

Figure 1. Normalized PL comparison of multiple samples excited around 235 nm (5.27 eV). Samples of low concentration of extended defects (first 3) have a UV dominant emission. Samples with a high concentration of extended defects (last 4) have a dominant blue emission.

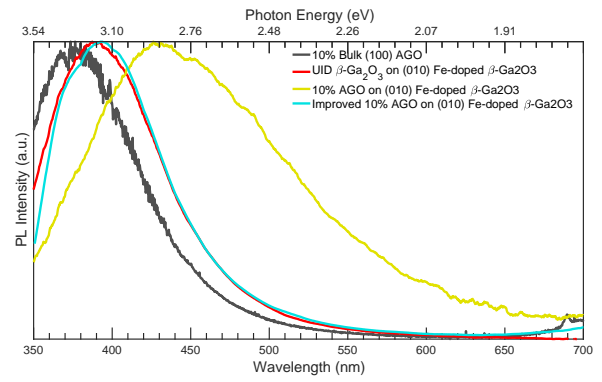


Figure 2. Normalized PL comparison of multiple samples excited around 235 nm (5.27 eV). Shows that the improved 10% AGO film's dominant emission has shifted into the UV region and is now similar to the emission of Ga_2O_3 films and bulk samples.

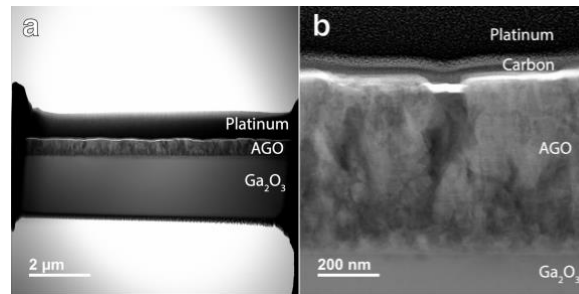


Figure 3. Darkfield STEM of 25% AGO grown on (010) Fe-doped $\beta\text{-Ga}_2\text{O}_3$. (a) Overview of the sample, (b) Section zoomed in.

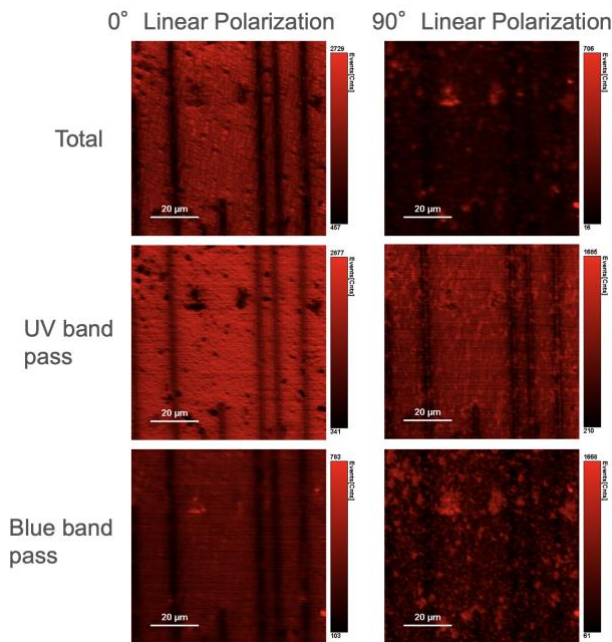


Figure 4. PL mapping of high concentration of extended defect 10% AGO grown on (010) Fe-doped $\beta\text{-Ga}_2\text{O}_3$ sample including map of total emission, UV emission, and blue emission using band pass filters.

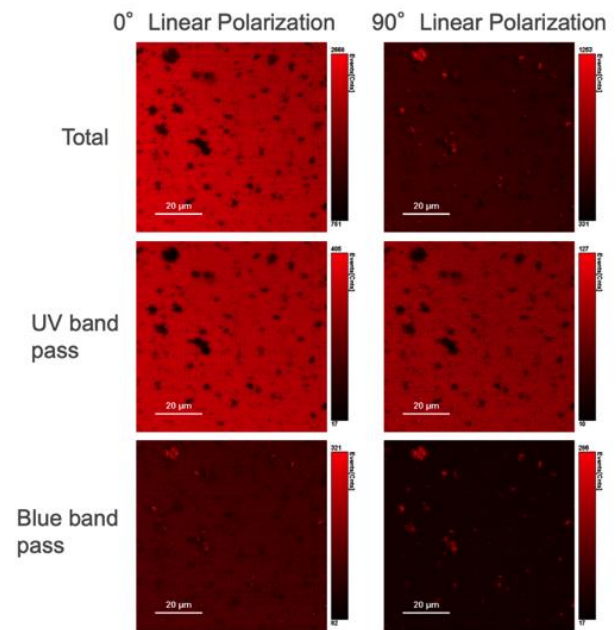


Figure 5. PL mapping of improved (lower concentration of extended defects) 10% AGO grown on (010) Fe-doped $\beta\text{-Ga}_2\text{O}_3$ including map of total emission, UV emission, and blue emission using band pass filters.