



DEPARTMENT OF MECHANICAL ENGINEERING  
AND  
MEDICAL ENGINEERING PROGRAMME

SEMINAR

**Online**

**Title:** A microfluidic platform for disease physiological micro-environment modeling

**Speaker:** Mr. Ye TIAN (PhD candidate)  
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**Date:** 30 April, 2021 (Friday)

**Time:** 3:00 p.m.

**Zoom Link:** 1) Link to join the meeting:

<https://hku.zoom.us/j/96469760668?pwd=bURqNWl0RjlsQWlmUzV4cTJlENllpdz09>

2) Meeting ID: 964 6976 0668

3) Password: 666666

**Abstract:**

In some sense, the human body is a large group of cell assemblies immersed in various physiological micro-environments, such as glomerulus, alveoli, and vascular networks. For this reason, microfluidics has become increasingly popular in studying how tissues are formed as well as how their organization and functioning are affected by diseases. Compared to normal dish culture, the volume of culture medium in a microfluidic device is at nanoliter-scale, similar to that in vivo. A microfluidic system could also sustain autocrine and paracrine factors to keep the interactions of cells because of its alterable physiological volume ratio between cells and extracellular matrix, which is also difficult to achieve in conventional culturing techniques. Finally, the fact that we can control the flow rate and duration in the micro-channel, and therefore adjust the shear stress sensed by the cells, also provide a more realistic mechanical micro-environment mimicking the in vivo situation. In this talk, I will present a microfluidic system we have designed to investigate the influences of disease such as biliary atresia on the functioning of bile duct as well as the efficacy of possible treatment strategies.

ALL INTERESTED ARE WELCOME

For further information, please contact Dr. Y. Lin at 3917 7955.

Research area: Biomedical Engineering