



SHELL SEMINAR SERIES

CHEMICAL & BIOLOGICAL ENGINEERING

Soft Electronic and Microfluidic Systems for the Skin

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ABSTRACT Recent advances in materials, mechanics and manufacturing establish the foundations for high performance classes of electronics and other microsystems technologies that have physical properties precisely matched those of the human epidermis. The resulting devices can integrate with the skin in a physically imperceptible fashion, to provide continuous, clinical-quality information on physiological status. This talk summarizes the key ideas and presents specific examples in wireless monitoring for neonatal intensive care, and in capture, storage and biomarker analysis of sweat.

BIO Professor John A. Rogers is the Louis Simpson and Kimberly Querrey Professor of Materials Science and Engineering, Biomedical Engineering and Medicine, with affiliate appointments in Mechanical Engineering, Electrical and Computer Engineering and Chemistry, where he is also Director of the newly endowed Center for Bio-Integrated Electronics. He has published more than 650 papers, is a co-inventor on more than 100 patents and he has co-founded several successful technology companies. His research has been recognized by many awards, including a MacArthur Fellowship (2009), the Lemelson-MIT Prize (2011), and the Smithsonian Award for American Ingenuity in the Physical Sciences (2013) – and most recently the MRS Medal from the Materials Research Society (2018). He is a member of the National Academy of Engineering, the National Academy of Sciences, the National Academy of Inventors and the American Academy of Arts and Sciences.

