

Colloquia

www.physics.bilkent.edu.tr

SPRING 2014

John A. Rogers

University of Illinois at Urbana-Champaign, Illinois, USA

Materials and Mechanics Concepts for Bio-Integrated, Transient Electronics

day
FEBRUARY 26, 2014 WEDNESDAY

location
EE01

time
15:40

ABSTRACT

Biology is soft, curvilinear and transient; modern silicon technology is rigid, planar and everlasting. Electronic systems that eliminate this profound mismatch in properties will lead to new types of devices, capable of integrating non-invasively with the body, providing function over some useful period of time, and then dissolving into surrounding biofluids. Recent work establishes a complete set of materials and mechanics concepts that enable these features in a class of electronics with performance comparable to that of conventional wafer-based technologies. This talk summarizes the key ideas through demonstrations in skin-mounted 'epidermal' monitors, advanced surgical tools and bio-resorbable electronic bacteriocides.

The Physics Colloquia are designed to address a non-specialist, broad audience and introduce topics of contemporary research through lectures by leading experts. We warmly invite all members of the student body, including undergraduates enrolled in any programme.

www.physics.bilkent.edu.tr