Antioxidative 2D Bismuth Selenide via Halide Passivation for Enhanced Device Stability

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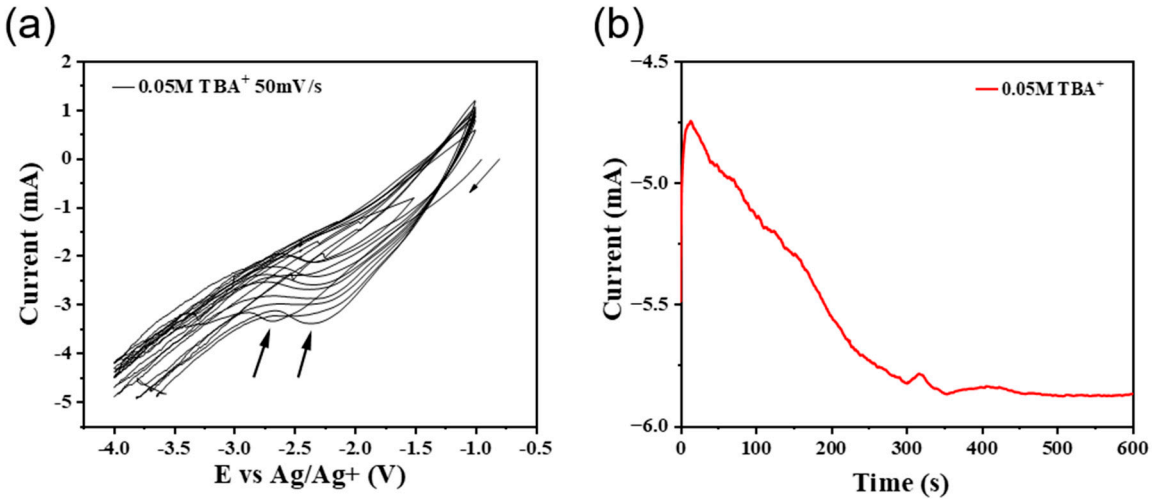

Figure S1. (a) Linear sweep voltammetry of the electrochemical intercalation of TBA^+ and (b) the profile of the current change with time at the potential of −2.5 V in the solution containing TBA^+.

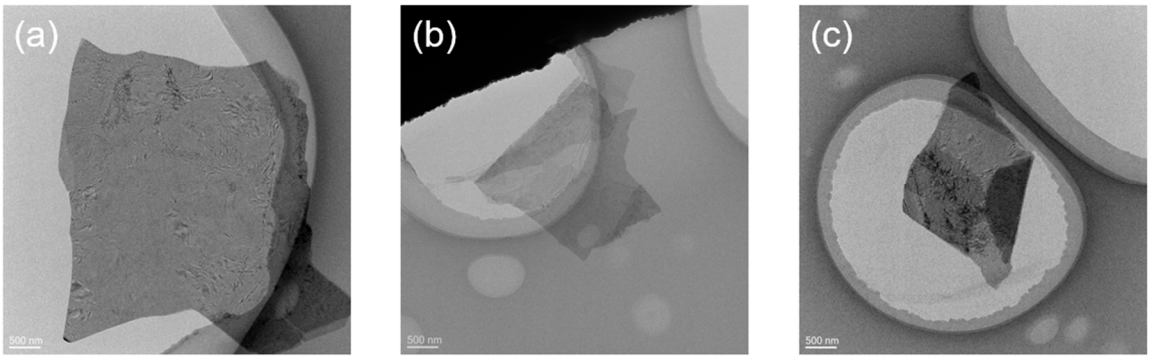

Figure S2. Transmission electron microscopy images of the TBAC-Bi_2Se_3, TBAB-Bi_2Se_3, and TBAI-Bi_2Se_3 nanosheets are shown as (a), (b) and (c), respectively.

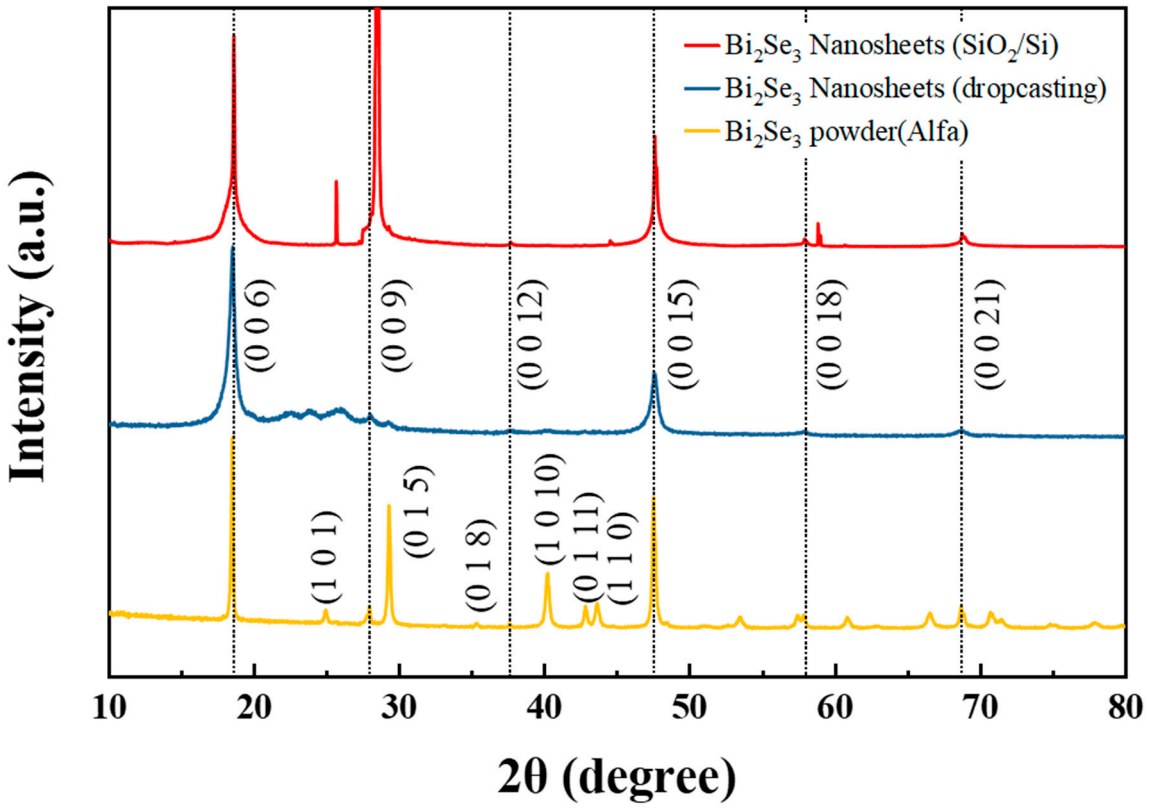

Figure S3: XRD pattern of the Bi_2Se_3 powder and PDF#JCPDS:033-0214. The peaks corresponding to the crystal facets were assigned and shown in a dotted line. Nanosheet film was fabricated by spin-coating, while the blue line corresponds to drop casting.

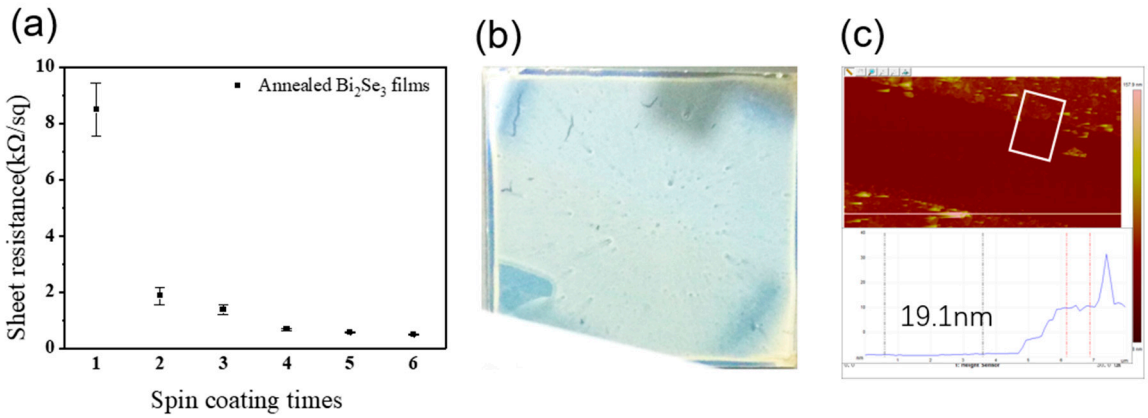

Figure S4: (a) Sheet resistance of annealed Bi_2Se_3 thin films obtained by different spin-coating times, (b) optical image of spin-coated films on a wafer, and (c) atomic force microscope image of the film with an artificial step. More than 4 times of spin-coating will form a thin Bi_2Se_3 film with a sheet resistance of 1 kΩ/sq.