

Supporting Information for

**Large-scale Production of Ultrathin Topological Insulator Bismuth  
Telluride Nanosheets by a Hydrothermal Intercalation and  
Exfoliation Route**

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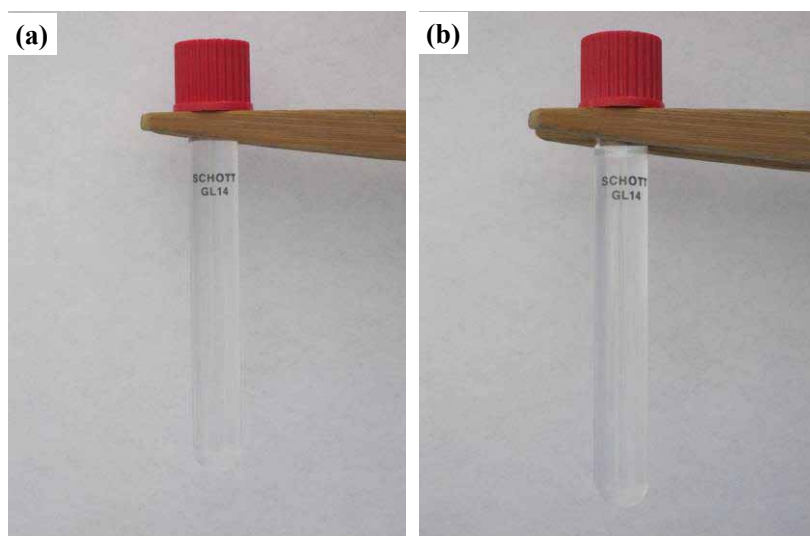


Figure S1. Digital images of the ethylene glycol solution of LiOH (a) before and (b) after reaction with the absence of  $\text{Bi}_2\text{Te}_3$  bulk. The solution is still clear after the reaction.

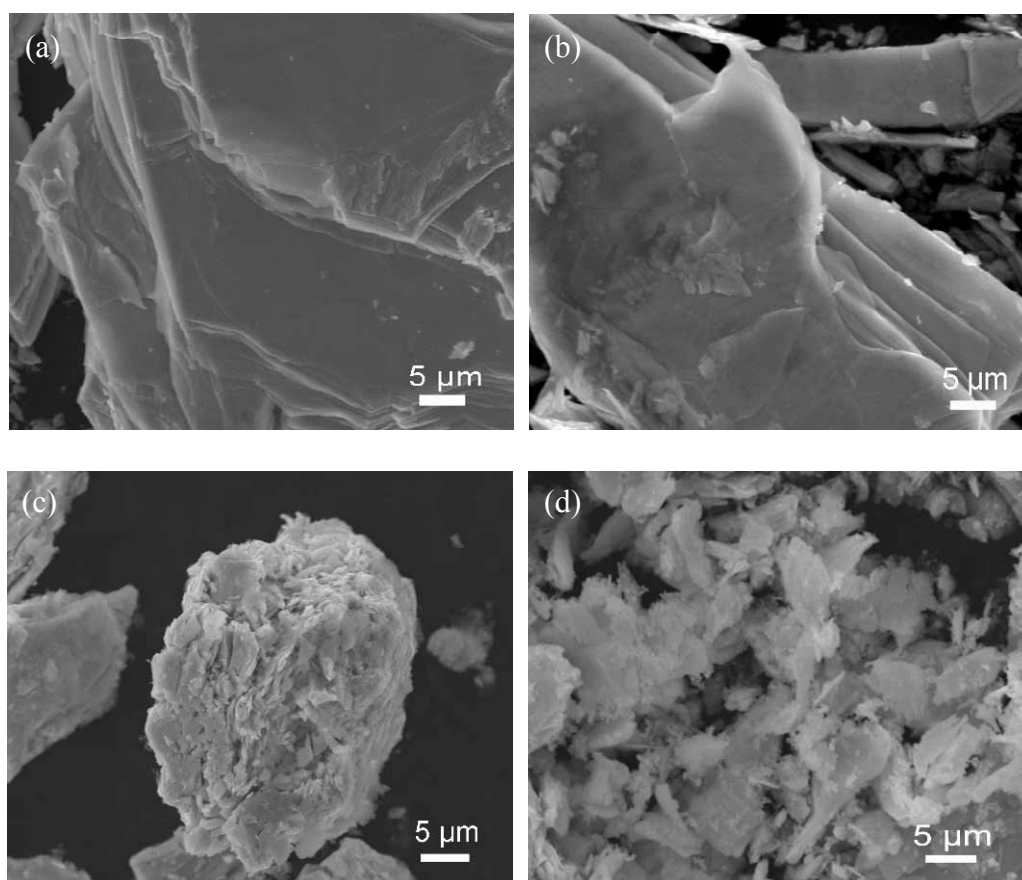


Figure S2. SEM images of (a) raw  $\text{Bi}_2\text{Te}_3$  bulk and products of the reaction at (b) 120 °C, (c) 160 °C, (d) 200 °C, respectively.

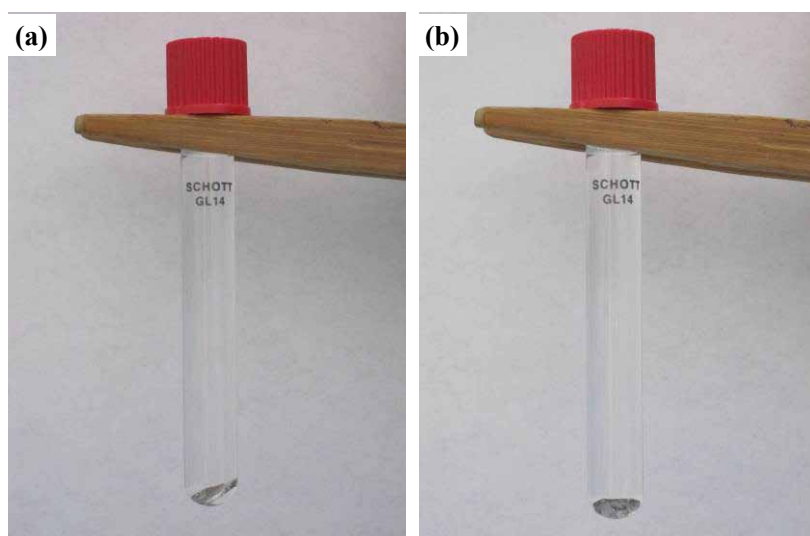


Figure S3. Digital images of the aqueous solution of LiOH (a) before and (b) after reaction with the present of  $\text{Bi}_2\text{Te}_3$  bulk. There is almost no change in the solution from these two images.

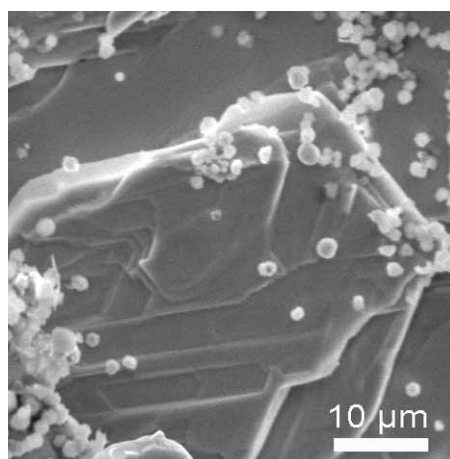


Figure S4. SEM image of the  $\text{Bi}_2\text{Te}_3$  bulk surface after a hydrothermal process in the aqueous solution of LiOH. The particles on the surface are considered to be the LiOH after drying.



Figure S5. Digital image of freestanding films of Bi<sub>2</sub>Te<sub>3</sub> nanosheets by filtration using porous polyvinylidene fluoride (PVDF) membranes with 0.45 μm nominal pore size.

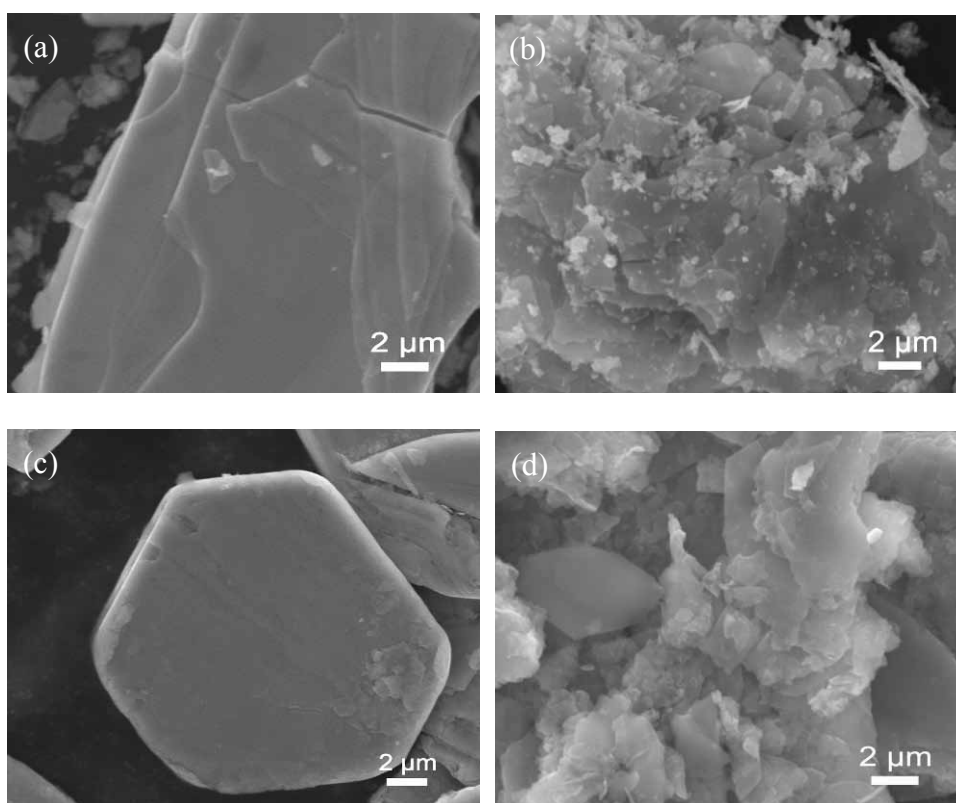


Figure S6. SEM images of (a) raw Bi<sub>2</sub>Se<sub>3</sub> bulk, (b) the Bi<sub>2</sub>Se<sub>3</sub> nanosheets produced by the hydrothermal intercalation/exfoliation method; (c) raw MoS<sub>2</sub> bulk and (d) the MoS<sub>2</sub> nanosheets produced by the intercalation/exfoliation method, respectively.