Special Issue

Chips for Cells: Microfabrication Technologies for Tissue Engineering and Microphysiological Systems

Message from the Guest Editor

Microfabrication and microfluidics enable a high spatial resolution of cell positioning and patterning, and opens up new avenues to increase the resolution of analysis, which push the boundaries of in vitro studies towards more advances. Organ-on-a-chip (OOC) is a sophisticated form of cell culture architecture that ensures precise cellular positioning and cell polarization similar to in vivo. Increasing the biological complexity would require a more complex fluidic network, hence increasing the complexity of the OOC devices. OOC is an engineering-driven technology and has benefited from well-established multi-engineering disciplines. Recently, convergence of 3D (bio) printing with microfluidics gives extra momentum in the direction of technology design and commercialization. We are delighted to announce this Special Issue that intends to include the most relevant work in microfabrication technologies for cell culture. We emphasize the interface between device engineering and cell culture, and how the engineering principle can be used to bridge the existing technological gap between in vivo and in vitro studies.

Guest Editor

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