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Host: Dr Deepak Choudhury

Seminar Abstract

Vascularisation is one major obstacle in bioprinting and tissue engineering. In order to create thick tissues or organs that can function like original body parts, the presence of a perfusable vascular system is essential. However, it is challenging to bioprint a hydrogel-based three-dimensional vasculature like structure in a single step. In this project, we report a new hydrogel-based composite that offers impressive printability, shape integrity, and biocompatibility for 3D bioprinting of a perfusable complex vasculature-like structure. The hydrogel composite can be used on a non-liquid platform and is printable at human body temperature. Moreover, the hydrogel composite supports both cell proliferation and cell differentiation. Our results represent a potentially new vascularisation strategy for 3D bioprinting and tissue engineering.

About the Speaker

I received my B.Eng. (1st class honours, Chemical Engineering) in 2012 from Thammasat University, Thailand. I obtained my PhD in 2018 from School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore. Before joining A*STAR, I worked in both industry and higher education institutes. My research interests include biodegradable polymer fabrication, hydrogels and bioprinting for cultured meat and tissue engineering applications.