

Call for Applications
Young Investigators Group: Computational Science
22.06.2011

With the establishment of Young Investigators Groups, Forschungszentrum Jülich aims to provide the best foreign and German junior researchers with excellent working conditions in a research-oriented environment. The group leader is granted independence early on, with secure career prospects ('tenure track') based on proven scientific achievements. The group leader should work closely with a university partner. In this way he/she is given the opportunity to gain teaching experience and acquire the necessary qualifications for a higher academic career. A joint appointment as junior professor (W1) will be made wherever applicable with our partner RWTH Aachen university.

I. Research Topic and Goal of the Funding

The Nuclear Waste Management and Reactor Safety part of the Institute for Energy and Climate Research contributes fundamental and applied research for the safe management of nuclear waste and the safe operation of nuclear reactors. Research topics are to a large extent material science oriented and include the long-term safety of nuclear waste disposal, innovative waste management strategies (partitioning, conditioning, transmutation), structure research (actinide solid state chemistry), non-destructive characterisation of nuclear waste and nuclear safeguards.

We focus on furthering our understanding of materials relevant to the safe management of high level nuclear waste on the basis of simulations on the atomistic, nano- and mesoscale and are now seeking an outstanding young scientist who has a fundamental appreciation of computational science. The expertise required will be code development, for example as a co-developer of a DFT package or in the context of developing a QM/MM approach. It includes the development of mathematical algorithms up to the modelling of systems and simulation of the complex interaction of all the processes. He/she will closely cooperate with the experimental research programme of the institute.

Forschungszentrum Jülich operates one of the most powerful computer systems for scientific and technical applications in Europe, including the petaflop computer JUGENE and the supercomputer JUROPA and provides the adequate scientific infrastructure for the project.

II. Scope and Duration of Funding

- Position for the group leader, salary grade E 14 or 15 of the TVöD (Collective Agreement for the Civil Service)
- Staff: three team members with complementary computational skills
- €50,000 p.a. for materials, equipment and investments
- Opportunity to participate in personal development programmes (i.e. a leadership)

The term for the research groups is 5 years, in the case of appointment as a junior professor this is increased to 6 years, following an midterm evaluation (year 4). The result of the evaluation forms the basis for a decision on permanent employment after the period of funding has elapsed. Evaluation criteria are the scientific achievements, the profile of the group and its contribution to the overall strategy of the IEK. After funding has ceased, the group will be financed on a competitive basis, i.e. by third-party funds acquired by the group leader.

III. Target Group and Eligibility

This call is directed to outstanding postdocs with proven research experience at institutions in Germany and abroad. Applications from women are particularly welcomed and the Centre supports efforts at combining a family with a career. The most important selection criterion is the outstanding quality of the applications.

Eligibility criteria:

- Very good scientific achievements;
- Postdoc experience, several months of experience abroad;
- Candidates should not have completed their doctorate more than 6 years ago. Childcare leave of max. 2 years per child may be taken into consideration.

IV. Duties and Obligations of the Group Leader

- Creation of a working group and development of one's own research profile;
- Assuming responsibility for the staff and budget of the working group;
- Close cooperation with the partner university, taking on teaching assignments; if necessary, Forschungszentrum Jülich will assist applicants in establishing contacts with the university;
- Acquisition of third-party funds;
- Opportunity to participate in the associated career development measures.

V. Application documents

Applicants will be invited to submit a complete application in English. This will comprise:

- *A cover sheet with*
 - Title of the group;
 - Name, present address, e-mail and telephone number;
 - 5-6 keywords;
- *Short summary (see Appendix 1);*
- *Planned work programme of the group; maximum of 20 pages clearly defining the work packages, important intermediate steps and milestones with a time schedule;*
- *Funding requested;*

Closing date is 15 September

After a personal presentation by the candidates, the final decision will be taken by a panel of experts. The envisaged date for the review procedure is October.

VI. Start of Funding

Earliest funding will start January 2012.

Please do not hesitate to contact:

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Appendix 1**Summary**

Title of the Group	
Name of Group Leader	
Present Address	
Key Words	