



**Seminar Topic:
Biomimetic Scaffolds in Nerve Regeneration: From Mimicking the
Extracellular Matrix to Neuronal Axons**

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Abstract

Fiber constructs closely mimic the size-scale and architecture of the natural extracellular matrix. When presented to appropriate cell types, engineered fibers may also pose as artificial axons. Combined with the incorporation of biomolecules, these scaffolds provide synergistic biophysical and biochemical cues to cells. Here, we will discuss our recent findings on the roles of fiber-mediated mechanotransduction on neural cell fate, as well as gene silencing on nerve regeneration and remyelination, using spinal cord injury as a proof-of-principle.

Biography

Dr Sing Yian CHEW is an Associate Professor at School of Chemical and Biomedical Engineering, Lee Kong Chian School of Medicine and School of Materials Science and Engineering at Nanyang Technological University, Singapore. She is known for her contributions in designing biomimetic scaffolds to understand and control cell fate. Dr Chew's most significant contribution is in the field of scaffold-mediated delivery of gene-silencing and biomimicking physical signals for neural tissue regeneration and remyelination. Specifically, her lab engineers' bio-functional platforms for long-term delivery of biologics. These scaffolding constructs may be used for understanding and directing neural tissue regeneration after traumatic injuries, stem cell fate and host-implant integration.

Since joining NTU, Dr Chew has continued to embark on scientific learning and exchanges by serving as Visiting Scholar/Professor at Johns Hopkins University, University of Edinburgh, INSERM (U698 and U791); University of Paris 13; University of Nantes; Jinan University in Guangzhou, China; Wyss Institute at Harvard. She is an Associate Editor at ACS Applied Materials & Interfaces. She also serves as the editorial board member of Biomaterials, Experimental Neurology, Tissue Engineering, Journal of Biomedical Materials Research, Part A, Drug Delivery and Translational Research, Journal of Tissue Engineering.

Wednesday, 16 February 2022 || Time: 2:00 pm – 3:00 pm ||
Live Streaming Link (Zoom Meeting): <https://ntu-sg.zoom.us/j/83464497262>
Meeting ID: 834 6449 7262 Passcode: 160222
Hosted by: Associate Professor Terry W.J. Steele