

**DEPARTMENT OF MECHANICAL ENGINEERING****SEMINAR****Online**

Title: Understanding structure-property relationship of two-dimensional metal halide perovskites

Speaker: Miss. Yumeng Song (MPhil candidate)
Department of Mechanical Engineering
The University of Hong Kong
Hong Kong

Date: 6 May, 2022 (Friday)

Time: 10:30 a.m. (Hong Kong Time)

Zoom meeting: 1) Link to join the meeting:

<https://hku.zoom.us/j/97885900617>

2) Meeting ID: 978 8590 0617

3) Password: 123456

Abstract:

Two-dimensional (2D) metal halide perovskites have emerged as promising materials for next-generation solar cells and light-emitting diodes thanks to their outstanding optoelectronic properties, facile tunability and superior stability over their 3D counterparts. However, the detailed structure-property relationship of 2D perovskites underlying their optoelectronic properties has remained unclear. In this project, we design and synthesize 2D perovskite single crystals based on various A-site organic cation and spacer molecules. We then use a combination of steady-state and time-resolved optical spectroscopy methods to characterize the exciton and charge properties and dynamics, with the aim of revealing how they are affected by structural properties such as lattice softness and distortion. Our results will help develop a fundamental understanding of 2D perovskites and enable rational material design and development.

ALL INTERESTED ARE WELCOME

For further information, please contact Dr. P.C.Y. Chow at 3910 7905.

Research area: Advanced Materials