Title: High-Performance Printed Electronics on Flexible Substrates

Abstract: High-performance electronics in flexible form-factor is needed for several rapidly growing areas such as wearable systems, electronic skin, robotics, displays, mobile healthcare and interactive systems etc. This webinar will present those solutions that are being explored to attain high-performance flexible electronics. This will include immediate solution such as system in foil using ultra-thin chips (UTCs) technology, as well as, mid to long term solutions such as single-crystalline inorganic semiconducting materials-based printed electronics. Various methods for printing nano to cm scale structures (e.g., transfer printing, contact printing and direct-roll transfer printing etc.) will also be presented along with devices and circuits developed from them. The examples will include transfer and roll printed Si Nanoribbon-based large area electronic layers and the field effect transistor (FETs) developed from them. These printed FETs consistently show high performance at par with conventional Si wafer-based devices.