Precision Defect Engineering of Metal/Insulator/Metal (MIM) Diodes using Localized ALD Transition Metal Impurities

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Figures

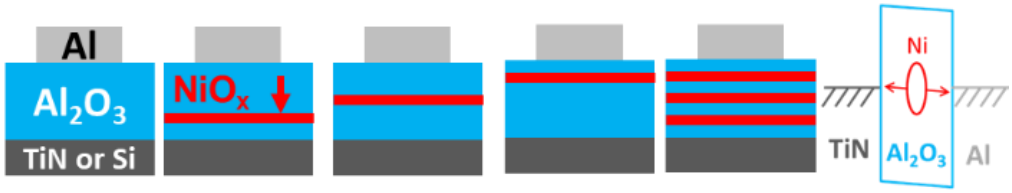

Fig. 1. Schematic cross sections showing position of NiO_x layer and band diagram showing approximate theoretical energy level of Ni impurities in Al_2O_3.

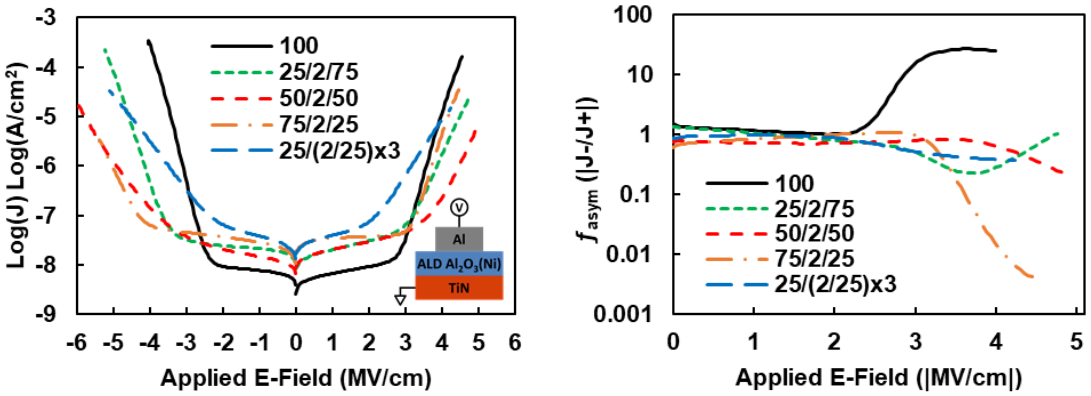

Fig. 2. *J-&* (left) and corresponding f_{asym}-*&* (right) curves for TiN/Al_2O_3/Al devices without (black solid line) and with (dashed lines) intentionally placed Ni defects.

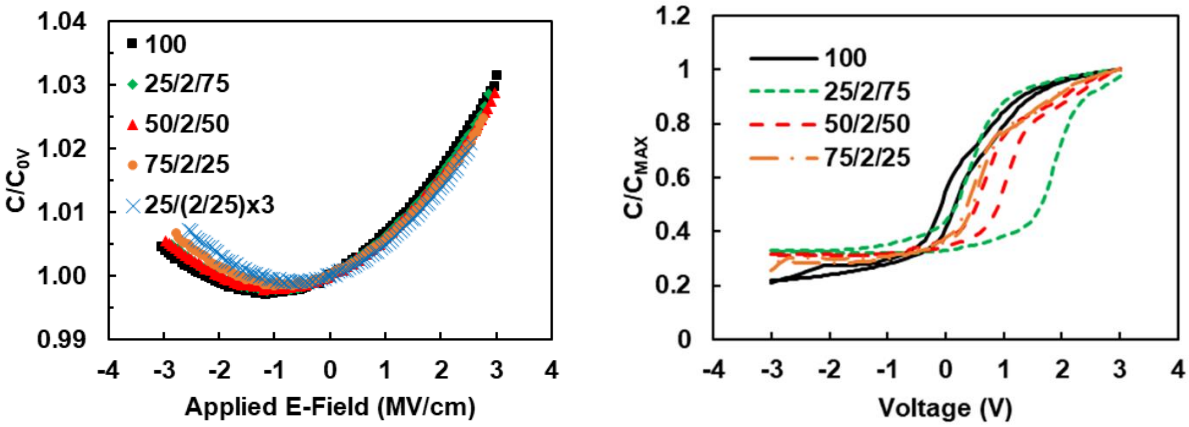

Fig. 3. Left) Normalized capacitance density (C/C_{0V}) vs. *&* and for TiN/Al_2O_3/Al MIM and Right) normalized capacitance (C/C_{MAX}) vs. V for MOS devices with and without intentionally placed Ni defects (as indicated).