

Title. Holistic Advancement of Health Monitoring Technologies: A Look at Wearables on Skin and Strategies for Electro Optic Polymers in Telecom.

Abstract.

The Crawford research group seeks to cultivate the synergy found in working across disciplines such as materials science, bioengineering, nanotechnology, chemistry and medicine, to address overarching human-health and environmental challenges relevant to our 21st century society. In this seminar Dr. Crawford will highlight two fundamental challenge areas related to the holistic advancement of health monitoring technologies. First, she will approach design considerations for health monitoring wearables by discussing the development process of a skin-like, resistive wearable sensor capable of measuring changes in the thermal properties of skin. Second, she will broaden the topic focus to address global challenges emerging in telecom due to the significant and increasing demand for short distance data communication. In this vein, she will discuss development strategies for the design of next generation electro optic polymers as part of a fiber optics solution to current data communication limitations.

Background.

Dr. Crawford joined the University of Central Florida (UCF) as an Assistant Professor of Materials Science and Engineering, and BionixTM member as part of UCF's Faculty Cluster Initiative in fall 2017. Previously, Dr. Crawford studied in the area of bioelectronics as a postdoc with joint affiliation at the Northwestern University Center for Bio-integrated Electronics, and the University of Illinois, Urbana-Champaign Department of Materials Science and Engineering, both within the research group of Prof. John A. Rogers from 2015-2017. Dr. Crawford completed her Ph.D. in Chemistry from the University of Maryland, College Park in 2015 with research emphasis on the development of thermoplastic polyolefin block-copolymer elastomers using living coordination polymerization. She received an M.S. in Chemistry from NC State University in 2011; there she studied the growth and degradation rates of biodegradable polymer brushes designed for antifouling applications. She graduated with B.S. degrees in Chemistry and Psychology from the University of North Carolina, Charlotte in 2009. Dr. Crawford is a contributing author on several peer-reviewed articles and has received more than 12 awards related to research and teaching.

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