

CANCAM 2019

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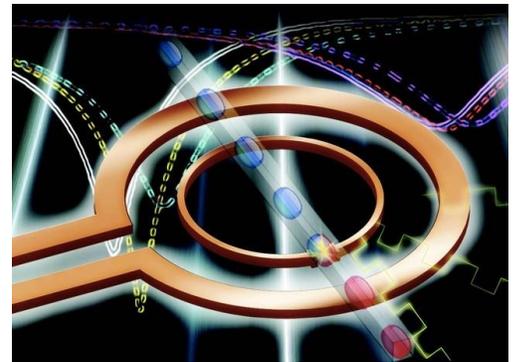


Droplet Microfluidic Platform for High Throughput Analysis Prof. Carolyn Ren

Keynote speaker

29th of May 2019, CANCAM 2019, Université de Sherbrooke

Lab-on-a-Chip is a concept of integrating multiple chemical or biological assays that are usually performed using different facilities at traditional laboratories, into one single microfluidics platform. Droplet microfluidics platform utilizes nanoliter-sized drops as vesicles for reactions. These drops can be generated uniformly at kHz rates in microchannel networks by injecting one fluid (i.e. water) into another immiscible fluid (i.e. oil) making droplet microfluidics a powerful platform for high throughput analysis towards material synthesis, life science research and drug discovery. The core of droplet microfluidics is the techniques for drop manipulation (generating, merging, splitting, trapping, sensing and heating). This talk summarizes Ren's work on droplet microfluidics with a focus on the fundamental studies of droplet microfluidics, microwave sensing and heating, and active control of individual droplets.



Dr. Ren received her PhD in Mechanical Engineering at the University of Toronto. She is currently a professor of Mechanical and Mechatronics Engineering at the University of Waterloo (UW) and holds the Canada Research Chair in Droplet Microfluidics and Lab-on-a-Chip Technology. She is directing Waterloo Microfluidics Laboratory focusing on advancing fundamental knowledge of microfluidics and developing Lab-on-a-Chip technologies which have significant impact on a wide range of applications such as material synthesis, protein separation, and water quality sensing. Besides the Canada Research Chair, Dr. Ren has also received several awards from the engineering and research community, including: election as a Member of the College of New Scholars, Scientists and Artists of Royal Society of Canada, being recognized as one of 20 leading female innovators in *Women of Innovation* (Dr. Ren is a co-founder of two start-up companies), appointment as Fellow of the Canadian Society of Mechanical Engineering, Engineering Excellence from UW and an Early Research Award from the Ontario Ministry of Research and Innovation.

Symposium Chairs: Prof. S. Poncet (Sebastien.Poncet@USherbrooke.ca) & H. Fellouah (Hachimi.Fellouah@USherbrooke.ca)

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