Special Issue

Microfluidic Applications in Synthetic Biology

Message from the Guest Editors

The rising field of synthetic biology has tremendous potential to constructively disrupt biopharmaceutical, agricultural and biofuel industries. A major aim of synthetic biology is also to produce artificial cells capable of performing diverse functions of our choosing. Closely following the heels of synthetic biology are microfluidic technologies that give us unprecedented control and awareness over the microenvironment of cells and cell-like material. From this capability comes, not only the analysis, but also the production of organelle-like or even cell-like constructs. In this special issue, we invite researchers to present microfluidics-based work involving both top-down approaches, using cell-derivatives, as well as bottom-up approaches, using molecular self-assembly, for constructing modular cell components. We are also interested in microfluidics-based work involving nucleic acid assembly, high throughput microdroplet screening, cell-on-a-chip analyses, as well as advances in microfabrication that would impact synthetic biology. We welcome original research work, short communications, critical and tutorial reviews, and insights or perspectives related to this topic.

Guest Editors

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