Senior Research Fellow (Computational Electromagnetism and Nanophotonics)
Nanyang Technological University

Job Title	Senior Research Fellow (Computational Electromagnetism and Nanophotonics)
Department	School of Electrical and Electronic Engineering
Institution	Nanyang Technological University Singapore, , Singapore
Date Posted	May 7, 2025
Application Deadline	Open untill filled
Position Start Date	Available Immediately
Job Categories	Research Scientist/Associate
Academic Field(s)	Electrical and/or Electronics Computer Engineering Engineering - Other
Job Website	https://ntu.wd3.myworkdayjobs.com/Careers/job/NTU-Main-Campus-Singapore/Senior-Research-Fellow--Computational-Electromagnetism-and-Nanophotonics-_R00020647
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Job Description

School of Electrical and Electronic Engineering is one of the founding Schools of the Nanyang

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Technological University. Built on a culture of excellence, the School is renowned for its high academic standards and research. With over 3,000 undergraduates students and 2,000 graduate students it is one of the largest EEE schools in the world and ranks 4th in the field of Electrical & Electronic Engineering in the 2025 QS World University Rankings by Subjects.

Today, the School has become one of the world's largest engineering schools that nurtures competent engineers and researchers. Each year, the School graduates over a thousand students who are ready to take on great ambitions and challenges.

For more details, please view: https://www.ntu.edu.sg/eee.

We are seeking a Senior Research Fellow (SRF) who is highly skilled in and deeply passionate about computational electromagnetism and mathematical physics/engineering. The SRF should have strong background in computational methods for solving Maxwell's equations – strong foundations in quantum electrodynamics (QED) are a significant bonus. The role of SRF will focus on developing ab initio theory and developing software to describe and study groundbreaking mechanisms in electron-photon and electron-matter interaction, pertaining to the compact, efficient generation of extreme ultraviolet light for applications including EUV spectroscopy and EUV nanolithography.

Key Responsibilities:

- Computationally solve electrodynamics problems involving electron-photon and electron-matter interactions in the extreme ultraviolet (EUV) regime
- Develop new, efficient software for modeling unprecedented electromagnetic phenomena, using languages such as C++ and Python
- Formulate new theories pertaining to EUV generation, obtained ab initio from Maxwell's equations and quantum electrodynamics/quantum field theory
- Lead papers and publish in high-impact journals
- Present at top-tier international conferences.
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Assist PI in writing grants and supervision of graduate and undergraduate students.

- Provide logistical support pertaining to laboratory operation for the project.

Job Requirements:

- PhD degree in physics, mathematics, engineering or related field
- Strong background in electrodynamics simulations techniques
- Strong background in C++, Python or similar languages
- Strong background in theoretical physics and mathematical physics
- Good written and oral communication skills
- Proficiency in nanofabrication and experimental design
- Interpersonal skill: Ability to work under pressure, Ability to work independently, develop solutions under strict timelines, meticulous and eye for details, excellent organizational / time management skills
- Entry level candidates are welcome to apply

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

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Contact Information

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

Contact

Singapore