Supplemental - N. Itagaki et al., "Sputter Epitaxy via Inverse Stranski-Krastanov Growth Mode: A Method of Single Crystal Growth beyond Lattice Matching Condition"



Crystal growth ends up in formation of threedimensional (3D) islands due to strain induced by lattice mismatch. 3D islands are initially formed and subsequent growth of 2D layers occurs on the 3D islands.

Figure S1. Schematic of growth models of VW mode (a), SK mode (b), and "inverse" SK mode (c).

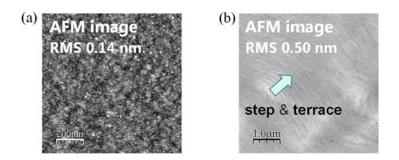


Figure S2. AFM images of 3D islands layer (a) and 2D layer deposited on 3D layer (b).

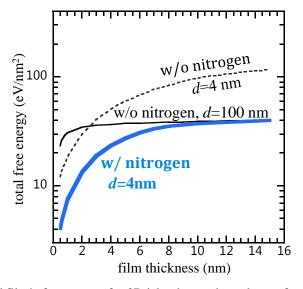


Figure S3. Calculated film's free energy for 3D island growth mode as a function of film thickness for without N_2 cases (w/o nitrogen) and with N_2 case (w/nitrogen). Here, d is island diameter. We assume 80% surface coverage of nitrogen.