

# Nanophotonics and Lab on a Chip Technology for Bioimaging and Translational Medicine

by

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## Abstract

In this seminar, Dr Chin will introduce the applications of nanophotonics and Lab on a Chip technology in developing novel imaging biosensors and translational medical instrumentation. Nanophotonics provides new optical imaging or signal enhancement techniques whereas Lab on a chip facilitates automation, small volume reagent consumption, faster reaction rate, and high-throughput methods in handling biological and biochemical samples. Innovative biosensors to detect biocontaminants including bacteria, viruses and biotoxins will be discussed. For clinical applications, automated cell-based image cytometer is developed for rapid diagnosis and subtyping of breast cancer in 1 hr using fine needle aspiration samples with as few as 50 cells. Dr Chin will also demonstrate a novel nanoplasmonic platform for biofluid's molecular profiling in sepsis monitoring.

## Biography



Dr Lip Ket Chin received B. Eng and PhD in Electrical and Electronic Engineering from Nanyang Technological University, Singapore in 2005 and 2011, respectively. Since 2015, he worked as a Senior Research Fellow of Center for Bio-Devices and Bio-Informatics in Nanyang Technological University, Singapore. He has served as the Co-PI of the research programme “On-chip optofluidic sensors and integrated microsystems for drinking water quality monitoring” with a total funding of S\$7.4 million, awarded by National Research Foundation and Public Utilities Board of Singapore (2012-2018). In 2018, he joined Center for Systems Biology of Massachusetts General Hospital and Harvard Medical School to focus on developing

novel photonic and nanoplasmonic biosensors and medical devices for translational research in clinical applications.

Dr Chin's research mainly focuses in nanophotonics, nanoplasmonics, optofluidics, biosensors and imaging, biomedical devices and instrumentation. In these fields, he has published over 50 peer-reviewed papers in leading journals including *Science Translational Medicine*, *Nature Communications*, *Angew Chem*, *Advanced Materials*, *Lab on a Chip* etc., and filed 2 patents.

Date	: 30 August 2021 (Monday)
Time	: 9:30am – 10:30am
Language	: English
Online Registration	: Please register for the Zoom session <a href="#">HERE</a> : (*Please register with [EID]@cityu.edu.hk for email address.)

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