TECHNISCHE UNIVERSITÄT WIEN
Institut für Festkörperphysik

Vienna, 16/11/2017

Position for a PhD student at Vienna University of Technology

Thermoelectric properties of complex mesowires

Reducing the geometrical dimensionality of a material can lead to new phenomena not expected in the bulk. Systematic studies as function of sample size appear ideally suited to explore such phenomena. For instance, reducing the size of a topological insulator sample diminishes the contribution of the bulk states and thus allows to study the role of topologically protected conductive surface states. In thermoelectric materials, mesostructuring may help to further lower the thermal conductivity and thus enhance the thermoelectric efficiency. Finally, size effects may help to elucidate the origin of the “giant” thermopower observed in Kondo insulators.

The project will consist of growing single crystals of selected representatives of the above materials classes, mesostructuring them into wires of different diameters, fabricating measurement platforms for thermoelectric measurements as function of temperature and magnetic field, and performing the actual measurements on single mesowires. The data analysis and interpretation shall be done in collaboration with theorists whenever appropriate.

The successful candidate will have an excellent background in solid state physics, and very good experimental skills.

To apply, please send an email containing a 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:

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Starting date: As soon as possible.
Application deadline: Applications will be considered until the position is filled.
Salary: About 2050 EUR gross salary/month, 14 times per year, in accordance with the Austrian Collective Agreement for University Staff.