

Supplementary Page

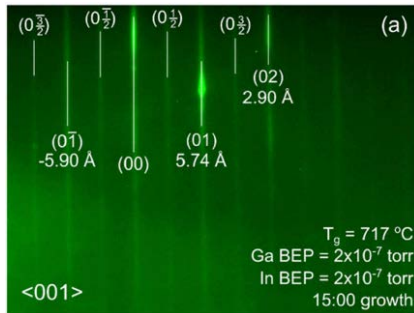


Figure S1: RHEED image typical of In-catalyzed Ga_2O_3 growth

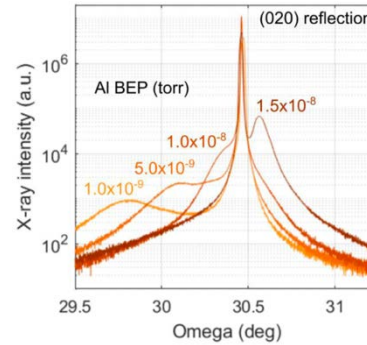


Figure S2: X-ray diffraction of $(\text{Al},\text{In},\text{Ga})_2\text{O}_3$ alloys grown at various Al flux values.

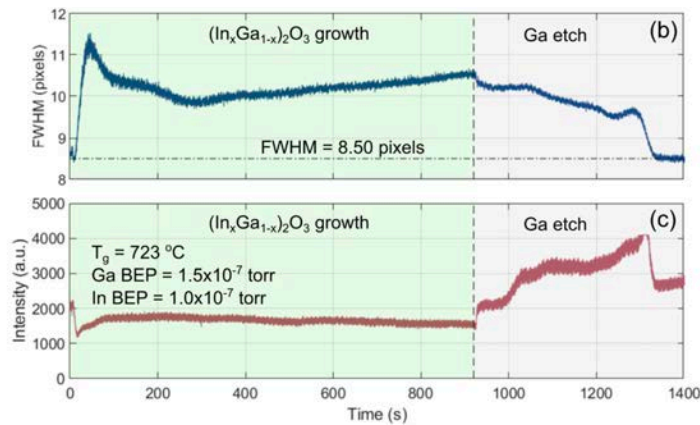


Figure S3: FWHM and intensity of the specular RHEED reflection during the growth and etch-back process.

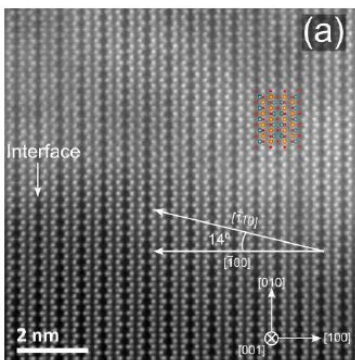


Figure S4: Scanning transmission electron microscopy (STEM) demonstrating beta-phase $(\text{Al}_{0.17}\text{Ga}_{0.76}\text{In}_{0.07})_2\text{O}_3$

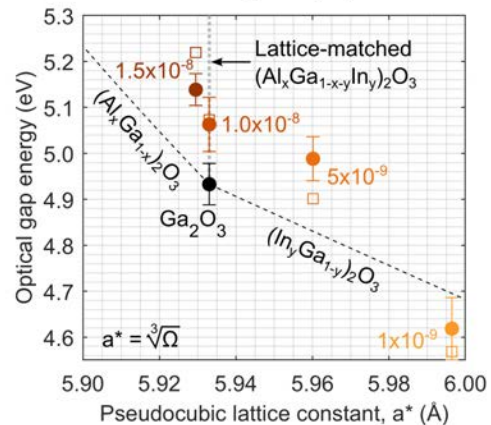


Figure S5: Spectroscopic ellipsometry Tauc analysis of $(\text{Al},\text{In},\text{Ga})_2\text{O}_3$ optical absorption onset.

References:

- [1] S. Schaefer, J. Mater. Chem. A, **12**, 5508(2024).
- [2] S. Schaefer, Appl. Phys. Lett., **125**, 172106 (2024)