Electronic Supplementary Material (ESI) for Nanoscale.

SUPPLEMENTARY INFORMATION

Wafer-scale growth of thickness-controllable MoS_2 films via solution-processing using a dimethylformamide/*n*-butylamine/2-aminoethanol solvent system

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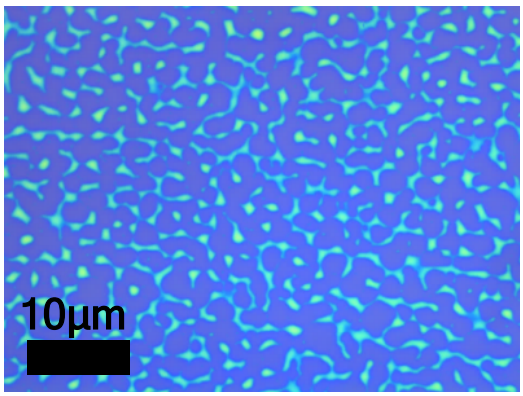

Fig. S1 Optical microscope image of the spin-coated film on the pristine SiO_2 surface using a 0.024 M $(NH_4)_2MoS_4$ solution prepared only with a DMF solvent. After spin-coating, the sample was pre-annealed at 150 °C for 10 min in air.

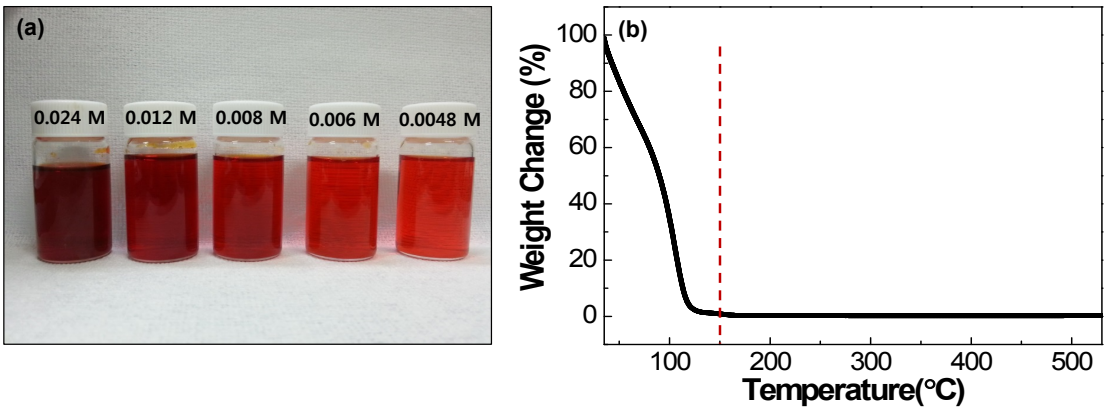

Fig. S2 (a) A series of spin-coating solutions prepared with various $(NH_4)_2MoS_4$ concentrations. (b) Thermogravimetric measurement result of the spin-coating solution with a $(NH_4)_2MoS_4$ concentration of 0.024 M. This demonstrates that most of the solvent can be removed at the pre-annealing temperature of 150 °C (dashed line) used in this experiment.

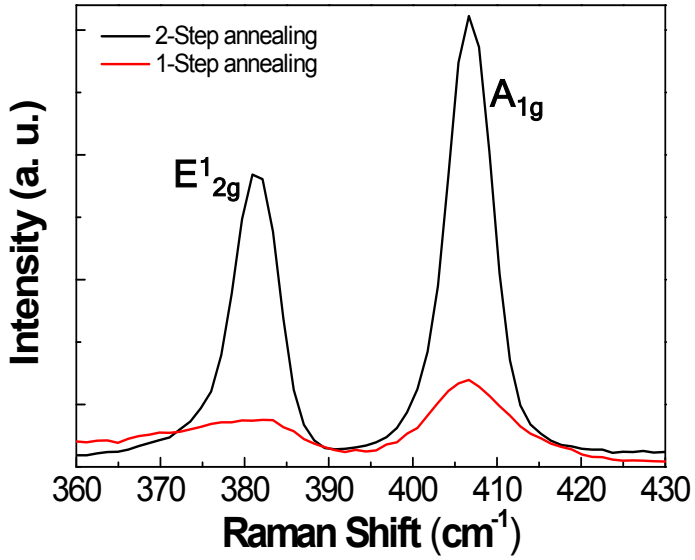

Fig. S3 Comparison of Raman spectra measured from the spin-coated sample using a 0.024 M $(NH_4)_2MoS_4$ solution after the first (red line) and the second annealings (black line).

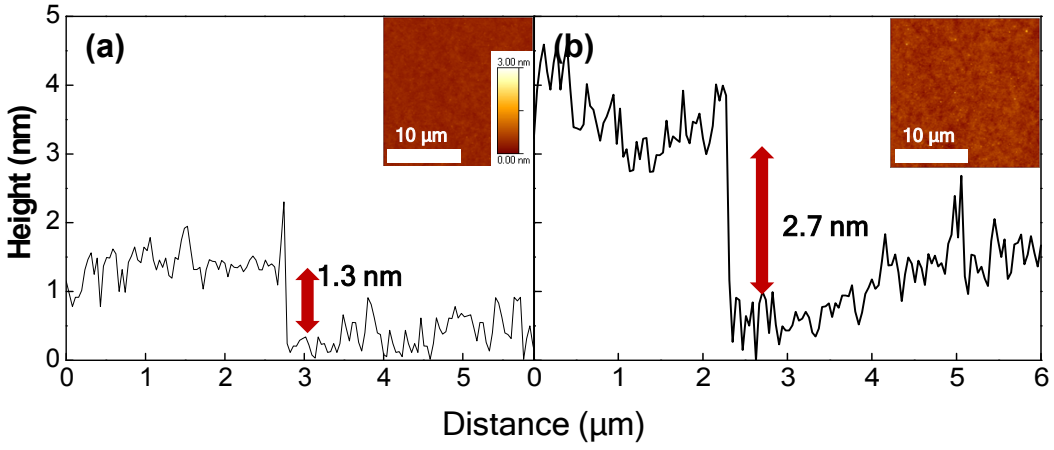

Fig. S4 Surface topographic AFM images (insets) and cross-sectional height profiles showing the average thicknesses of the MoS_2 films synthesized from (a) 0.006 M and (b) 0.012 M spin-coating solutions.