

Supplementary Information for

Phototransistor Based on Single In₂Se₃ Nanosheet

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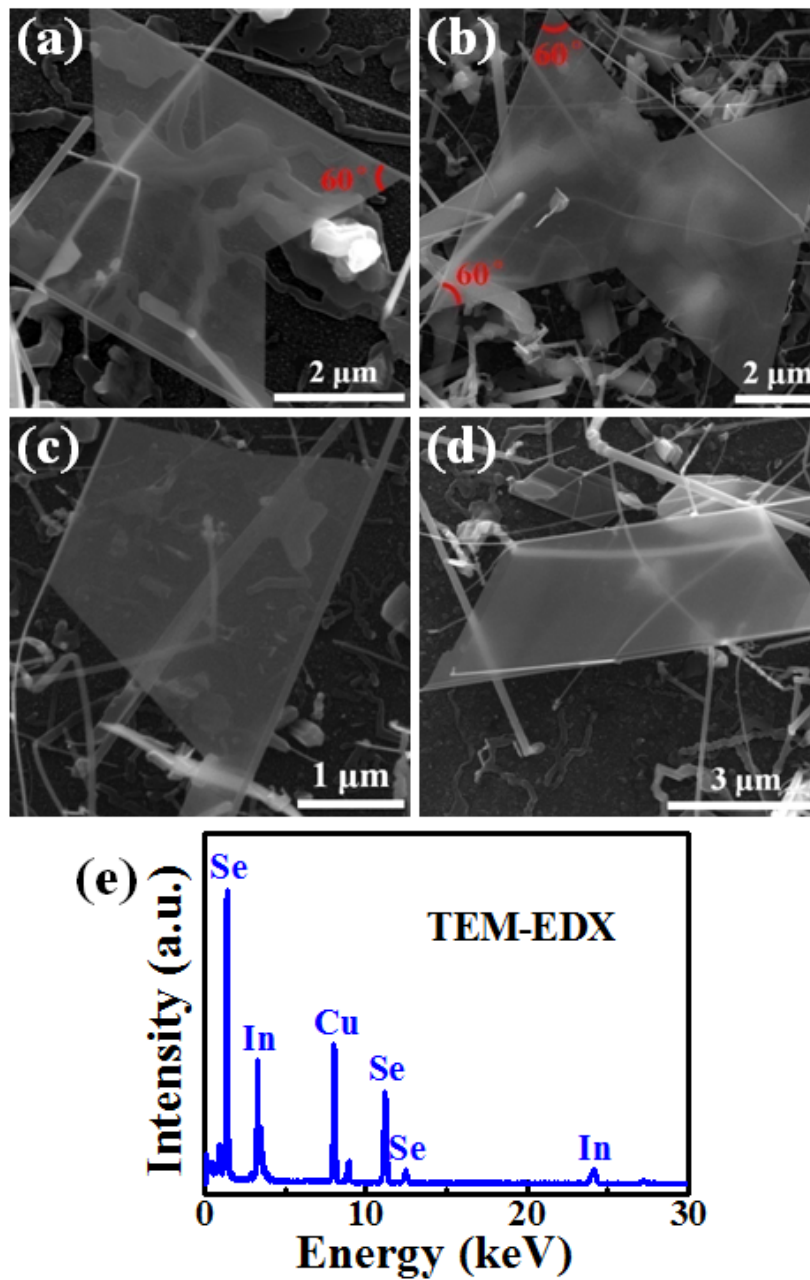


Fig. S1 (a, b, c, d) SEM images of typical micrometer-sized In_2Se_3 nanosheets. (e) TEM-EDX spectrum of single In_2Se_3 nanosheet, where Cu signal is from TEM grid.

Table S1 Scherrer sizes of In_2Se_3 nanosheets derived from XRD pattern in Fig. 1(b).

Crystal Plane	Scherrer Size (nm)
(002)	119
(004)	103
(101)	127
(102)	165
(104)	145
(008)	136
(110)	104
(0010)	122
(205)	207

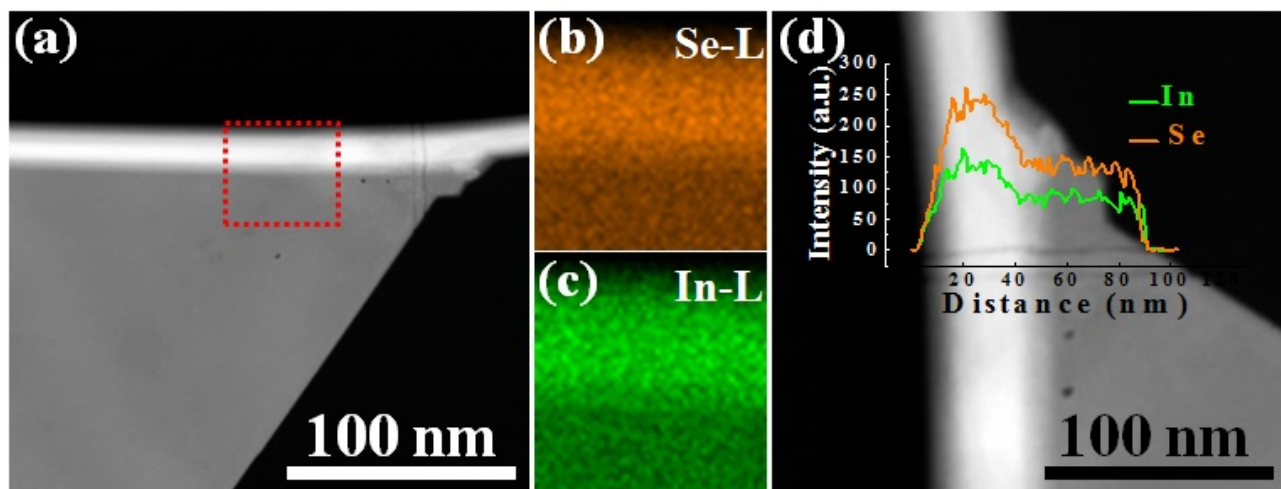


Fig. S2 (a) STEM image of an In_2Se_3 nanosheet epitaxially grown from an In_2Se_3 nanowire, showing spatially resolved EDX elemental mapping for (b) Se and (c) In of the selected area depicted in (a). (d) EDX line profiles for Se and In of the In_2Se_3 nanosheet.

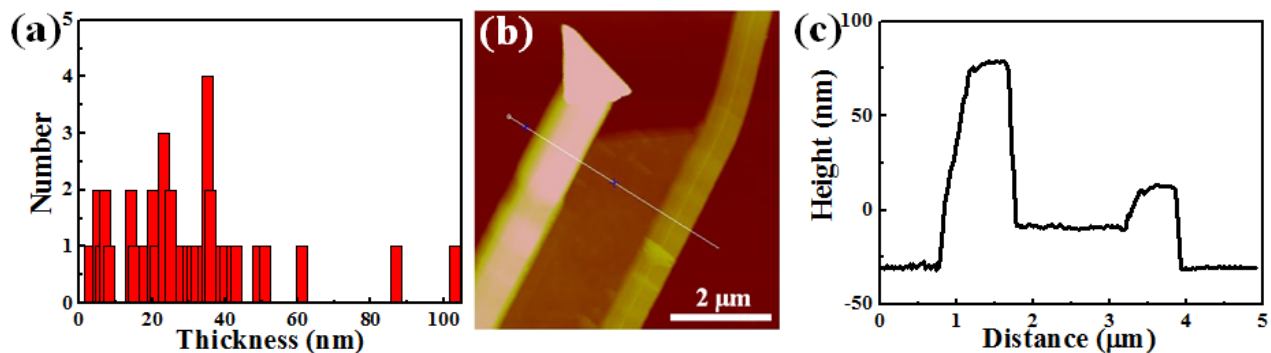


Fig. S3 (a) Statistics in thickness of In₂Se₃ nanosheets. (b) AFM image of single In₂Se₃ nanosheet. (c) Cross-sectional line profile of the In₂Se₃ nanosheet shown in (b).

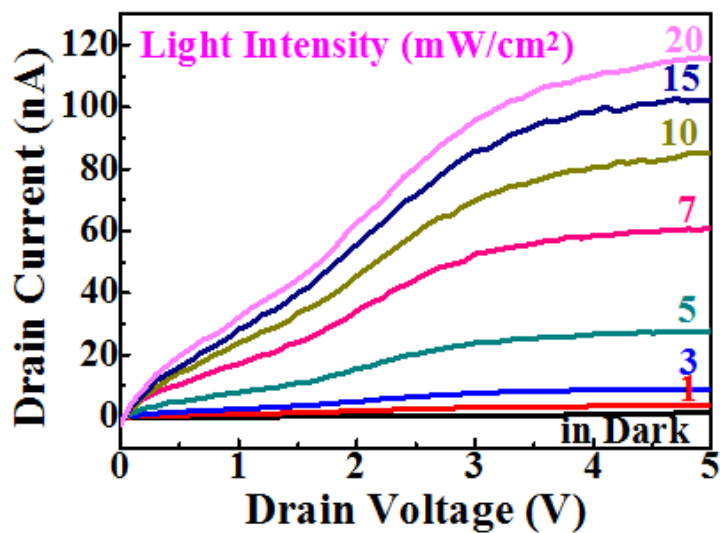


Fig. S4 Photoresponse of an In₂Se₃ nanosheet phototransistor at $V_{GS} = 0$ V, where incident light intensity is from 1 mW/cm² to 20 mW/cm².