Monitoring Wound Severity and Healing Through Enzymatic Electrochemical Sensing

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Abstract
Our goal is to enable personalized wound therapy by monitoring biomarkers in wound fluid and sweat from wound vicinity. This shall reduce repeated trips to clinics and lower the huge socio-economic costs associated with wound care. Non-invasive approaches entailing detection of biomarkers associated with wound healing could facilitate early treatment through therapeutic interventions before chronic tissue damage. This project explores the biochemistry of analytes and purine precursors to detect wound chronicity. Our approach involves investigating the science of different nano-materials and polymers which can play a role in stable biomarker detection in wound milieu. We aim to design a miniaturized and cost-effective wound-care sensor; and evaluate its success on a wearable healing platform.

Biography:
Sohini RoyChoudhury is presently a PhD student affiliated as a research assistant with the BioMEMS and Microsystems Lab of Florida International University (FIU), Ms. RoyChoudhury has been working in collaboration with research laboratories of multiple universities for an integrated solution to health and environmental tracking on a wearable platform. Having been exposed to approaches of enzymatic electrochemical sensing; and working with different kinds of metal and polymer materials, she explores chemistry and bio-chemistry at the nano-scale and investigates behavioral changes and changes in properties under different environmental conditions.

March 9th, 2018 | 1:30 p.m. | MRC 454 & Webex