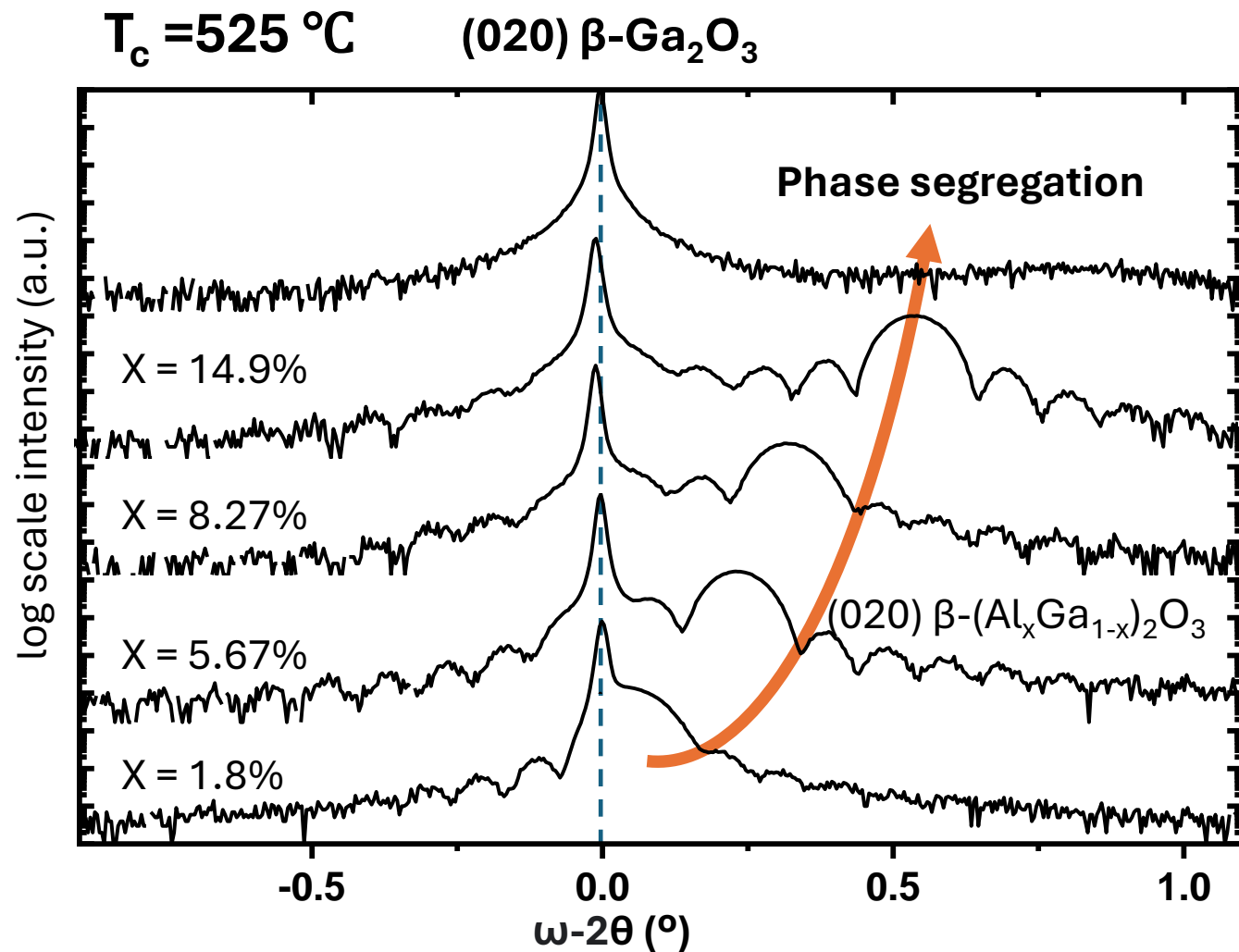


Al% from 1% to 15% β -(Al, Ga) $_2$ O $_3$ grown at 525 °C



TTBAL BEP: 4.2×10^{-7} Torr; Ga BEP 5×10^{-9} Torr

TTBAL BEP: 4.2×10^{-7} Torr; Ga BEP 1×10^{-8} Torr

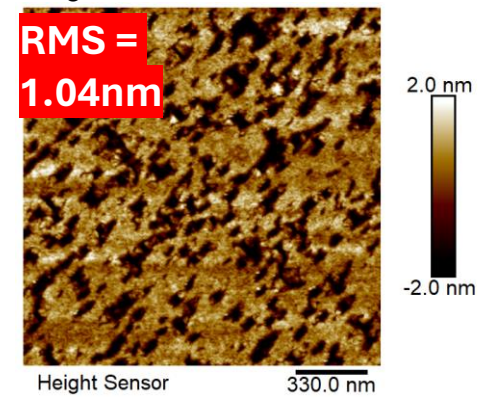
TTBAL BEP: 3.2×10^{-7} Torr; Ga BEP 1×10^{-8} Torr

TTBAL BEP: 2.1×10^{-7} Torr; Ga BEP 1×10^{-8} Torr

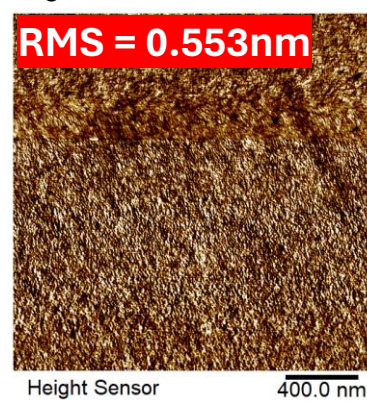
TTBAL BEP: 1.2×10^{-7} Torr; Ga BEP 1×10^{-8} Torr

AFM of $\beta\text{-(Al}_x\text{Ga}_{1-x})_2\text{O}_3$ ($x > 15\%$) at different growth temperatures

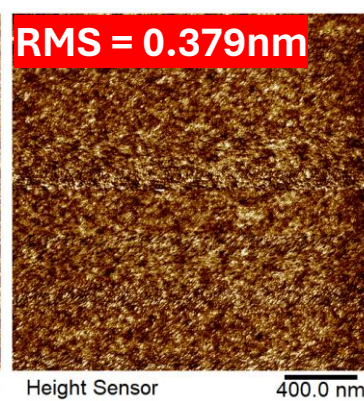
$T_c = 525^\circ\text{C}$



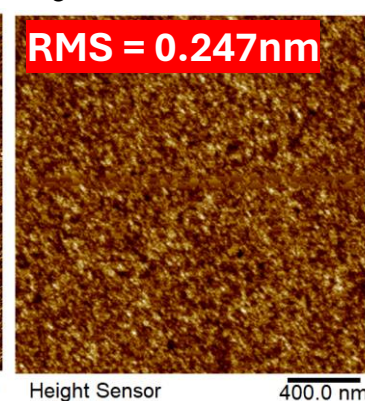
$T_c = 550^\circ\text{C}$



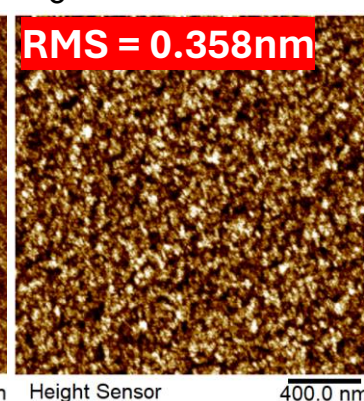
$T_c = 575^\circ\text{C}$



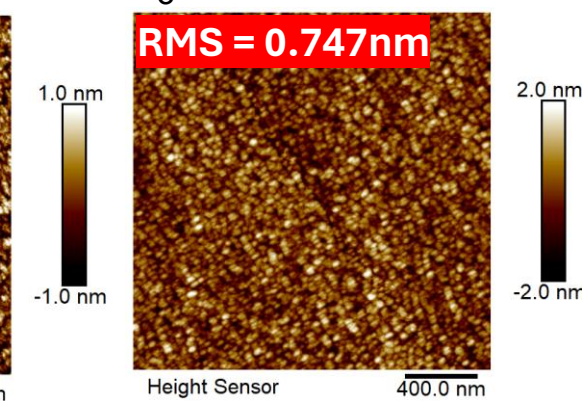
$T_c = 625^\circ\text{C}$



$T_c = 675^\circ\text{C}$

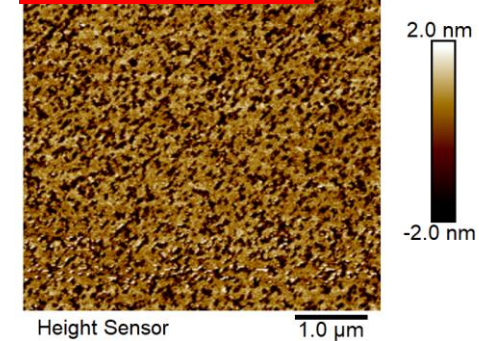


$T_c = 725^\circ\text{C}$

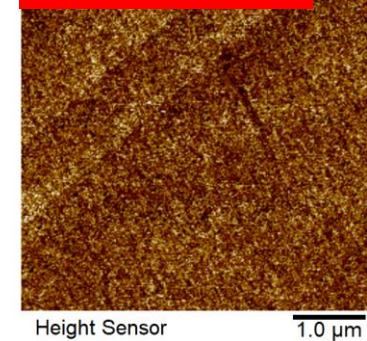


Other G.C. : TTBAI BEP = 4.3×10^{-7} Torr; Ga BEP = 8×10^{-9} Torr
Al composition expected: $x > 15\%$

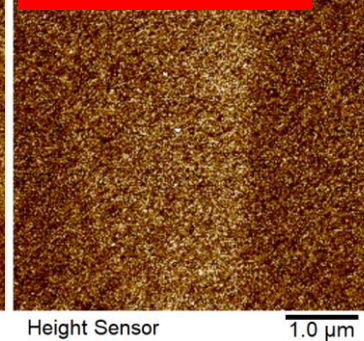
RMS = 0.982nm



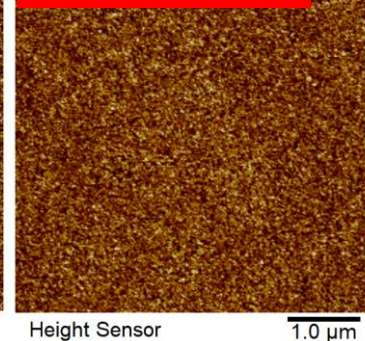
RMS = 0.272nm



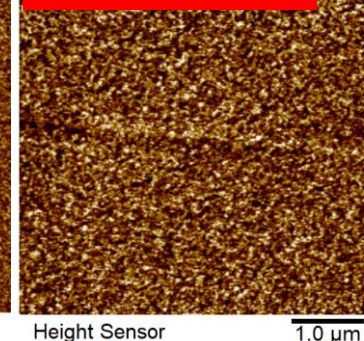
RMS = 0.344nm



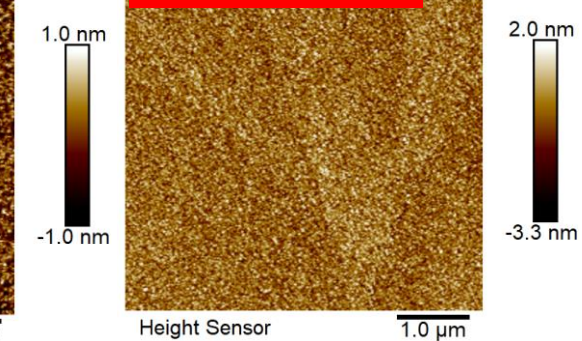
RMS = 0.244nm



RMS = 0.440nm



RMS = 0.840nm



$T_c = 625^\circ\text{C}$ is the optimized growth temperature at high Al composition ($x > 15\%$) $\beta\text{-(Al}_x\text{Ga}_{1-x})_2\text{O}_3$.