

Abstract Submitted  
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**Signatures of Silicide Formation in Measurements of Nanoscale Interface Electrostatics with BEEM**<sup>1</sup> WESTLY NOLTING, CHRIS DURCAN, State Univ of NY - Albany, VINCENT LABELLA, SUNY Polytechnic Institute — Nanoscale fluctuations in the electrostatics of a metal semiconductor interface impact performance and are important to understand and measure, which can be accomplished with ballistic electron emission microscopy (BEEM), an STM based technique. In this work, we perform BEEM on Cr/Si and W/Si Schottky contacts to visualize the interface electrostatics to nanoscale dimensions. This is accomplished by acquiring tens of thousands of spectra on a regularly spaced grid and fitting the results to determine the local Schottky barrier height. A Monte-Carlo model is then utilized to simulate the distributions of barrier heights that includes effects from the interface and transport of the hot electrons as well as indication of a multi-barrier height interface. The agreement between the measurements and modeling provides strong evidence that localized silicide formation is occurring that is difficult to observe in the average spectra or conventional current voltage measurements.

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