

## Supporting Information

### Commercially available InSb as high-performance anode of secondary battery towards superior lithium storage

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## Electrochemical Test and Analysis

Electrochemical performance of InSb was studied by using CR2032-type coin cells assembled in an argon-filled glove-box. The metallic lithium foil was used as counter electrode, and the porous polypropylene film was used as the separator. Next, 1 mol L<sup>-1</sup> LiPF<sub>6</sub> in ethylene carbonate and dimethyl carbonate (1:1 v/v) consists of the electrolyte. The as-assembled batteries were galvanostatically discharged/charged at room temperature with a LANHE CT2001A battery test system in a voltage range of 0-3.0 V. The CV of the cells was analyzed on an electrochemical workstation (CHI660E) between 0 and 3.0 V. Electrochemical impedance spectroscopy (EIS) were performed on an electrochemical workstation (CHI660D) in the frequency range from 0.01 to 100,000 Hz.

The same Bruker D8 Focus X-ray diffraction apparatus was got to characterize the in-situ XRD of InSb at the 2θ range from 20° to 50°. Besides, the electrochemical tests during in-situ XRD were performed using a battery tester with a voltage window of 0-3.0 V and a current density of 30 mA g<sup>-1</sup>.