Postdoctoral Researcher
Cavity control of rare earth ions

Job description: Rare earth ions provide exceptional optical and hyperfine coherence, which makes them promising candidates for quantum-optical applications ranging from quantum memories to quantum computing. Building on recent work (Casabone et al., arXiv:1802.06709), we want to develop an extended toolbox for advanced control of ensembles and individual ions with the help of optical microcavities. The position will involve theoretical modelling of ion-cavity coupling, setup and operation of a cryogenic tunable microcavity experiment, high resolution spectroscopy, and investigation of coherent control of rare earth ions.

The project is conducted in the group of Prof. David Hunger at the Karlsruhe Institute of Technology, Germany (www.phi.kit.edu/hunger.php). The group is exploring the enhancement of light-matter interactions with fiber-based optical microcavities in the fields of solid state quantum optics, optical sensing, microscopy, spectroscopy, and optomechanics. The project is funded by the Helmholtz Association and the European Union 7th Framework Program (FETOpen Project NanOQTech, www.nanoqtech.eu), and is in close collaboration with leading groups in the field of quantum information with rare-earth ions.

Qualification: You hold a university degree (Diploma/Master) and a PhD in physics with significant experimental experience in the fields of quantum optics, solid state spectroscopy, quantum information, single quantum emitters, or optical microcavities. Very good knowledge of English is obligatory, knowledge of German is advantageous.

Salary: The remuneration occurs on the basis of the wage agreement of the civil service in TV-L.

Institute: Institut of Physics

Contract duration: currently limited to two years

Starting date: start from the earliest possible date

Application up to: 15th July 2018

Contact person in line-management: Please contact Prof. Dr. David Hunger for further information, via email david.hunger@kit.edu or phone: +49 721/608-43510.

Application: Application can be submitted, by email, to Karlsruhe Institute of Technology (KIT), Institute of Physics, Wolfgang-Gaede-Str. 1, 76131 Karlsruhe.
KIT is an equal opportunity employer. Women are especially encouraged to apply. Applicants with disabilities will be preferentially considered if equally qualified.

KIT is certified as a family-friendly university (familienfreundliche Hochschule) and offers part-time employment, leaves for family-related reasons, dual career options, and individual coaching for family-work balance.