

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

Title: High Throughput Screening of Fluorogenic RNA Aptamers Using Droplet-based Microfluidics for Live Cellular RNA Imaging

Speaker: Miss Dey Poonam Aditi (MPhil Candidate)
Department of Mechanical Engineering
The University of Hong Kong
Hong Kong

Date: 25 April, 2022 (Monday)

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

Zoom meeting: 1) Link to join the meeting:

<https://zoom.us/j/99718496174?pwd=cW94R2VrbGdhcTMvVEt5QTJoM2JmUT09>

2) Meeting ID: 997 1849 6174

3) Password: 7qZQn0

Abstract:

Live cellular RNA imaging has become an indispensable tool in cellular biology as vital roles of biologically significant RNAs are discovered. Fluorogenic RNA aptamers are single-stranded oligonucleotides that exhibit strong fluorescence upon target-binding and showcase great potential in real-time RNA visualization. Therefore, we have developed a droplet-based microfluidic platform that combines the generation, injection, and sorting of droplets, for high-throughput screening of fluorogenic RNA aptamers. The sorting is programmed to select sequences that specifically bind to a new green fluorescent protein (GFP) fluorophore-mimic from a large DNA library by generating millions of droplets, each containing no more than one DNA sequence, and sorting the top 0.5%-2% of the fluorescent droplets at about 175 Hz. We have completed three rounds of sequence enrichment with our microfluidic platform, with droplets exhibiting strong fluorescence following each selection round.

ALL INTERESTED ARE WELCOME

For further information, please contact Prof. A. Shum at 3917 7904.

Research areas: Advanced Materials and Biomedical Engineering