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**Nanoscale Schottky Barrier Height Mapping at Metal/Semiconductor Interfaces** ROBERT BALSANO, CHRIS DURCAN, VINCENT LABELLA, SUNY College of Nanoscale Science and Engineering — Metal/semiconductor interfaces form a rectifying contact known as a Schottky diode characterized by a barrier height that is governed by the charge transfer and localized bonding at the interface. Conventional current voltage spectroscopy measures a spatially averaged barrier height. Ballistic electron emission microscopy (BEEM) is a scanning tunneling microscopy (STM) technique that can measure barrier heights with nanoscale resolution due to the nano-positioning of the STM tip. In this presentation, the Schottky barrier height is mapped with nanoscale resolution at several metal/silicon interfaces. These maps provide insight into the distribution and spatial homogeneity of the barrier height. In addition, they have the potential to identify and differentiate between different metal species at the interface as well as identify oxides and defects as well.

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