



DEPARTMENT OF MECHANICAL ENGINEERING
AND
MEDICAL ENGINEERING PROGRAMME

SEMINAR

Online

Title: Establishing Planar cell polarity in in vitro system using multiphoton fabrication

Speaker: Miss Razaghzadeh Bidgoli Mina (PhD candidate)
Department of Mechanical Engineering
The University of Hong Kong
Hong Kong

Date: 28 April, 2022 (Thursday)

Time: 9:30 a.m. (Hong Kong Time)

Zoom Link: 1) Link to join the meeting:

<https://hku.zoom.us/j/97713597815?pwd=Z0k5K3Y4OUFydlliUFdMdFdEaThPQT09>

2) Meeting ID: 977 1359 7815

3) Password: 391073

Abstract:

Birth defects including developmental abnormalities causes infant mortality and death of children. A leading mechanism which its disruption can cause sever birth defects is known as “planar cell polarity (PCP)”. PCP refers to polarization along the plane of a cell sheet; indeed, the asymmetric distributions of cells’ proteins can govern the coordinated direction and behaviour of a collective cells through cellular adhesion and cytoskeleton components. In vivo studies showed that Wnt molecules, as a large family of secreted proteins, act as important global cue for PCP orientation since they can bind to the Frizzled (Fz) receptor, a core PCP protein, in a gradient manner of distribution. However, there is currently no in vitro system to directly study the mechanism of PCP initialization. To directly evaluate the effect of Wnt molecules in a gradient manner on PCP establishment, we want to engineer a synthetic platform using multiphoton microfabrication technology which has been established in our lab. Our primary results showed that a gradient concentration of Wnt5a molecules can be immobilized on the fabricated patterns. In this presentation, fabrication of micropatterns and immobilization of gradient concentration of Wnt5a molecule in a controllable manner will be discussed.

ALL INTERESTED ARE WELCOME

For further information, please contact Prof. B. Chan at 39172632.

Research area: Biomedical Engineering