

Braunschweig, 14. Dezember 2020

## **JOB OFFER Nr. 20-QVLS-T1.3A**

Braunschweig University of Technology, with its 18.500 students and about 3.700 employees, is the largest University of Technology in northern Germany. We stand for a strategic and performance-oriented thinking and acting, for relevant research, motivated teaching and a successful transfer of knowledge and technology into industry and society. We are consequently advocating family friendliness and equal opportunities. Our campus is located in one of the most research-oriented regions of Europe.

The „Quantum Valley Lower Saxony“ (QVLS-Q1) research consortium, a collaboration between TU Braunschweig, Leibniz University Hannover and PTB, aims at realizing a 50-Qubit quantum computer based on trapped ions.

In the frame of this project, the Institute of Semiconductor Technology is looking for talents worldwide, who want to join our team:

### **PostDoc (m/f/d) in Quantum Technologies focussing on Single Photon Detection Systems (Team 1.3)**

The position is temporary (3 years) with a possibility of extension. The location is Braunschweig. Remuneration will be in line with the current German collective pay agreement up to TV-L E14, depending on personal qualification and task assignments.

The control of quantum states of trapped ions is one of the most advances approached on the way towards error tolerant programmable quantum computers. Base on chip technology for ion traps in combination with microwave control, a 50-Qubit-System will be built in QVLS-Q1. 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 the unique infrastructure of the whole consortium. The team is working in an excellent national and international network and is participating – besides QVSL-Q1 – in various other large collaborative projects, including the Excellence Cluster „QuantumFrontiers“.

#### **Tasks and assignments:**

- Active participation in the Team 1.3 “Integrated Single Photon Detectors”
- Operational group leader with background in single photon detection
- Systems integration, micro-fabrication and semiconductor device physics
- Simulations of single photon detectors in an integrated environment
- Alternative technologies (CMOS SPAD camera, cryoPMT ...)
- Characterization of the single photon detection system

**Required profile:**

- Master and PhD in physics, electrical engineering or similar expertise
- Expert knowledge in one or more of the above mentioned research areas
- 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
- Readiness to perform research in partner labs at various locations when necessary

For further informationen please contact:

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[www.qvls.de](http://www.qvls.de)

TU Braunschweig offers flexible part-time models whenever possible for supporting family-friendliness. Disabled persons are preferred in case of equal suitability. Written evidence has to be presented in the application. Applications from applicants of all nationalities are welcome. TU Braunschweig aims to reduce under-representation in all areas and positions as defined by the NGG. Therefore, applications from women are particularly welcome in this case.

Personal data will be stored for the purpose of carrying out the application procedure. Application costs cannot be reimbursed. Please understand that applications that are not considered can only be returned against a self-addressed and stamped envelope. By submitting your application, you agree that your application may be forwarded internally to other job openings in the consortium.

Are you interested? In this case we are looking forward to your application. Please send your application via email ([lena@tu-braunschweig.de](mailto:lena@tu-braunschweig.de)) as a single PDF document. In case this is not possible, a written application may be sent to: Institut für Halbleitertechnik, Frau Silke Feldhusen, TU Braunschweig, Hans-Sommer-Straße 66, 38106 Braunschweig).

**Reference Number 20-QVLS-1.3A**

Application deadline: **February 28<sup>th</sup> 2021**