

Figure 1: a) Implant conditions of room temperature control sample at Si concentration $5 \times 10^{19} \text{ cm}^{-3}$. b) HAADF STEM image of control sample showing region of visible damage from Si implantation. c) HAADF-STEM image of control sample after annealing at 950 °C for 20 minutes under high purity nitrogen showing full recovery of lattice with no visible damage remaining.

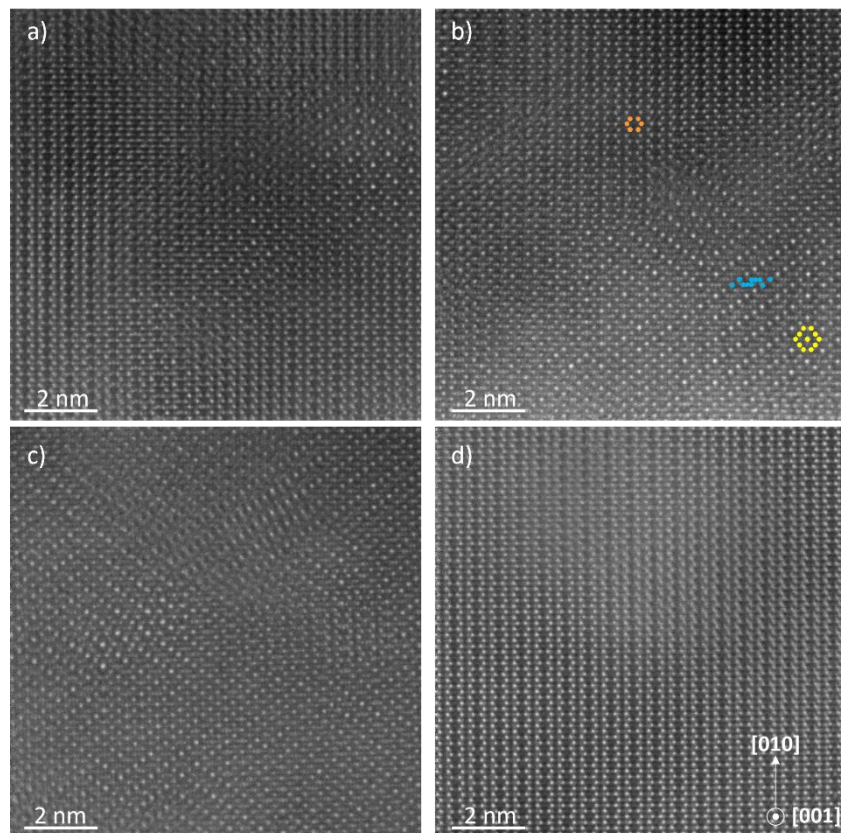


Figure 2: HAADF-STEM image of Si implanted $\beta\text{-Ga}_2\text{O}_3$ viewed along the [001] direction for various implant concentrations. a) Room temperature box to $5 \times 10^{19} \text{ cm}^{-3}$. b) Room temperature implant to $1 \times 10^{20} \text{ cm}^{-3}$. c) Implant at 77K to $5 \times 10^{19} \text{ cm}^{-3}$. a) Heated implant at 600 °C to $1 \times 10^{20} \text{ cm}^{-3}$. a)-c) shows mixture of β phase and γ phase. The β phase projection is overlaid in orange, γ phase in yellow, and overlapping γ phase sheets in blue. All images taken within the first 50 nm from sample surface, except d) taken within the first 100nm.