BioSyM Seminar Series 2017

Integrated Microfluidics for Protease Assay and Single Cell Analysis for Precision Medicine

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Time : **12 pm to 1 pm**

Venue : **Level 5, Perseverance Room**

Abstract

In the context of precision medicine, the capability of diagnostic and screening tools to obtain large amount of personalized measurement from individual patient at small sample volume is crucial. However, current screening platforms are still limited in various aspects such as large sample quantity requirements, lack of capability for multiplexed analysis of patient samples, low system throughput which contributes to long processing and analysis time and thus not able to rapidly diagnose and monitor patient condition. To address these issues, several droplet-based microfluidics platforms have been developed in this work to screen cancer samples for multiplexed phenotypic analysis all while using small sample volume. With the development of these microfluidic platforms as well as the research findings of utilizing metalloproteinases (MMPs) as potential biomarker for cancer, this work aims to provide a patient-specific approach for cancer screening and monitoring, thus taking one step closer to achieving "precision medicine"

Short Biography

Mr. Ng Ee Xien recently joined SMART - BioSyM. He received his PhD training in Biomedical Engineering at the National University of Singapore from 2013-2017. He joined BioSyM in late August 2017 under the supervision of Prof. Krystyn van Vliet and is currently working on mesenchymal stem cells expansion in a microfluidic bioreactor. His research interests are microfluidics, single cell analysis, protease assay, and bioengineering.