

Postdoctoral Position in Electron Microscopy

A postdoctoral position (full time) is open in the framework of a joint project between TU Wien and University of Vienna on *Design and Experimental Demonstration of a New Kind of Vortex Generator for Electrons in the TEM*. The planned device uses the multipole-based aberration correctors of transmission electron microscopes. A special tuning of the multipoles in combination with a phase mask will create electron vortices with a brilliance 5 to 10 times higher than what is feasible with the prevailing holographic mask technique. Two experimental platforms - the FEI Titan Cube G2 60-300 at CentraleSupélec in Paris and the recently commissioned NION Ultrastem at Vienna University - in combination with the unique expertise on electron vortices at TU Wien build a firm basis for this project, comprising experiments and numerical simulations.

The candidate is supposed to experiment with the aberration correctors of the microscopes, using simulation software to be developed on the basis of existing codes (MATHEMATICA for electron trajectories and COMSOL finite elements code for electron wave functions). Phase plates will be designed in collaboration with external partners and produced with the TU Wien - based FIB machine. The job includes regular visits of collaborators' labs (e.g. in Paris, Karlsruhe, Heidelberg).

Necessary skills of the candidate:

- PhD in physics or equivalent MINT studies;
- Independent operation of (S)TEMs;
- Basic understanding of electron optics and quantum theory;

Candidates with the following additional skills will be preferred:

- Hands-on experience with aberration corrected electron microscopes;
- Experience with numerical simulation of physics problems.

We offer collaboration with international top players, access to high-end microscopes, unique expertise in electron microscopy.

The position is full time for 2-3 years, expected starting date mid-2017, salary according to the published tariff of the Austrian Science Fund

<https://www.fwf.ac.at/de/forschungsfoerderung/personalkostensaetze/>

Please send your application including a motivation letter, a CV, certificates, and names and addresses of 2-3 references (including telephone number and e-mail address) or letters of recommendation by e-mail to Prof. Peter Schattschneider: schattschneider@ifp.tuwien.ac.at, before 1. 3. 2017.