



The Chinese University of Hong Kong

Department of Biomedical Engineering



Time: 3:00 – 4:30 pm, 28 March 2019 (Thursday)

Venue: Room 702, William M.W. Mong Engineering Building

## Advance design and fabrication strategies for electrochemical and optical biosensors



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### **Abstract**

Biosensors are analytic devices that composed of a biological sensing element and a transducer. Since the development of first glucose biosensor in 1962 by Leland Clark, various biosensors were reported for applications including healthcare diagnostics, drug discovery, environmental, food safety and process control monitoring. The promise demonstrated by various examples of biosensor technologies is very appealing, however, there are still many hurdles to develop commercial biosensors for real practice. The success of biosensors rely mainly on their ease of use, portability, sensitivity, selectively and cost, while emerging technologies on new materials design and fabrication techniques create new impacts on the development of biosensors. This seminar will present various technologies developed in our team to improve analytical performance of electrochemical and optical biosensors focused on bioelectronics signal transduction, biolabel technique, processable materials for printed bioelectronics and advanced fabrication methods, as well as examples on successful commercialization of our developed technologies.

### **Biography**

Dr. Mak's has more than fifteen years' international research experiences in Sweden, Singapore, Germany and Hong Kong in the field of biosensors and materials sciences. He is currently employed as an Associate Professor (Docent) and Head of the Biosensors and Bioelectronics Unit in the Department of Physics, Chemistry and Biology at Linköping University, Sweden. His research activities are focus on biosensors and bioelectronics, lateral flow membrane-based biosensors and analytical chemistry, and with strong interest on advanced material design and fabrication strategies to improve biosensor performance. He has authored over 55 peer-reviewed research articles covering the fields in biosensors, bioelectronics, analytical chemistry, materials science and biomedical engineering. He is actively interested in transferring academic research to industrial applications. He has considerable experience on industrial R&D as technical manager and entrepreneur (founder and holder of Sentervia AB, shareholder of Jupiter Diagnostics Ltd.). He is the lead investigator of IF Sensing Ltd. based in Manchester focus on the development of innovative diagnostic solutions for kidney care. He is the inventor of seven patent families and more than fifteen patents in the field of biosensors and healthcare diagnostics.

**\*\*\* ALL ARE WELCOME \*\*\***

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