

# POST-DOC OPENING

## Project Description

Innovative materials represent a steppingstone for the development of new technologies: quite intriguing for applications is a class of materials, known as topological materials, which show the presence of exotic behaviour on their surfaces or edges.

In this project we aim at developing a computer code “BandITT: Band Interpolation and Topology Toolkit” for extracting microscopic information from realistic quantum simulations of complex materials and guide the discovery of new topological materials. Applications include contributions to the topological classification of real material and the complex interaction between topology and magnetism or quantum correlations.

## Position summary

The interplay between the symmetry of a material and the correlated dynamics of its electronic structure makes this challenging project suitable for motivated individuals with an interdisciplinary background, including the areas of condensed matter physics, materials science, applied mathematics and theoretical chemistry. Familiarity with computational aspects of group theory and confident programming skills are a decisive asset.

TU Wien is a vibrant and consolidated research institution in Vienna (Austria), committed to inclusivity and diversity in the workplace.

### Qualifications:

- PhD in a relevant field

### Required application material:

- Curriculum Vitae with publication list
- Statement of current research interests
- Two recommendation letters to be addressed confidentially

### Timeline:

the position is to be filled by June 2021 for a duration of 24 months

## Contact details

Interested applicants are asked to contact

Privatdoz. Dr. Jan **Tomczak** ([jan.tomczak@tuwien.ac.at](mailto:jan.tomczak@tuwien.ac.at))

Dr. Emanuele **Maggio** ([emanuele.maggio@gmail.com](mailto:emanuele.maggio@gmail.com))

Institut für Festkörperphysik

TU Wien

Wiedner Hauptstraße 8-10

A-1040 Vienna



Aerial view of the TUW Campus