

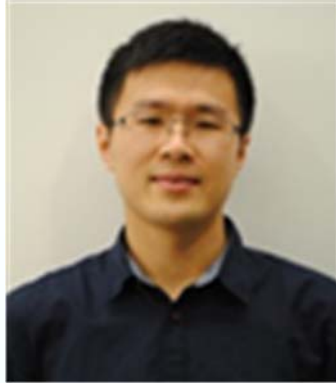


The Chinese University of Hong Kong
Department of Biomedical Engineering



Time: 10:00 am, 21 Dec 2017 (Thur)

Venue: Room 222, Ho Sin Hang Engineering Building, CUHK



**Designer Biomaterials for Reverse Engineering of
Extracellular Matrix at High Resolution**

Dr. Xiao-Hua Qin

Marie-Curie Research Fellow

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Abstract

Advanced 3D cell culture techniques are increasingly needed to understand basic cell biology, discover drug therapies, and grow de novo functional tissue replacements for regenerative medicine. Hydrogels have emerged as artificial extracellular matrices (ECM) for culturing mammalian cells in well-defined environments that emulate key aspects of the native tissue. Cell fate can be controlled predictably by tailoring the biochemical and biomechanical properties of the matrix. In this talk, I will present our efforts in developing cell-compatible and light-sensitive hydrogels for rapid synthesis of 3D cellular environments in a user-dictated fashion. Moreover, I will highlight the usefulness of two-photon micropatterning technique to site-specifically functionalize hydrogel matrices and to spatiotemporally control cell-material interactions in 3D at high resolution.

Biography

Xiao-Hua Qin received his PhD degree in Macromolecular Chemistry with Prof. Robert Liska from Vienna University of Technology (Austria) in 2014, where he established advanced cell-compatible photopolymers for two-photon microfabrication of 3D hydrogel scaffolds for tissue engineering applications. He received the Graduate Student Award of the Swiss Biomaterials Society in Davos in 2013. Afterward, he carried out postdoctoral research with Prof. Heinz Redl at the Ludwig Boltzmann Institute for Traumatology, where he co-developed synthetic biomaterials for wound treatment and soft tissue regeneration applications. Currently, he is a Marie-Curie Research Fellow at the Swiss Federal Laboratories for Materials Science and Technology (an ETH institute). His research is focused on developing novel tools to study and manipulate cell-material interactions in 3D environments. His research interests include: biomaterials, photochemistry, two-photon micropatterning and in situ tissue engineering.

***** ALL ARE WELCOME*****

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