

# PhD positions available!



## Magnetic Resonance Imaging with Free Electrons on the Nanometer Scale

In this ERC Consolidator Grant project, we will establish a new platform for magnetic-resonance imaging with free electrons inside a transmission electron microscope (TEM). The central goal is to coherently manipulate and detect spin systems in specimens at nanoscale, and to exploit spin - electron interactions as a new contrast mechanism for electron microscopy, analogous to how MRI revolutionized medical imaging and ESR/NMR transformed chemistry and materials science.

By combining electron quantum optics and microwave control of spin systems as well as ultrafast electron microscopy, this project aims to enable spatially resolved magnetic-resonance spectroscopy and imaging at the nanometer scale, opening new avenues for quantum sensing, materials characterization, and fundamental studies of spin dynamics.

### Be part of it!

### We are looking for PhD students to join our Electron Quantum Optics group at TU Wien.

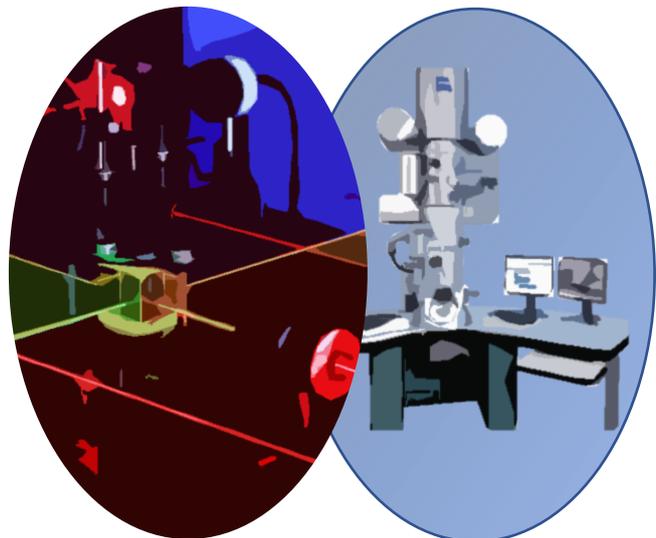
You should hold a Master's degree in physics (or equivalent) and ideally have experience related to quantum optics or electron microscopy. You will work in an international team of 2-3 people on a cutting-edge experimental setup.

Our group is part of the Vienna Center for Quantum Science and Technology (VCQ).

If you are interested, **please feel free to contact us until 4<sup>th</sup> March 2026.**

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Applicants should provide the following documents:

- CV containing a list of publications and the names of at least two professional references.
- An original piece of their scientific writing (such as a first author manuscript or thesis).



Der Wissenschaftsfonds.

