

ICB PhD public presentations**OPTOFLUIDIC SYSTEMS FOR
CONTROLLED CHEMICAL AND
BIOLOGICAL EXPERIMENTATION****Tianjin Yang**

The deMello group

Supervisor: Prof. Dr. Andrew deMello

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ETH Hönggerberg, 27/02/2018

HCI D8, 15.00 h

Project Summary: Droplet-based microfluidic systems have attracted significant attention due to their utility in complex and high-throughput chemical and biological experimentation. Work in this thesis is focused on further developing droplet-based microfluidic technologies, through the realization of novel optofluidic platforms for controlled, sensitive and high-throughput experimentation. Specifically, we report the design, fabrication and testing of a high-sensitivity, absorbance and fluorescence detection scheme integrated with a droplet microfluidic system for probing fast biomolecular kinetics. Furthermore, we introduce a simple method for fabricating solvent resistant microfluidic systems that allows the performance of small-molecule organic chemistry in highly efficient flow-based formats. Finally, we describe the development a droplet-based microfluidic system for the controlled synthesis of porous, polymeric micro-particles. Such a module allows for the flexible and precise control of particle size and porosity in multidrug delivery applications.

CV. Tianjin began her PhD studies in the deMello group in 2014. She obtained her Masters degree in Medicinal and Industrial Pharmaceutical Sciences at ETH Zurich and Bachelors degree in Pharmaceutical Engineering at Southeast University in China. She has also held internship at the Novartis Institute for BioMedical Research (Basel) and worked as a research assistant in the Morbidelli group at ETH Zurich.