



Department of  
Mechanical Engineering  
The University of Hong Kong



## SEMINAR

### Smart control of photoresponsive microscopic agents

**Date:** 27 April, 2023 (Thursday)

**Time:** 4:30 p.m.

**Venue:** Room 7-34, Haking Wong Building, HKU

**Speaker:** Mr. Jiawei Li (PhD candidate)  
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#### Abstract:

Photoresponsive materials in natural and artificial systems have tremendous potential in fabrication of smart, reconfigurable materials for nanoengineering and biomedical applications. For example, phototactic microorganisms can be manipulated by global heterochromatic light to exhibit a rich variety of collective behaviors; Sophisticated and versatile locomotion of microrobots can be realized by structured light stimulation. However, effective applications of natural and artificial photoresponsive microscopic agents would require the use of complex spatiotemporal light patterns. Here, we propose to develop a programmable light stimulation system for controlling photoresponsive microscopic agents in a highly controllable manner. The proposed system has the following advantages: 1) high-resolution patterned light with the scale of one micron; 2) highly controllable spatiotemporal light patterns; 3) AI-powered system to control microscopic agents to perform complex tasks. This research will be the fundamental step towards autonomous control of active materials at microscales.

ALL INTERESTED ARE WELCOME

For further information, please contact Dr. A.C.H. Tsang at 3917 1505.