

Multidimensional Pain Biosensors

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LECTURE: 1:30 PM -2:30 PM

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Abstract: Pain is the complex response to the interaction of multiple inflammatory mediators that are released at the point of injury. Clinical assessment of pain is necessary to diagnose, manage, and choose treatment options, as well as for the evaluation of the most efficient treatment. Current methods of assessing pain include visual analog, Wong-Baker faces and verbal numeric scales. However, studies have shown that these methods may be subjective and discrepancies are likely to be recorded for similar pain intensity measurements. Hence there is a need to develop a more objective scale that relies on the fundamentals of biochemical mechanism of pain transduction. In this presentation, I will discuss the design, development and validation of multidimensional pain biosensors using inputs from a suite of electrochemical, fluorescence and surface-enhanced plasmon resonance methodologies. The talk will focus on novel biosensors for rapid, autonomous, and on-demand assessment of pain biomarkers.

Biography:

Wunmi Sadik is Professor of Chemistry & Director, Center for Advanced Sensors & Environmental Systems at State University of New York at Binghamton (SUNY-Binghamton). She received her Ph.D. in Chemistry from the University of Wollongong in Australia and did her postdoctoral research at the US Environmental Protection Agency (US-EPA). Dr. Sadik has held appointments at Harvard University, Cornell University and Naval Research Laboratories. Research areas include interfacial molecular recognition processes, sensors, and new measurement approaches and their application to solving problems in biological system, energy and the environment. Sadik's research has led to the design and construction of proprietary Ultrasensitive Portable Capillary biosensor (UPAC™) device. Sadik holds four U.S. patents and has presented more than 400 scientific papers, book chapters and lectures. Dr. Sadik is a fellow of the Royal Society of Chemistry, Fellow of the American Institute for Medical and Biological Engineering (AIMBE), NSF Discovery Corps Senior Fellow and the recipient of Harvard University's Distinguished Radcliffe Fellowship. Dr. Sadik has received numerous awards including SUNY Chancellor's Award for Scholarship & Creative Activities, Chancellor's Award for Outstanding Inventor, Sadik serves on the editorial boards of many journals. Sadik has organized including several national and international conferences. Sadik chaired the first Gordon Research Conference on Environmental Nanotechnology in 2011.

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