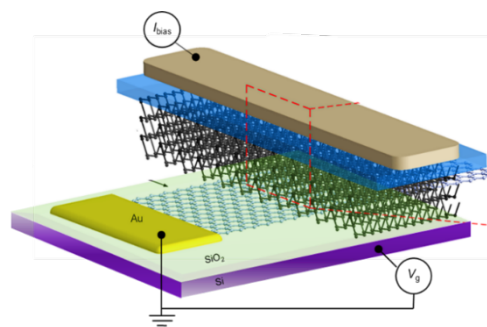


Research Fellow for Magneto-electronic circuit studies in 2D magnetic semiconductors and 2D magnetic superconductors

Several Postdoctoral Researcher Positions in the group of Prof. Barbaros Özyilmaz (<https://graphene.nus.edu.sg/barbaros/>) at National University of Singapore are available to experimentally study spintronics and magnetism in low-dimensional materials. Applicants with a Ph.D. degree in Physics, Material Science, Nanoscience and Nanotechnology, or related disciplines and strong background in low-temperature device physics should send a cover letter and CV to "barbaros@nus.edu.sg". Applications will be considered as they are received, and the positions will remain open until filled. The successful candidates will be working in state-of-the-art research environment and receive internationally competitive salary packages.

Position 1: Induced magnetism in two-dimensional semiconductor

Recently, our group has developed a novel method to induce magnetism in 2D in an otherwise nonmagnetic 2D semiconductor such as black phosphorus. We seek talented and highly motivated candidates to contribute to our ongoing efforts. Specifically, the postdoctoral researchers are expected to study the mechanism of the magnetic ordering in detail, engineer its magnetic properties further and use it in magnetic device applications.



Typical device structure to study magnetism in 2D semiconductor /2D superconductors

Position 2: Spin triplet superconductivity in van der Waals heterostructures.

Our group has extensive experience in the fabrication and characterisation of van der Waals heterostructures based on magnetic and superconducting layered materials. To support our ongoing work, we are looking for a new team member with extensive experience in low-temperature magneto-transport measurements. The candidate is expected to do research on spin triplet generation and characterisation by introducing an additional layer of a magnetic semiconductor into existing heterostructures to realize spin mixing.

Successful candidates have responsibilities of supporting PhD students in their research and doing highly collaborative research. They should have experiences in:

1. Design and development of magnetic tunnel junction or spin valve.
2. Nano fabrication (e.g. stacking of van der Waals heterostructures, e-beam lithography, nano deposition) in clean room.
3. Low-temperature electrical characterization of superconductors/semiconductors.