

Seeking Postdocs and PhD candidates in quantum physics, nanophotonics and free electron science (NTU Singapore)

The L. J. Wong Group of Free Electron Nanophotonics is actively recruiting postdocs and PhD candidates who are passionate about tackling longstanding global challenges in semiconductors, sustainability, and healthcare. Join our mission to push the boundaries of science and technology, and make a lasting impact on the future. Led by Prof. Liang Jie Wong, our research has been recognized as a **Falling Walls 2024 winner in the Physical Sciences category** under the topic “Breaking the Wall of Quantum X-ray Tech” (<https://falling-walls.com/foundation/people/liang-jie-wong>). Our fundamental-science-driven technologies have been licensed and have attracted the attention of industries such as AMD, Inc and Thales. Our group has a strong record of nurturing outstanding talent for positions in academia and deep-tech industries. Read more about our research and achievements at our group website <https://sites.google.com/view/ljwgroup>.

Opening #1: Postdoc in nanophotonics for scintillators and light emitters

Description: We are seeking talented postdoctoral fellows to push the frontiers of nanomaterial, metamaterial and quantum material design, with the ultimate goal of designing and demonstrating improved platforms for X-ray scintillators, light emitters and other applications. Both theoretical/numerical and experimental expertise is highly sought after.

Responsibilities: Research and development • Publishing in top-tiered peer reviewed journals • Presenting at top-tier international conferences • Assisting PI in grant writing • Supervision of graduate and undergraduate students

Prerequisites: PhD or equivalent in related field • Highly independent, disciplined and self-motivated • Team player • Ability to deliver excellent work under time pressure • Preferred: strong background in physics, mathematics and/or relevant experimental work

Opening #2: Postdoc in free electron-driven light emission

Description: We are seeking talented postdoctoral fellows to spearhead the discovery of novel science in free electron-driven light emission. Free electron-driven light emission is a historically significant subject that has birthed wondrous scientific instruments including free electron lasers and synchrotrons. However, many of these facilities, while capable of producing X-ray and EUV emission of unprecedented brightness, remain relatively enormous, expensive and inaccessible. Our group aims to exploit novel quantum phenomena that could lead to the realization of miniaturized and more sustainable versions of these instruments, for X-ray and EUV applications including semiconductor failure analysis, EUV/X-ray lithography, medical imaging and security scanning.

Responsibilities: Research and development • Publishing in top-tiered peer reviewed journals • Presenting at top-tier international conferences • Assisting PI in grant writing • Supervision of graduate and undergraduate students

Prerequisites: PhD or equivalent in related field • Highly independent, disciplined and self-motivated • Team player • Ability to deliver excellent work under time pressure • Preferred: strong background in physics, mathematics and/or relevant experimental work

Opening #3: PhD scholarship in nanophotonics for scintillators and light emitters

Description: We are seeking talented PhD candidates to push the frontiers of nanomaterial, metamaterial and quantum material design, with the ultimate goal of designing and demonstrating improved platforms for X-ray scintillators, light emitters and other applications. Both theoretical/numerical and experimental expertise is highly sought after.

Responsibilities: Research and development • Publishing in top-tiered peer reviewed journals • Presenting at top-tier international conferences • Assisting PI in grant writing • Supervision of undergraduate students • Teaching assistantship

Prerequisites: BSc or equivalent in Physics, Mathematics, Engineering, or related disciplines • Highly independent, disciplined and self-motivated • Team player • Ability to deliver excellent work under time pressure • Preferred: strong background in physics, mathematics and/or relevant experimental work

Opening #4: PhD scholarship in free electron-driven light emission

Description: We are seeking talented PhD candidates to spearhead the discovery of novel science in free electron-driven light emission. Free electron-driven light emission is a historically significant subject that has birthed wondrous scientific instruments including free electron lasers and synchrotrons. However, many of these facilities, while capable of producing X-ray and EUV emission of unprecedented brightness, remain relatively enormous, expensive and inaccessible. Our group aims to exploit novel quantum phenomena that could lead to the realization of miniaturized and more sustainable versions of these instruments, for X-ray and EUV applications including semiconductor failure analysis, EUV/X-ray lithography, medical imaging and security scanning.

Responsibilities: Research and development • Publishing in top-tiered peer reviewed journals • Presenting at top-tier international conferences • Assisting PI in grant writing • Supervision of undergraduate students • Teaching assistantship

Prerequisites: BSc or equivalent in Physics, Mathematics, Engineering, or related disciplines • Highly independent, disciplined and self-motivated • Team player • Ability to deliver excellent work under time pressure • Preferred: strong background in physics, mathematics and/or relevant experimental work

All applicants should send their CV (including full academic transcripts for PhD applicants), as well as the contact details of 2 referees, to Prof. Liang Jie Wong at liangjie.wong@ntu.edu.sg. Any enquiries are most welcome too.

Please feel free to send this flyer to interested parties. Your help in disseminating our job openings is very much appreciated!