

“3D-printed Wearables & Sensing Robot Systems”

Abstract: This presentation will summarize recent research activities of the Additive Manufacturing Laboratory in Simon Fraser University, Canada. 3D printing can generate custom designs of complex 3D form factors that enable electronics to be integrated into unique places. The design, fabrication, and characterization of 3D printed sensor systems including ion selective electro-chemical sensors, 3D printed circuit boards for portable sensing applications will be discussed. Various sensor platforms including transistor, digital microfluidic, and wireless RF based sensing will be demonstrated for the unique form-factored sensing robot applications. It will be shown that 3D sensor designs can significantly accelerate the hybridization with the fabrication process of conventional electronics and merge its capability into portable sensor applications.