Controllability of β-Ga₂O₃ single crystal conductivity by V doping

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Figure S1. Polished (a) undoped, (b) 0.05 mol%, (c) 0.10 mol%, (d) 0.50 mol%, and (e) 1.00 mol% V-doped β -Ga₂O₃ (100) single-crystal substrates.



Figure S2. The peak position of the strongest diffraction peak (400) varies with the V doping concentration.



Figure S3. Rocking curves of (a) 0.05 mol%; (b) 0.10 mol%; (c) 0.50 mol% and (d) 1.00 mol% V-doped β -Ga₂O₃ single crystals.



Figure S4. 2D and 3D LCM images of (a) and (f) undoped; (b) and (g) 0.05 mol%; (c) and (h) 0.10 mol%; (d) and (i) 0.50 mol%; (e) and (j) 1.00 mol% V-doped β -Ga₂O₃ single crystals.



Figure S5. 2D and 3D AFM topography images of the surface morphologies of (a) and (f) undoped; (b) and (g) 0.05 mol%; (c) and (h) 0.10 mol%; (d) and (i) 0.50 mol%; (e) and (j) 1.00 mol% V-doped β -Ga₂O₃ single crystals.



Figure S6. Local amplification diagram of Figure 5(a).