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## Position for Postdoctoral Researcher or PhD Student in Solid State Physics – Microwave Spectroscopy of Quantum Materials

A position for a Postdoctoral Researcher or a PhD Student is available in the Quantum Materials group led by Silke Bühler-Paschen at the Technische Universität Wien (TU Wien) in Vienna, Austria on the following subject:

### **Microwave spectroscopy of strange metals and correlated topological semimetals**

Quantum materials are increasingly pursued for next-generation quantum devices. In this PhD project, microwave-based measurement techniques will be used to investigate the electrodynamic response of strongly correlated electron systems. At focus will be several intriguing phenomena – such as strange metallicity and correlation-driven topology in heavy fermion compounds – that are expected to have key responses in the microwave regime at millikelvin temperatures.

The successful candidate will use and optimize various microwave techniques, including broadband optical conductivity measurements in Corbino geometry and measurements using superconducting coplanar waveguide resonators, recently implemented by the group in a powerful closed-cycle dilution refrigerator, to study thin film samples grown by molecular beam epitaxy.

### **Working conditions**

The successful candidate will be integrated into the Quantum Materials group at TU Wien, working at the Karlsplatz campus in the center of Vienna. The group's research ranges from materials synthesis to advanced physical property measurements under multiple extreme conditions, and includes also experiments at large facilities and intense collaboration with theorists. The group conducts several major research projects, including an ERC Advanced Grant, and is involved in multiple international research programs.

### **Required skills**

We are seeking a highly motivated candidate with an excellent background in solid state physics and strong experimental skills. Experience with cryogenic equipment/dilution refrigerators or microwave/RF measurements is desirable but not mandatory. Programming experience in Python for instrument control, data acquisition, and analysis is also advantageous.

### **Application**

To apply, please send an email with your CV, a list of publications and presentations, a short statement of research experience and interests, and two letters of recommendation (emailed separately by the writers) to Prof. Dr. Silke Bühler-Paschen at [paschen@ifp.tuwien.ac.at](mailto:paschen@ifp.tuwien.ac.at) ([Quantum Materials Group at TU Wien](#)). Don't hesitate to contact Silke Bühler-Paschen for further information.

**Working place:** Institute of Solid State Physics, Wiedner Hauptstraße 8-10, 1040 Vienna, Austria ([TU Wien](#)).

**Starting date:** As soon as possible.

**Salary:** ~2.830 EUR (PhD Student) / ~5.014 EUR (Postdoc) gross/month, 14 times/year, in accordance with the Austrian Collective Agreement for University Staff.

**Application deadline:** Applications will be considered until the position is filled.