

Imaging magnetic or electric phases in 2D-materials

The field of van der Waals heterostructures, which are stacks on individual atomically thin crystal sheets, has exploded in the last decade. Comparable to a game of Nano-Lego, those van der Waals stacks can be assembled in such a way that yield electro-optical nano-devices with essentially unlimited functionalities. Further, clever stacking can also result in new, fundamental physics.

The principal goal of this Masters thesis is to image magnetic phases of novel 2D-materials with a nitrogen-vacancy based quantum camera system.

During the project you will work in close collaboration with a small team of Ph.D. students and postdocs, therefore individual effort is key to drive this Masters project.

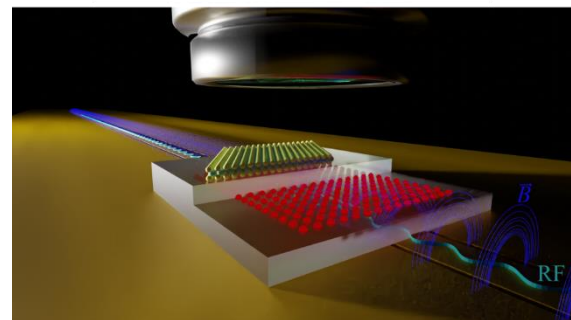
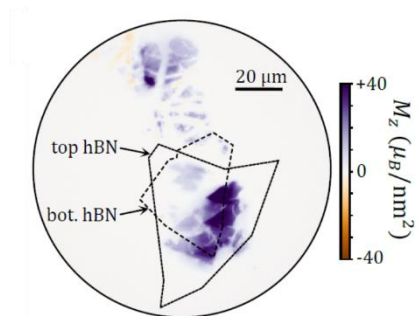
Some knowledge in the areas of van der Waals stacking, optics or cleanroom fabrication will be beneficial, but secondary to your personal motivation and commitment to this project.

You should:

(1) Be highly motivated and self-driven, (2) be practically minded with a get-things-done attitude, (3) enjoy working across a wide range of tasks (processing, optics, electronics) and (4) be willing to work in a very small team on challenging things very long hours ...

You will get:

(1) the chance to work on current hot-topic issues in the area of 2D van der Waals physics (2) gain highly sought after abilities in the field of quantum technologies (3) a sound understanding of the physics in atomically thin materials and hopefully (4) a few nice papers.



Interested? Please email finley@wsi.tum.de and Andreas.Stier@wsi.tum.de