural and thermomechanical simulations, particularly thermal stresses, mechanical loads, and deformation under high-temperature conditions
- Development of an engineering design for the integration of heat pipes into PFCs
- Collaboration with technicians and doctoral researchers for the fabrication and assembly of heat pipe components
- Support in developing innovative manufacturing methods for the production of heat pipe components

**Your Profile:**

- Completed university degree in mechanical engineering, physics, materials science, computational engineering, or a related field, with a PhD or
- Master degree with at least three years of professional experience in fluid dynamics, heat transfer, and structural simulation
- Strong knowledge of fluid dynamics, heat transfer, and structural simulation

We look forward to receiving your application until 14.09.2025 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

- Experience with FEM or CFD methods and tools such as COMSOL, ANSYS or similar software packages
- Ideally, experience with thermal and mechanical loads of high-temperature materials
- Scientific creativity, teamwork skills, and an independent working style
- Excellent English language skills (spoken and written), German language skills are an advantage

**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:

- CAMPUS EXPERIENCE: Our research campus in the countryside provides ideal conditions for collegial exchange and sporting activities right on site
- KNOWLEDGE & FURTHER TRAINING: Your development is important to us – we provide targeted and individual support
- HEALTH & WELL-BEING: Your health is important to us. You can look forward to a comprehensive company health management programme with a wide range of options, including a beach volleyball court, running groups, yoga classes and much more. In addition, our company medical service and an experienced social counselling team are available to assist you on site
- PERSPECTIVE: After a three-year fixed-term contract, our goal is to hire you on a permanent basis. Let`s use this time to find out how well we fit together
- SUPPORT FOR INTERNATIONAL EMPLOYEES: Our International Advisory Service makes it easier for international employees to get started
- WORK-LIFE-BALANCE: Flexible working arrangements (including remote working) are generally possible upon agreement and in line with upcoming tasks and (on-site) appointments
- FLEXIBILITY: Flexible working time models, including options close to full-time, allow you to tailor your working hours to suit your individual needs. For more information, visit: https://go.fzj.de/near-full-time
- LEAVE: You will receive 30 days of leave plus additional days off (e.g. between Christmas and New Year`s Day)
- FAIR REMUNERATION: Depending on your existing qualifications and the tasks assigned to you, you will be classified in pay grade 13-14 of the TVöD-Bund (Collective Agreement for the Public Service). All information on the TVöD-Bund collective agreement can be found on the BMI website: https://go.fzj.de/bmi.tvoed. The monthly salaries in euros can be found on page 66 of the PDF download.

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.

Further information on diversity and equal opportunities: https://go.fzj.de/equality