CHARACTERIZATION OF PTIR AND PT SCHOTTKY NANOCONTACTS ON SURFACE-TREATED WIDE BANDGAP SEMICONDUCTORS

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Abstract

We report on the formation of Schottky nanocontacts on wide bandgap semiconductors by the conductive tip in atomic force microscope. In-house developed electronics was incorporated in a commercial AFM/STM Veeco Multimode microscope to measure the current-voltage characteristics with PtIr-coated Si and Pt cantilevers. Ga+ focused ion beam and surface chemical treatments were applied to investigate their impact on the properties of nanoscale Schottky contacts on ZnO and GaN. The understanding of the electric charge transport at the nanoscale is essential for the application of semiconductor one-dimensional nanostructures. This work has been supported by the Czech Science Foundation project 15-17044S

Keywords: Conductive atomic force microscopy, Schottky nanocontacts

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