

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

Title: Lead Halide Perovskite Micro-arrays Fabricated by Reusable Metal Mesh Templates

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Date: 29 April, 2021 (Thursday)

Time: 2:30 p.m.

Zoom Link: 1) Link to join the meeting:

<https://hku.zoom.com.cn/j/7972644154?pwd=SCtwYzhmdEVIR2l6ZGdhUXhsc1Y4Zz09>

2) Meeting ID: 7972644154

3) Password: pL5ze6

Abstract:

Halide perovskites have attracted tremendous interest due to their superior optoelectronic properties, including high absorption coefficients, tunable bandgap, high color purity, and long-ranged balanced electron and hole transport, which makes perovskite materials promising for diverse optoelectronic applications. However, high-resolution patterning of perovskite arrays is challenging owing to their extreme instability in general photolithography solvents. In this work, a novel patterning process for perovskite arrays is performed, where the high-resolution, large-scale metal mesh template film is adopted to

pattern perovskite arrays through drop casting. This approach is based on photolithography to manufacture a reusable metal mesh template, and the metal mask film can be easily attached to the arbitrary substrate as a mask with the assistance of capillary force and be detached after the coating. Using this approach, we successfully fabricated highly crystalline perovskite micro-disk arrays. The morphological characterization illustrates the excellent fidelity of the perovskite micro-disks to the metal mesh template. This method enables the patterning of perovskite micro-arrays on versatile substrates with reusable metal mesh templates and can be further applied to other materials to facilitate the development of micro-structured optoelectronic devices.

ALL INTERESTED ARE WELCOME

For further information, please contact Dr. W.D. Li at 3917 8982.

Research area: Advanced Materials