



Leibniz  
Universität  
Hannover

The research group of Prof. Dr. Christian Ospelkaus at the Institute of Quantum Optics develops components for scalable quantum computers based on trapped ions.

The Institute of Quantum Optics invites applications for the position of a

## **Research Assistant (PhD position, m/f/d) in quantum technologies focusing on the design of ion trap quantum processors (Salary scale 13 TV-L, 75 %)**

at the earliest possible date. The position is limited to 3 years with a possibility of extension.

The control of quantum states of trapped ions is one of the most advanced approaches on the way towards fault-tolerant programmable quantum computers. Based on chip-scale microfabricated ion trap technology in combination with microwave control, a 50-Qubit-System will be built. Expert teams will focus on all aspects from chip design and fabrication with integrated optics and electronics to electronic circuit design, laser technology and software design for various applications.

We are part of an excellent research environment with access to a unique infrastructure including chip fabrication. The team is working in an excellent national and international network and is participating in important large collaborative projects including the cluster of excellence "QuantumFrontiers", the initiative "QVLS", and the BMBF project "MIQRO".

### **Responsibilities and duties**

You will be part of a team that designs and simulates ion trap processor chips for a register-based approach to ion-trap quantum computing. You will develop designs for manipulating single ions with microwave fields and electrode layouts for transporting ions between the individual registers of the ion trap chip. Furthermore, you will contribute to the composition of a component library for efficiently conceptualising advanced ion trap chips.

### **Employment conditions**

- Scientific university degree (M.Sc. or equivalent) in physics, electrical engineering or a neighbouring research field
- Background in numerical modelling or experience with a software for finite element calculations is advantageous
- High level of personal motivation, responsibility and continuous learning abilities
- Pronounced communication and team building capabilities
- Openness to work in a diverse, international working environment
- Very good knowledge of the English (and possibly German) language

The university aims to promote equality between women and men. For this purpose, the university strives to reduce under-representation in areas where a certain gender is under-represented. Women are under-represented in the salary scale of the advertised position. Therefore, qualified women are encouraged to apply. Moreover, we welcome applications from qualified men. Preference will be given to equally-qualified applicants with disabilities.



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For further information, please contact Prof. Dr. Chr. Ospelkaus (phone: 0049 511 762-17644, Email: [cos@iqo.uni-hannover.de](mailto:cos@iqo.uni-hannover.de)) or Ms T. Meiners (phone: 0049 511 762-14942, Email: [t.meiners@iqo.uni-hannover.de](mailto:t.meiners@iqo.uni-hannover.de)). Additional information can be found on the website: <https://www.iqo.uni-hannover.de/en>

Please submit your application with supporting documents by July 12th 2021 to:

**Gottfried Wilhelm Leibniz Universität Hannover**

Institut für Quantenoptik

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z. H. Teresa Meiners

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30167 Hannover

or by email to: [t.meiners@iqo.uni-hannover.de](mailto:t.meiners@iqo.uni-hannover.de)

<http://www.uni-hannover.de/jobs>

Information on the collection of personal data according to article 13 GDPR can be found at <https://www.uni-hannover.de/de/datenschutzhinweis-bewerbungen/>.