UNIVERSITI PUTRA MALAYSIA
BERILMU BERBAKTI

PUBLIC LECTURE

Laboratory of Food Safety and Food Integrity,
Institute of Tropical Agriculture and Food Security (ITAFoS)

YOU ARE ALL INVITED

Integrated and Ultrasensitive Biosensor for Food and Environmental Applications

PROF. DR. MOHAMMED ZOUROB

Department of Chemistry, Alfaisal University, Riyadh, Saudi-Arabia

7th August 2017 (Monday) | 2.30 pm
Lecture Hall 1, Fac. of Agriculture
Universiti Putra Malaysia

PROFILE

Mohammed Zourob obtained his PhD from the Department of Instrumentation and Analytical Science (DIAS) at University of Manchester in 2003. He did his postdoctoral training at DIAS, working on chemical/biosensors and lab-on-a-chip for biomedical and environmental applications. Then he moved to the Department of Materials Science, University of Manchester, to work on developing high-throughput screening platforms for "Omics" applications. At the end of 2005, he moved to the Institute of Biotechnology, University of Cambridge, where his research focused on optical sensing and biomemetic materials. Dr. Zourob headed the biosensors division at Biophage Inc, a biotech company based in Montreal, Canada. In 2009, he joined GDG Environment Ltd as Director of R&D. In 2010, he joined INRS-University of Quebec as associate professor and later moved to Cranfield University, UK. Presently, Dr. Zourob is holding a professorship of Biosensors at Alfaisal University-KSA and leads the Biosensors BioMEMS and Bionanotechnology Lab (BBBL) at the respective university. At anytime the BBBL has minimum 20 researchers working in various projects related to food, biomedical, security and environmental applications. Dr. Zourob has published many scientific papers in peer-reviewed journals, more than thirteen book chapters, and thirteen patents. He edited six books in chemical/biosensors, microarrays and lab-on-a-chip. His research interest focused on developing novel diagnostic tools, highly specific recognition receptors for diagnostic and imaging applications and lab-on-a-chip systems for sample processing.

ABSTRACT

The challenges for today's biosensing platforms are numerous: they have to work with real samples, poor detection limit which is far from the infectious dose or the concentrations required by the regulating agencies, suffer from the long analysis time, and use of washing steps and liquids which defeat the purpose of field applications. Another challenge is the stability and availability of highly specific recognition receptors to be integrated with the sensing platform to have a functional device. The presentation will highlights our recent developments to overcome such challenges for various food and environmental related analytes. We developed various optical, electrochemical, colorimetric sensing platforms and integrate it with various natural and synthetic recognition receptors. We integrated a number of techniques with the various transducers to concentrate and enrich the analyte onto the immobilized recognition receptors on the sensor surface. This technique enhanced and improved the detection limit, shortened the analysis time and reduced the non-specific binding, to reduce the false positive results.

Any enquiry, kindly contact...
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