

Research Fellow (Spintronics) Nanyang Technological University

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Posted Oct. 17, 2024, set to expire May 6, 2025

Job Title	Research Fellow (Spintronics)
Department	School of Physical and Mathematical Sciences
Institution	Nanyang Technological University Singapore, , Singapore
Date Posted	Oct. 17, 2024
Application Deadline	Open until filled
Position Start Date	Available Immediately
Job Categories	Professional Staff Research Scientist/Associate
Academic Field(s)	Physics - Atomic/Molecular/Optical/Plasma Physics - General Sciences - General
Job Website	https://ntu.wd3.myworkdayjobs.com/en-US/Careers/details/Research-Fellow--Spintronics-_R00018772-1
Apply By Email	
Job Description	

Join Our Team at the School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore

The School of Physical and Mathematical Sciences (SPMS) at NTU Singapore hosts research and education activities in two divisions: Division of Mathematical Sciences (MAS) and Division of Physics and Applied Physics (PAP). MAS covers diverse topics ranging from pure mathematics to the applications of mathematics in cryptography, computing, business, and finance. PAP covers many

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areas of fundamental and applied physics, including quantum information, condensed matter physics, biophysics, and photonics. Over the years, SPMS has attracted talented individuals from around the world and Singapore to join as scientific leaders and researchers.

The SpiNLab is looking for a Research Fellow, led by Assoc. Prof S.N. Piramanayagam at School of Physical and Mathematical Sciences, Nanyang Technological University. The job involves exploring new physics, methods, materials (devices) and simultaneously exploiting different origins of orbital torque to achieve power-efficient spin-devices in perpendicular magnetic anisotropy materials. The job scope's demands the deposition and development of thin-film stacks and the lithography process for applications in probing new materials for spin-devices. In particular, proven experience in the field of Orbitronics is desired.

Key Responsibilities:

- Deposition and development of magnetic thin films stack
- Development of lithography processes
- Fabrication of micrometer/nanometer sized devices
- Characterization of structural and magnetic properties of materials by various techniques
- Characterization of devices using electron transport measurements and magnetic resonance spectroscopy
- Magnetic texture imaging in the deposited thin films and fabricated devices
- Micromagnetic simulations, physical modelling, and virtual instrument engineering software
- Procurement of lab equipment, consumables, and materials
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Use of analytical programming languages to analyze data

- Mentoring of PhD and Masters/undergraduate students

Job Requirements:

- PhD in Physics/Applied Physics
- Experience in managing the lab, training students, independent working and procuring the lab equipment
- Involved in experimental and simulation (theoretical) work of Orbitronics
- Expertise in sputter deposition technique, relevant characterization tools (like AFM, MFM, VSM, AGM, SEM, MOKE, Ferromagnetic Resonance Spectroscopy and several electron transport measurements equipment), device fabrication processes (lithography, etching etc.) and device measurements
- Expertise in micromagnetic simulations and some prior experience in physical modelling, as demonstrated by past publications
- Proficient in oral and written English is essential to conduct research
- Effective communication and presentations skills, demonstrated by some recognitions in the past conferences
- Good command of the analytical programming language (Python/Matlab) and graphical programming software (LabVIEW)
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Ability to work independently as well as in a team

- Capability to assist PI in training new research students

The College of Science seeks a diverse and inclusive workforce and is committed to equality of opportunity. We welcome applications from all and recruit on the basis of merit, regardless of age, race, gender, religion, marital status and family responsibilities, or disability.

We regret to inform that only shortlisted candidates will be notified.

Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

Contact

School of Physical and Mathematical Sciences
Nanyang Technological University
Singapore