Abstract Submitted
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Integration of a DC magnetron sputtering system into an ultra-high vacuum chamber for fabrication of Schottky diodes[1] NICHOLAS PIENIAZEK, CHRISTOPHER DURCAN, ROBERT BALSANO, VEINCENT LABELLA, The College of Nanoscale Science and Engineering — A DC magnetron sputtering system was installed into a UHV chamber for sputtering of metal thin films with little contamination. Control of the DC power, chamber pressure and deposition time is crucial to deposit metal films with reproducible thicknesses and topographies. A graphical user interface was created to efficiently control all potential process variations. Thin films of tungsten were deposited on both n-Si and p-Si using Argon as the ionizing gas. Scanning tunneling microscopy was used *in situ* to analyze the surface roughness. Ballistic electron emission microscopy was utilized to provide nanometer scale insight into the homogeneity of the tungsten-silicon Schottky barrier.

[1]Schottky Diode UHV Deposition and Analysis Processes

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