Seminar

Department of Biomedical Engineering
香港城市大學
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Magnetic hydrogel for cancer study and wound healing

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Time: 3:00 p.m.
Venue: LT-16, 4/F, Yeung Kin Man Academic Building

Abstract

Magnetic hydrogels are materials containing magnetic microparticles which help transduce magnetic fields into mechanical forces. In the presence of a static magnet, the stiffness of magnetic hydrogels can be altered to investigate the reversible effects of matrix softening and stiffening on cellular behaviours. Here, I will describe how we exploit this unique feature of our material for cancer study. The World Health Organization estimates that 10% of the world's population suffers from diabetes, and diabetic patients has a 15-25% lifetime risk of getting diabetic foot ulcers. Every 20s, there is a lower extremity amputation worldwide. In the second half of my talk, I will describe the use of magnetic hydrogel for mechanical stimulation of cells to synergistically accelerate diabetic wound healing.

Biography

Andy Tay graduated in 2014 from NUS with a First-Class Honours in Biomedical Engineering. He later headed to the University of California, Los Angeles for his PhD studies and graduated in 2017 as the recipient of the Harry M Showman Commencement Award. Andy next received his postdoctoral training at Stanford University before heading to Imperial College London as an 1851 Royal Commission Brunel Research Fellow. He is currently a Presidential Young Professor in NUS. Andy is a recipient of international awards including the Interstellar Initiative Early-Career Faculty Award, Christopher Hewitt Outstanding Young Investigator Award, Terasaki Young Innovator Award. He is listed as a 2019 Forbes 30 Under 30 (US/Canada, Science), 2020 World Economic Forum Young Scientist, 2020 The Straits Times '30 and Under' Young Singaporeans to Watch and 2022 Top 2% Scientist in the World by Stanford University.