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One-step synthesis of p-type GaSe nanoribbons and Outperformance for Photodetectors and Phototransistors

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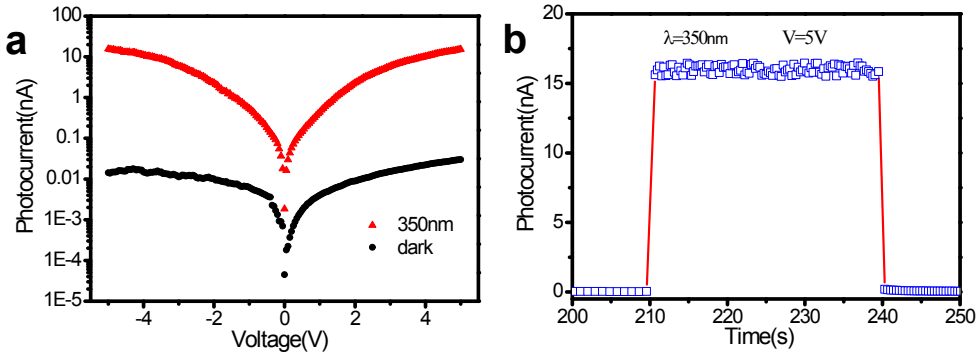

Figure S1. (a) The I-V curves of a typical GaSe-based nanodevice under dark condition and the illumination with 350 nm light. (b) The photocurrent versus time plots under dark condition and the illumination with 350 nm light.

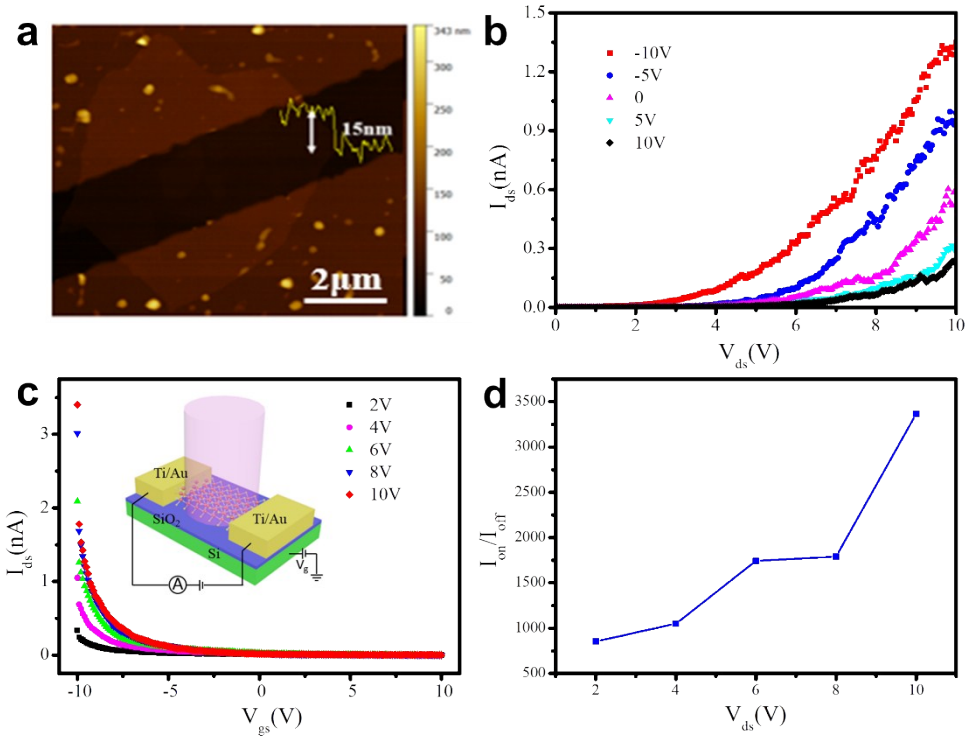

Figure S2. (a) The AFM image of the nanodevice showing a thickness of 15 nm (about 20 layers). (b) The drain–source current (I_{ds}) recorded as a function of source–drain bias (V_{ds}) at various the back-gate bias voltage (V_{gs}) under dark condition. (c) The drain–source current (I_{ds}) recorded as a function of back-gate bias voltage (V_{gs}) at various the source–drain bias voltage (V_{ds}) under dark condition, inset: a schematic diagram of the top-view of the GaSe-based phototransistor with electrical connections. (d) The on/off ratio at various the source–drain bias voltage (V_{ds}) according to I_{ds}-V_{gs} in (c).