

Electronic supplementary information (ESI) available

A Modified Wenzel Model for Water Wetting on Van der Waals Layered Materials with Topographic Surfaces

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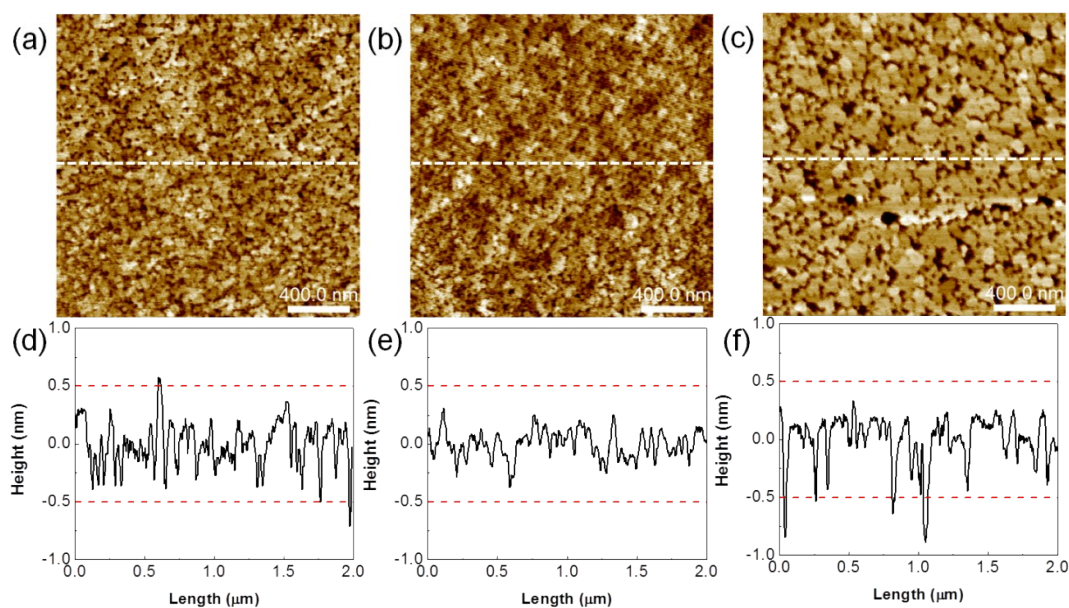


Figure S1 AFM images of SrTiO₃ (111) substrates processed under the same procedures described in the text. There exists slightly different surface morphology, shown as (a), (b) and (c). (d)-(f) The surface fluctuation is found to be less than 1 nm, as shown by the line profiles along the surfaces of substrates.

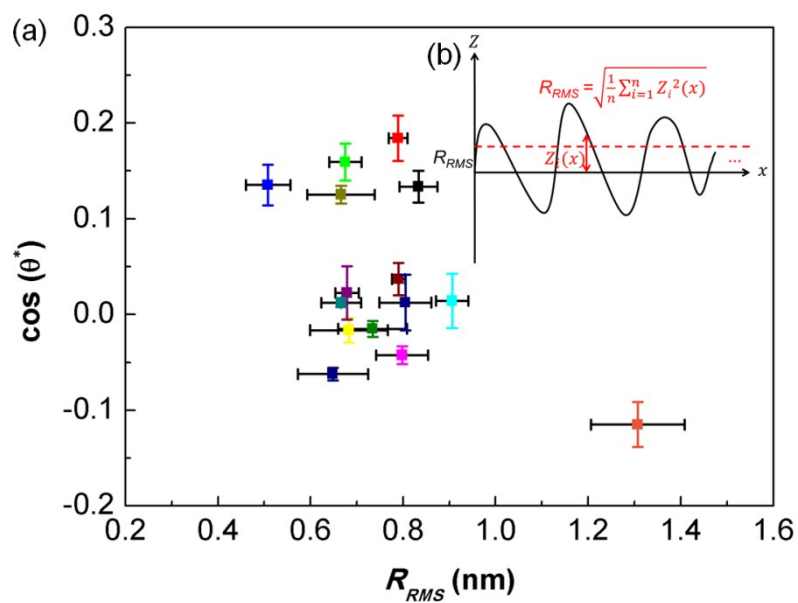


Figure S2 (a) The contact angle versus RMS roughness. (b) The definition of RMS roughness.

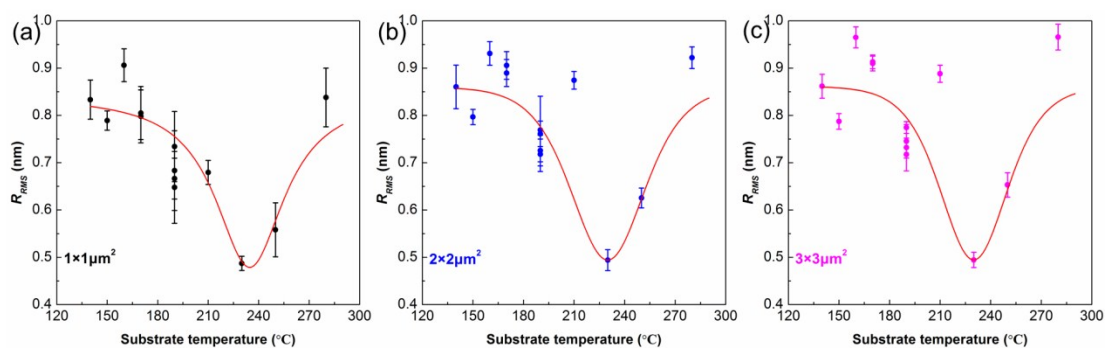


Figure S3 RMS surface roughness of Bi_2Se_3 films grown at various substrate temperatures from (a) $1 \times 1 \mu\text{m}^2$, (b) $2 \times 2 \mu\text{m}^2$ and (c) $3 \times 3 \mu\text{m}^2$.

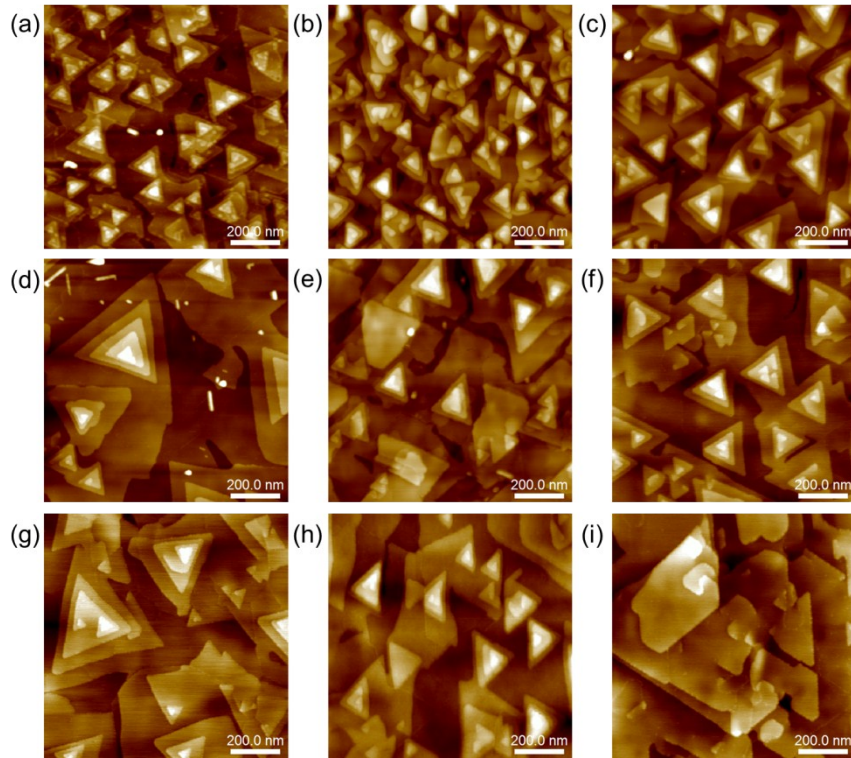


Figure S4 The AFM topography images of Bi_2Se_3 grown at (a) 140 °C for 40 minutes, (b) 150 °C for 40 minutes, (c) 160 °C for 60 minutes, (d) 170 °C for 60 minutes, (e) 190 °C for 40 minutes, (f) 190 °C for 60 minutes, (g) 190 °C for 90 minutes, (h) 210 °C for 60 minutes and (i) 250 °C for 60 minutes with the scale of $1 \times 1 \mu\text{m}^2$.

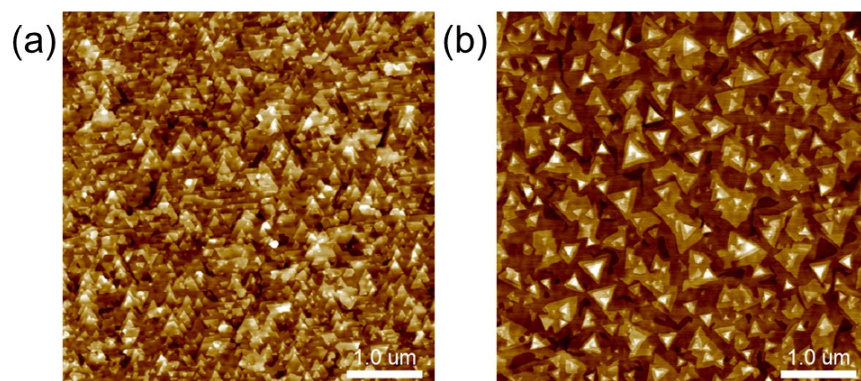


Figure S5 (a) AFM image of Bi_2Se_3 film prepared at 230 °C for 60 minutes with the scale of $5 \times 5 \mu\text{m}^2$. (b) AFM image of Bi_2Se_3 film prepared at 190 °C for 90 minutes with the scale of $5 \times 5 \mu\text{m}^2$.