THE UNIVERSITY OF HONG KONG

DEPARTMENT OF MECHANICAL ENGINEERING

SEMINAR

Online

Title: **Motility control in biological microswimmers**

Speaker: **Dr. Kirsty Y. Wan**
Living Systems Institute
University of Exeter
UK

Date: **14 December, 2020 (Monday)**

Time: **5:00 p.m. (Hong Kong Time)**

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

https://hku.zoom.us/j/92073350067?pwd=N3R2TC83RGdvWTkxWmdQSC9xMmFjdz09

2) Meeting ID: 920 7335 0067

3) Password: 508759

Abstract:
It is often assumed that biological swimmers conform faithfully to certain stereotypes assigned to them by physicists and mathematicians, when the reality is in fact much more complicated. In this talk we will use a combination of theory, experiments, and robotics, to understand the physical and evolutionary basis of motility control in a number of distinguished organisms. These organisms can differ markedly in terms of their size, shape, and arrangement of locomotor appendages, but are united in their use of cilia - the ultimate shape-shifting organelle - to achieve self-propulsion. We will reveal how model species of single-celled eukaryotes control their ciliary dynamics to navigate and steer toward cues in three dimensions. Finally, we will discuss the implications of non-

equilibrium statistical physics for microswimmers, particularly the emergence of macroscopic flux cycles in a swimmer's gait repertoire.

ALL INTERESTED ARE WELCOME

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

Research area: Thermofluids