

Postdoc / PhD Student Positions in the Physics and Engineering of Weyl semimetals for future computing applications (project SCHINES)

The European Union project “Spatially-Separated Chirality Inspired Networks” (SCHINES) combines the expertise of [IBM Research - Zurich](#), the [Max Planck Institute for Chemical Physics of Solids](#), Dresden, and the [Institut Neel](#), Grenoble, to develop novel device concepts and integration strategies of Weyl semimetals into electronic devices for future computing architectures. Weyl physics has recently become a fascinating area of research predicting unexpected and extraordinary transport properties. The transition into devices and engineering prototypes, however, is yet to be made. The project covers the entire range from fundamental materials science and physics studies of both theory and experiment, to device engineering with design, fabrication and characterization. To support these efforts, we are looking for highly motivated researchers (PhD students and Postdocs) with a background in theoretical or experimental physics, materials science, microfabrication or electrical engineering.

During the project, the theoretical description of transport in Weyl semimetals will be extended to spatially modulated band structures using approaches from quantum field theory and density functional theory (Institut Neel and MPI). Electrical and thermal transport measurements of candidate materials and structures will be performed at variable temperature and magnetic fields to explore unconventional transport properties in view of device application (MPI and IBM). Thin film materials deposition and clean room-based device fabrication processes will be developed to fabricate functional device demonstrators (IBM and MPI).

The successful candidates will have access to state-of-the-art laboratories and computing infrastructure and will participate in collaborative and creative groups in a lively research environment. The ideal candidate is very talented, creative, motivated, has excellent communications skills and is open to working in an international, multidisciplinary team. All partners committed to diversity at the workplace. With us, you will find an open, multicultural environment. Excellent, flexible working arrangements enable the candidates to strike the desired balance between their professional development and their personal lives.

If you are interested in this challenging position and you fulfill the requirements, please send your complete curriculum vitae and the names of three references by email to the contact at your preferred affiliation:

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