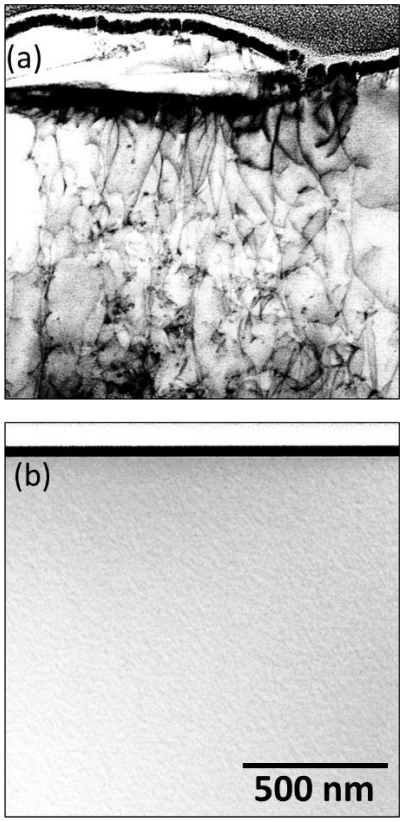

Figure 1. Bright field scanning transmission electron microscopy images of (a) as-received ground and (b) after CMP. The dark contrast corresponds to dislocations and cracks induced by the grinding processing, which are completely removed after polishing.

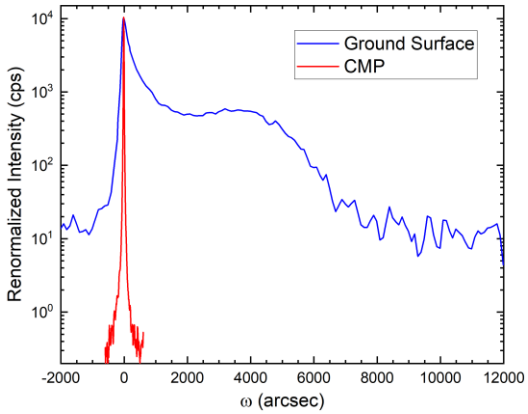

Figure 2. Triple-axis X-ray diffraction symmetric (020) β-Ga_2O_3 rocking curves for the as-received ground surface (blue curve) and after CMP with colloidal silica (red curve). The FWHM and FW(0.001)M for the as-received ground surface were ~180” and ~8300”, respectively, and ~16” and ~150”, respectively, after CMP with colloidal silica. The low angle grain boundary at ~4000” for the blue curve is due to lattice tilt induced by the grinding process.

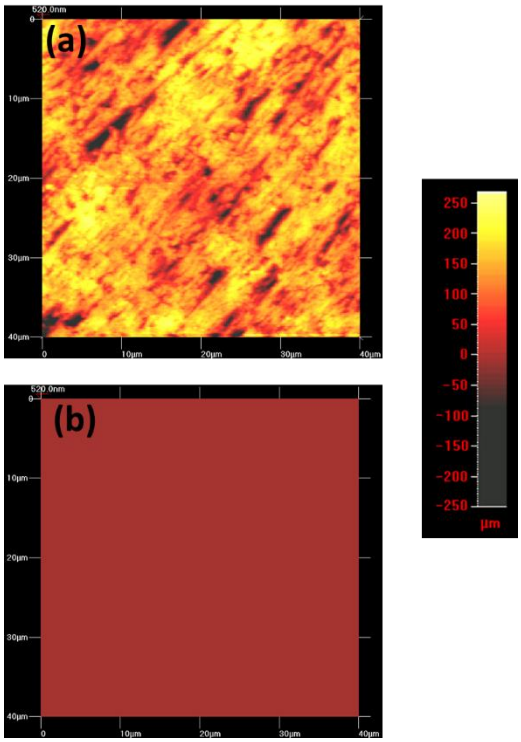

Figure 3. 40 × 40 µm^2 representative atomic force microscopy images of the surfaces for (a) as-received ground state (rms roughness ~60 nm) and (b) after CMP with colloidal silica and cleaning with dilute bleach and citric acid (rms roughness ~0.5 nm).