Department of Biomedical Engineering
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3D printing/electrospinning for biomedical applications

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THE UNIVERSITY OF EDINBURGH

Hosted by Prof. ZHANG Qinrong

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TIME
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VENUE
Y-4702, 4/F Yeung Kin Man Academic Building

ABSTRACT

Three-dimensional (3D) printing is constantly transforming from object-oriented prototyping at a small scale to much more comprehensive manufacturing platforms and has become an attractive candidate for biomedical applications. However, many current 3D printing approaches lack the ability to produce filaments with high resolution necessary for creating scaffolds for a range of tissues. In addition, the pore size of 3D-printed scaffolds is significantly larger than the cell size, adversely affecting cell-seeding efficiency and tissue formation. Electrospinning uses high voltage for generating nanofibers with large specific surface areas. It is the most efficient method for producing nanofibers with a well-defined structure, which can mimic the physical functions of the native extracellular matrix, providing many attachment points for cell adhesion. In this talk, I will present the different combination methods of 3D printing and electrospinning processes for the fabrication of biomaterials, including vascular grafts and bone scaffolds.

BIOGRAPHY

Norbert Radacsi is a Senior Lecturer in Chemical Engineering and director of the NanoMaterials Laboratory at The University of Edinburgh. He obtained his Ph.D. at the Delft University of Technology in 2012. Prior to his current position he was postdoctoral researcher at Purdue University and California Institute of Technology (Caltech). He has pioneered a new type of 3D electrospinning technology. His interdisciplinary research includes areas of advancing electrospinning technology and bioprinting, developing wearable sensors and energy harvesters, and producing novel biomaterials. Website: *https://www.radacsigroup.co.uk*