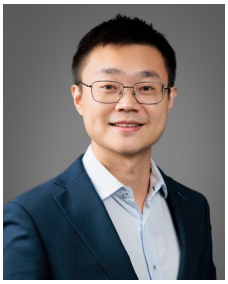


Dear Colleagues & Students,

You are cordially invited to a special seminar

Integrated quantum photonics on thin-film lithium niobate

Presented by:



Assistant Professor Di Zhu
Department of Materials Science and Engineering, National University of Singapore

Date: **5th Nov 2026, Thursday** Time: **11:00am-12:00pm**

Venue: **Block EA, Level 6, EA-02-11 Seminar Room (Map)**

Hosted by: **Associate Professor Daria Andreeva-Baeumler**

Abstract:
Scaling today's photonic quantum technologies toward practical computation and simulation faces critical challenges. It requires complex systems with thousands to millions of components, which are difficult to implement using traditional bulk optics. Integrated photonics offers a viable path. Recently, thin-film lithium niobate (TFLN) has emerged as a promising material platform for integrated quantum photonics, offering many attractive properties that are missing in silicon photonics, such as large electro-optic coefficients, strong second-order nonlinearity, and engineerable ferroelectric domains. In this talk, we will discuss our recent efforts in developing critical hardware components on TFLN for photonic quantum information processing. In particular, we will focus on integrated quantum light sources based on periodically poled TFLN waveguides and cavities, including entanglement sources, high-purity single-photon sources, squeezed-light sources, and quantum frequency combs. We will also briefly cover related topics such as on-chip integration of superconducting nanowires for single-photon detection, lasers for quantum sensing, and electro-optic modulators for light control.

Biography:
Di Zhu is a Presidential Young Professor in the Department of Materials Science and Engineering at the National University of Singapore (NUS). His research interests include integrated photonics, quantum photonics, applied superconductivity, and nanofabrication. He received his B.Eng. from Nanyang Technological University and Ph.D. from the Massachusetts Institute of Technology. Before joining NUS in 2023, he worked as a postdoctoral fellow at Harvard University and a research scientist at the Agency for Science, Technology and Research (A*STAR). He is a recipient of the National Research Foundation Fellowship, Temasek Professorship, MIT TR35 (Asia Pacific) award, Harvard Quantum Initiative Postdoctoral Fellowship, and MIT Jin-Au Kong thesis award.

Looking forward to seeing all of you!