Nanofabrication and Characterization of Novel Devices Based on Two Dimensional (2D) Materials

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Abstract: The interest in two-dimensional (2D) materials is rapidly spreading across all scientific and engineering disciplines due to their exceptional properties, which not only provide a platform for fundamental scientific explorations but also promise solutions to some of the most pertinent technological challenges of today. In this talk I will present nanofabrication and characterization of a wide range of devices that includes field effect transistors for benchmarking the electronic transport properties of 2D materials obtained using various top down (exfoliation and electroablation) as well as bottom up (PVT, CVD, MOCVD) synthesis techniques, straintronic devices for energy efficient computing, radiation resilience devices, flexible devices, neuromorphic devices and hardware security devices based on 2D materials.