MACQUARIE University

MQ Photonics Research Centre Seminar

Wednesday, 11 August 2021, 2:00 pm
(Online via the zoom link below)

Nanophotonic effects for sustainable energy and integrated devices

Dr Alex Y. Song

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Abstract:

In this talk, I will discuss two new frontiers of nanophotonics. I'll begin with the passive radiative cooling and heating textiles, which employs nanophotonic structures to achieve superior thermal performance than any traditional textiles. Such a nanomaterial can lead to significant energy saving in space conditioning. In the second topic, I'll discuss the nonreciprocal light propagation in a gain-loss modulated waveguide. Such a waveguide exhibits a direction-dependent parity-time (PT) phase transition, which can be used to design robust integrated optical isolators that are magnetic-free. These topics highlight the unprecedented capabilities of nanophotonic structures in sustainable energy and photonic integration.

Speaker biography:

Dr. Alex Y. Song is a Senior Lecturer in the School of Electrical and Information Engineering at The University of Sydney. He conducted postdoctoral research in the E. L. Ginzton Laboratory and the Department of Electrical Engineering at Stanford University. He received his Ph.D. in Electrical Engineering from Princeton University. He completed his B.S. in Mathematics and Physics and M.S in Electrical Engineering at Tsinghua University.

URL to join: https://macquarie.zoom.us/j/85829287435
Dial-in phone line: +61 2 8015 2088, Meeting ID: 858 2928 7435