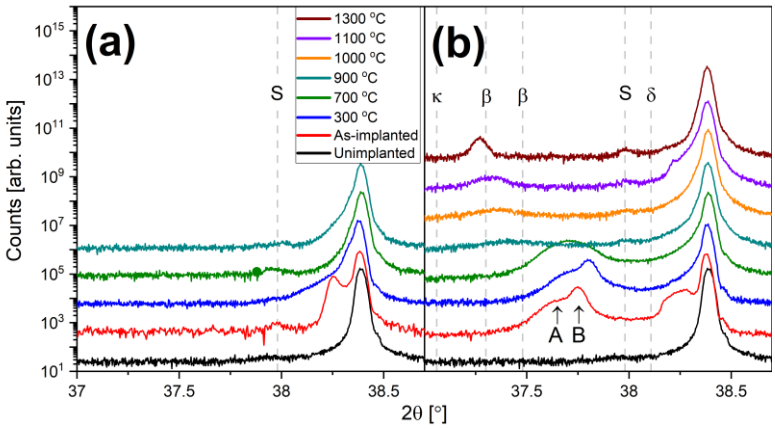

Figure 1 Diffractograms from β-Ga_2O_3 samples implanted to fluence (a) 1 × 10^{14} and (b) 2 × 10^{16} Si/cm^2 after implantation and at selected steps in the annealing series. Uppercase letters A and B indicate diffraction peaks that emerged after implantation, dotted lines indicate expected diffraction peaks by phase (S indicates known peak from the sample stage)

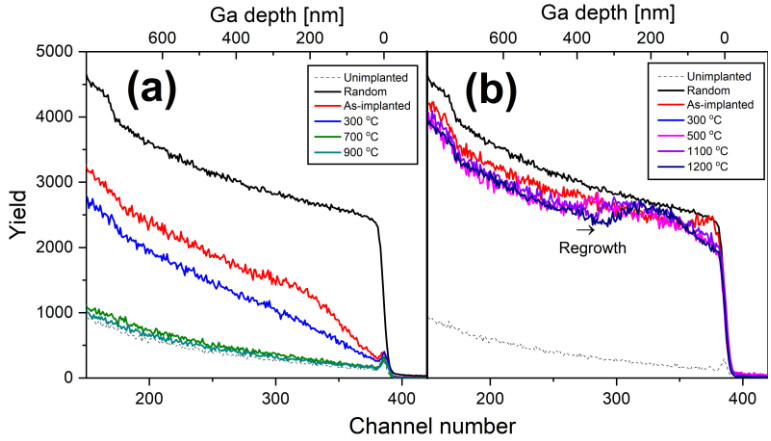

Figure 2 RBS/c measurements from β-Ga_2O_3 samples implanted to fluence (a) 1 × 10^{14} and (b) 2 × 10^{16} Si/cm^2 after implantation and at selected steps in the annealing series

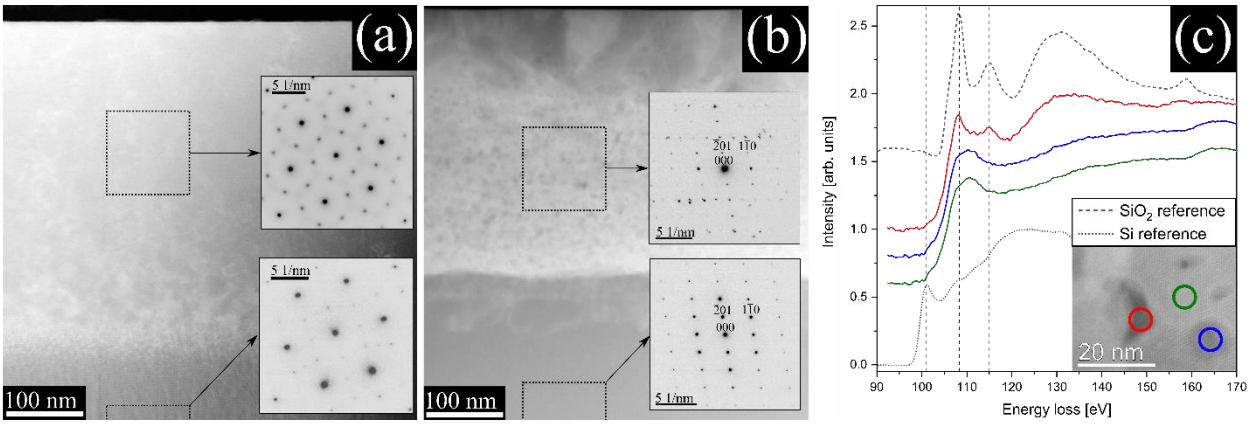

Figure 3 STEM ADF images from samples implanted to 2 × 10^{16} Si/cm^2 (a) as-implanted and (b) annealed at 1100 °C. Selected-area diffraction pattern insets (dotted squares indicate region of acquisition) reveal structural transformation in the as-implanted sample and return to the β-phase after annealing. (c) shows EELS spectra (Si $L_{2,3}$ edge) from three positions in the annealed sample as well as Si and SiO_2 reference spectra. The spectrum from the area marked in red is consistent with SiO_2.