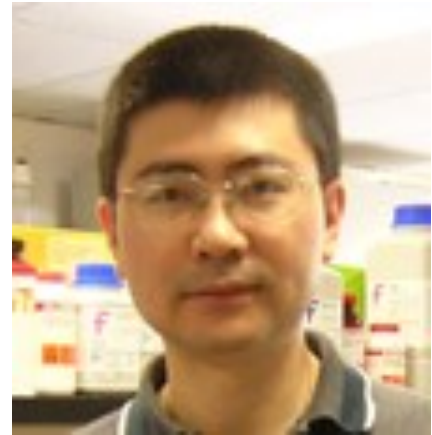


“Glucose Monitoring: Enzymatic vs. Non-enzymatic”

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LECTURE: 9:00 AM - 10:00 AM
ENGINEERING CENTER
ROOM EC 1112
10555 WEST FLAGLER STREET
MIAMI, FL 33174

Abstract:

A (bio)sensor is an analytical device which integrates a chemical or biological recognition element with a physical transducer to generate a measurable electrochemical, optical, acoustical, mechanical, calorimetric, or electronic signal proportional to the concentration of the analytes. It has been studied intensively and utilized extensively in various applications ranging from public health and environmental monitoring to homeland security and energy-related area.

Diabetes is a metabolic disorder and a major world health problem. As stated by International Diabetes Federation, there are over 382 million people worldwide living with diabetes in 2013. Due to the extremely large financial burden caused by diabetes and its serious health complications, the detection of glucose is becoming incredibly important in managing diabetes and reducing its financial costs.

This presentation will first outline the challenges for *in vitro* and *in vivo* glucose monitoring in battling diabetes, and then discuss our recent research activities for the development of enzymatic and non-enzymatic glucose sensors based on electrochemical and optical methods. Finally, the future research direction for *in vivo*, long-term glucose monitoring will be laid out and discussed.

Biography:

Dr. Lei is a Castleman associate professor of Chemical and Biomolecular Engineering and graduate faculty of Biomedical Engineering at the University of Connecticut (UConn). Dr. Lei obtained his BS degree and MS degree from Sichuan University, China in 1993 and 1996, respectively. He earned his Ph.D. degree in 2004 at the University of California-Riverside in Chemical and Environmental Engineering. His research has focused primarily on the development of novel, simple, cost-effective, ultrasensitive, and universal (bio)sensor platforms for the detection of biological and chemical species and the integration of research and education at all levels. Prof. Lei's research has resulted in ~100 significant peer-reviewed journal papers, 2 book chapters, and 4 patents related to sensor and biosensor. He has also delivered over 80 presentations, including a number of invited talks nationally and internationally. Prof. Lei serves as Associate Editor for *Chemical Sensors Journal* and *Frontiers in Environmental Chemistry*, and also serves on the Editorial Board of eight international journals such as *Analytical Letters*, *Applied Biochemistry and Biotechnology*, etc. His (bio)sensor research has been extensively supported by various federal funding agencies such as NSF, DOE, USGS, DHS.

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