

Houston Methodist Research Institute Center for Neuroregeneration Lecture Series



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Soft and Stretchy Electronics: From Engineering Science to Biomedical Applications

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4 – 5p.m.

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Recent advances in engineering science lead to the development of soft electronics with unique and advantageous mechanical properties, which holds promise in a broad range of fields, such as healthcare, robotics, human-machine interfaces, etc. In this talk, I will present some of our recent research progress in manufacturing, materials, and device innovation for soft and stretchy electronics. I will first introduce our development of high performance soft electronics. Such soft electronics is mainly accomplished through heterogeneously integrating of ultra-thin Si electronics onto polymer substrate using a unique pick-and-place method. Soft electronics, merging the mechanical softness and high performance electrical functions, lead to applications in medicine that cannot be achieved with conventional devices. I will then show our recent results on developing a completely new set of stretchy electronics, namely “fully rubbery electronics”. Fully rubbery electronics are constructed completely based on rubbery electronic materials and therefore intrinsically stretchy. The fully rubbery electronics in thin sheets mimics the format and functionalities of our elastic human skin.

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