



FLEET

ARC CENTRE OF EXCELLENCE IN
FUTURE LOW-ENERGY
ELECTRONICS TECHNOLOGIES

FLEET RESEARCH SEMINAR

Synthesis and electronic structure of Nickelate superconductors

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11AM 4 FEB 2021



ZOOM LINK TO BE SENT UPON REGISTRATION

I will present our observation of superconductivity in an infinite-layer nickelate thin film synthesized by a soft-chemistry approach, and the study of its superconducting anisotropy and phase diagram. This system is of particular interest due to its potential relationship with the high- T_c cuprate superconductors, in that they share a similar crystal structure and starting electronic configuration. I also highlight the key aspects of its electronic structure, which turn out to be inherently distinct from cuprates, including the unusual role of Nd bands. Finally, I will suggest how new applications of kinetic-based synthetic approaches in oxide heterostructures provide a broad opportunity

to create novel quantum systems in previously inaccessible ways

About the Speaker: Dr Li's main research interests span across condensed-matter physics and materials science, focusing on atomic-scale fabrication of oxide heterostructures and nanomembranes, kinetic based synthesis of unconventional quantum materials, low-dimensional superconductivity, oxide interfaces for emergent states, etc. In 2019, a team led by Dr Li and Prof Hwang discovered the first nickelate superconductor, which had been a target of continuous materials search for over three decades.

DATE: Thursday 4 January 2021

TIME: 11:00AM–12:00PM

VENUE: Zoom

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