

Figure 1. Room temperature normalized capacitance-voltage (CV) and quasi-static-CV (QSCV) characteristics of ALD- $Al_2O_3$  on (a) p- and (b) n-type GaAs(001) MOS capacitors after 1hr 550°C post deposition annealing under  $N_2$  ambiance; comparison with normalized CV and QSCV curves of ALD- $Y_2O_3$  on (c) p- and (d) n-type GaAs(001) after 900°C 60s rapid thermal annealing (RTA) under  $N_2$  ambiance and followed by forming gas annealing.<sup>1,3,4</sup> CV and QSCV characteristics of ALD- $HfO_2$  on (e) p- and (f) n-type  $In_{0.2}Ga_{0.8}As$  after 850 °C 10s RTA under He ambiance.<sup>2</sup>

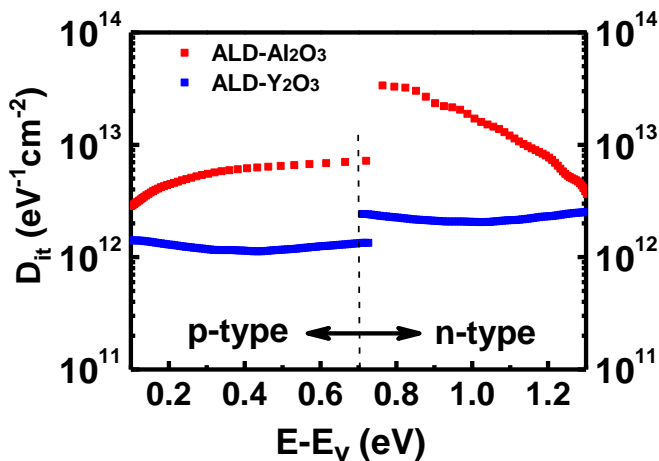


Figure 2. Interfacial trap density distribution across the GaAs bandgap of ALD- $Al_2O_3$  and ALD- $Y_2O_3$  on GaAs(001), extracted by QSCV method.<sup>1,3,4</sup>

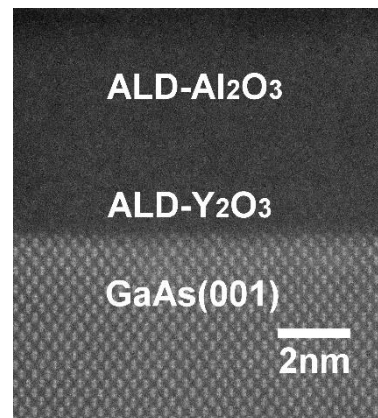


Figure 3. STEM image of ALD- $Al_2O_3$ /ALD- $Y_2O_3$ /GaAs(001) after 900°C 60 second rapid thermal annealing under  $N_2$  ambiance