

FIG. 1. C-V characteristics of vertical Schottky diodes grown on (001) Sn-doped β -Ga₂O₃ substrates. Schottky contact diameter = 300 μm . (a) Capacitance vs DC voltage for sample counterdoped with 3.8×10^{-9} torr Mg flux (black) and unintentionally doped (UID) control sample (red). Inset: Vertical Schottky diode sample structure. (b) Effective carrier concentration vs depletion width for Mg counterdoped and UID control samples. Inset: Current-voltage curves demonstrating reduced reverse leakage current for Mg counterdoped Schottky diode.

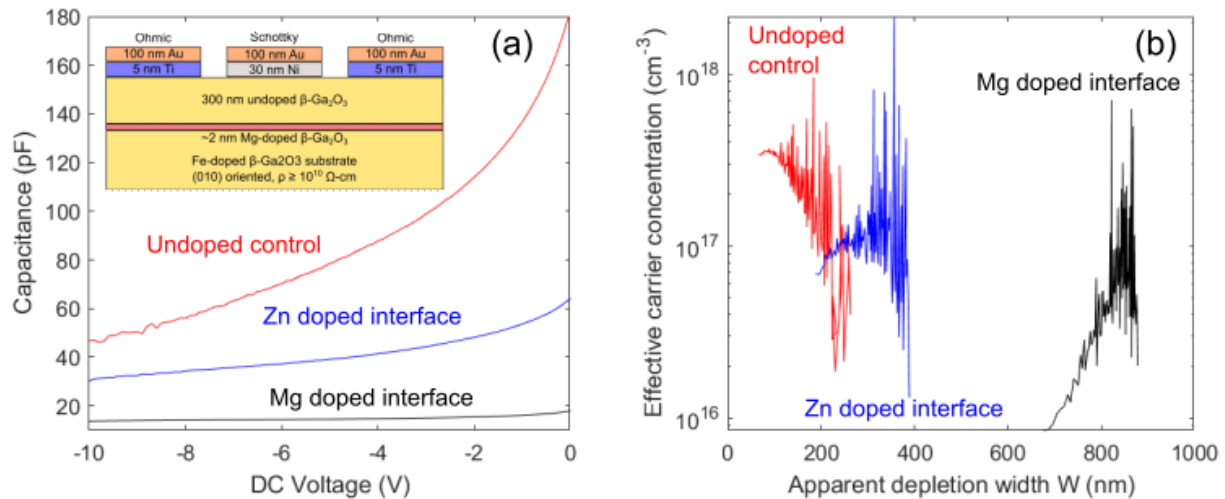


FIG. 2. C-V characteristics of lateral Schottky diodes grown on (010) Fe-doped β -Ga₂O₃ substrates. Schottky contact diameter = 400 μm . (a) Capacitance vs DC voltage for samples counterdoped with 1.0×10^{-8} torr Mg flux (black) and Zn flux (blue) and unintentionally doped (UID) control sample (red). Inset: Lateral Schottky diode sample structure. (b) Effective carrier concentration vs apparent depletion width for Mg and Zn counterdoped and UID control samples. Counterdoping reduces the concentration of uncompensated n-type donors and increases the effective depletion width in lateral β -Ga₂O₃ Schottky devices.