PostDoc Position: Technology of Superconducting Qubit Devices

The Molecular Electronics Group at the Technical University of Munich, School of Computation, Information and Technology, Department of Electrical Engineering (www.ee.cit.tum.de/mol), is inviting applications for one

PostDoc Position (100% E13-14 TV-L, fixed-term).

The successful candidate will work as part of a large project consortium, on the development, scaling and integration of superconducting qubits for quantum computing applications. The project work will specifically include state-of-the-art micro-/nanofabrication techniques, surface and interface preparation as well as advanced RF electrical measurement techniques at low temperatures. It will be carried out in close collaboration with other consortium partners such as the Walther-Meißner-Institute, the Fraunhofer EMFT, and various industrial partners. The position is limited to 2 years at first, with the possibility of extension.

Tasks:

- Work within an interdisciplinary, competitive project as part of a large collaborative network towards the realization and operation of quantum computers with superconducting qubits
- Design, simulate, fabricate and optimize superconducting qubit device structures and circuit components
- Develop and apply surface and interface preparation techniques towards enhanced qubit performance
- Develop, setup and operate advanced RF and DC electrical characterization and testing at cryogenic temperatures
- Work in semiconductor cleanrooms, in cryogenic measurement laboratories and in chemical laboratories
- Support process transfer into wafer-scale pilot line fabrication

Requirements:

- PhD degree in electrical engineering, physics or material science
- Knowledge and skills in thin film process- and micro-/nanotechnology, surface and interface science, microwave engineering and measurements (GHz regime), cryo-technique
- Experience with superconducting quantum technology is an advantage
- Fluent in English, basic knowledge of German

As an equal opportunity and affirmative action employer, TUM explicitly encourages applications from women as well as from all others who would bring additional diversity dimensions to the university's research and teaching strategies. The position is suitable for being filled by disabled persons. Disabled applicants will be given preference in the case of otherwise essentially equal qualification, competence and professional expertise. International candidates are highly encouraged to apply.

Please send your application by e-mail (one single PDF file) to Prof. Marc Tornow (tornow@tum.de), using as subject line "Postdoc Quantum Technology" in your application email. Applications should include: detailed CV with copies of main certificates, list of publications, brief research statement / motivation and contact information of 2-3 references.

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