



Topic: **Microfluidics for Processing Surface and Flow Controls**

Speaker: **Prof. Xue Hong**
California State Polytechnic University, USA

Date: **20 December 2013, Friday**

Time: **3.00pm to 4.00pm**

Venue: **EA-06-05** (map of NUS can be found at <http://map.nus.edu.sg/>)

Host: **Dr. Yang Wenming**

Abstract

Miniaturized fluidic devices are of interest for many applications, including portable point of healthcare fluid testing, high throughput chemistry, and micro-analytical instruments, etc. Firstly, the heat and mass transfer in micro/nano cavities will be introduced in understanding the nature of nano-structured super-hydrophobic surfaces. Secondly, enhancement of micro-mixing using a specially designed heterogeneity surface will be demonstrated. Lastly, we introduce a flow regulating technology that uses trapped air bubbles in a hydrophobic microfluidic channel. The experiments have successfully shown the capability of this technique for delivering constant and varying flow rate, and for on-off valve. These studies provide a simple, yet effective way to monolithically integrate mass, flow and energy management on polymer Lab-on-Chip devices.

About the Speaker

Dr. Xue Hong is a Professor in Mechanical Engineering Department, California State Polytechnic University, Pomona. He received his Ph.D. in Mechanical Engineering from the University of Tokyo, Japan in 1992. He was a faculty member of the National University of Singapore from 1992 to 2000. He joined the California State Polytechnic University in 2000 and became a Professor in 2006.

Prof. Xue's current research interests include MEMS and micro fluid flow and heat transfer, numerical thermal-fluids simulation, and energy system. He has more than 60 publications in international journals.

Admission is free. All are welcome to attend.