

Supporting Information

Controlled Plasma-Thinning of Bulk MoS₂ Flakes for Photodetector Fabrication

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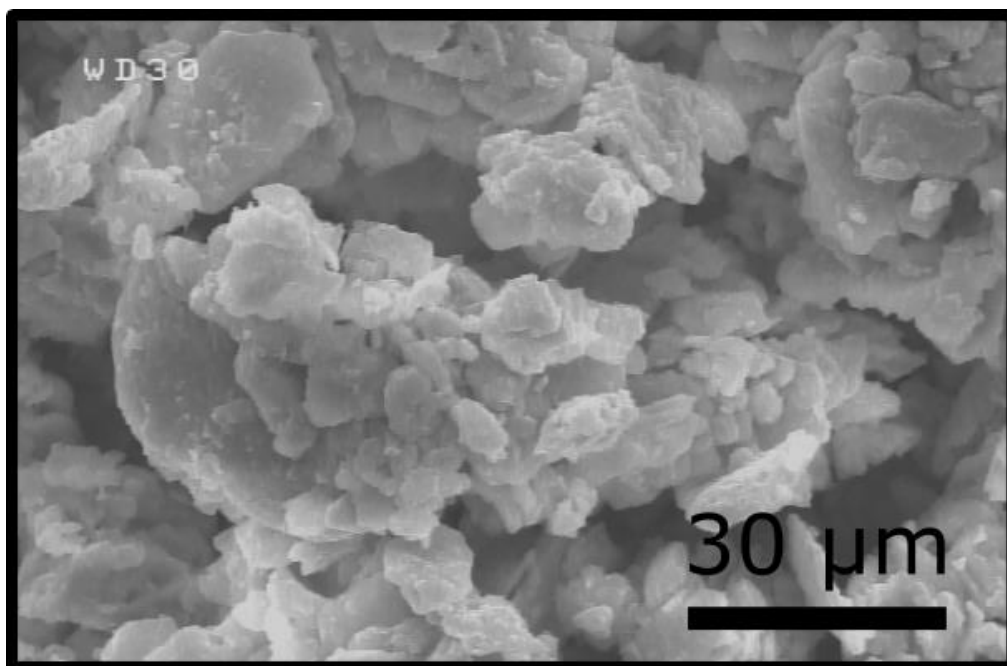


Figure S1 SEM image of bulk MoS₂ powders.

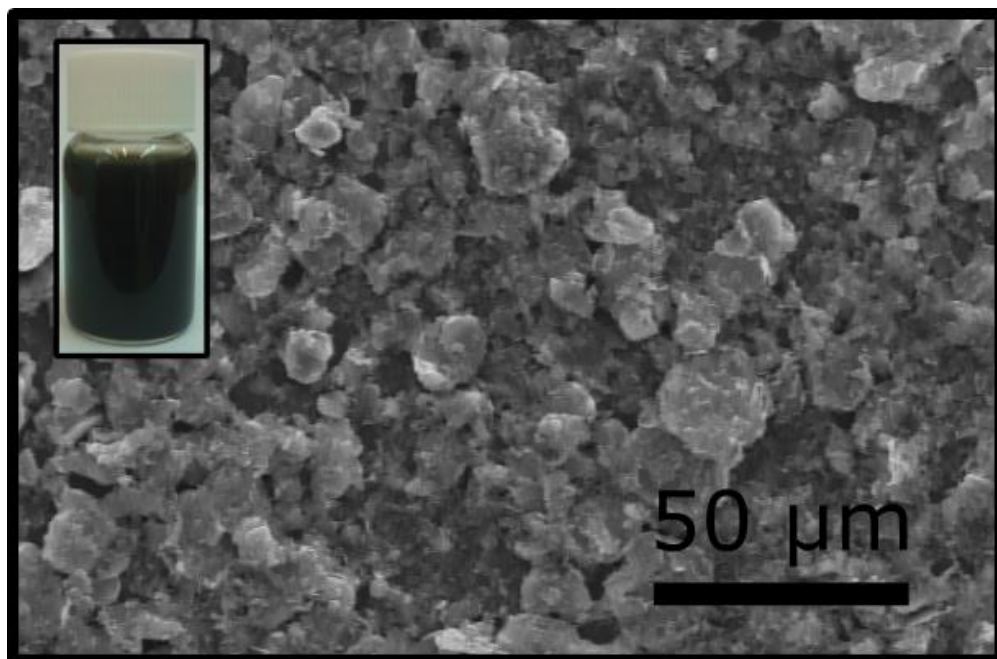


Figure S2 SEM image of the 15 min sonicated MoS₂ flakes with corresponding dispersion shown in inset.

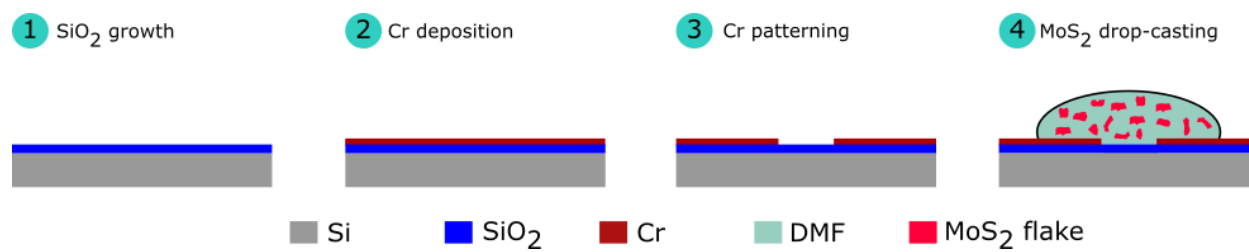


Figure S3 Schematic illustration of the device fabrication steps.

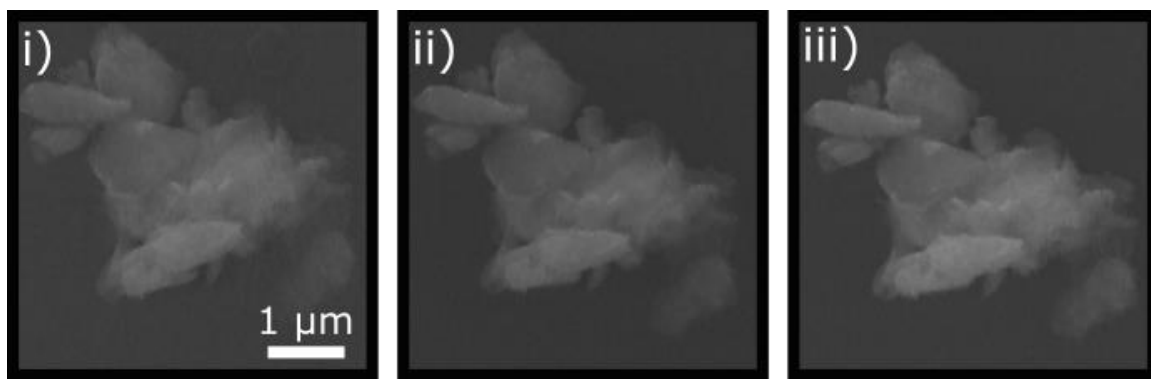


Figure S4 SEM image of *i*- Pristine flake. *ii*- After 5 min H₂:O₂ plasma (200 sccm, 200 W), *iii*- After 10 min H₂:O₂ plasma (200 sccm, 200 W).

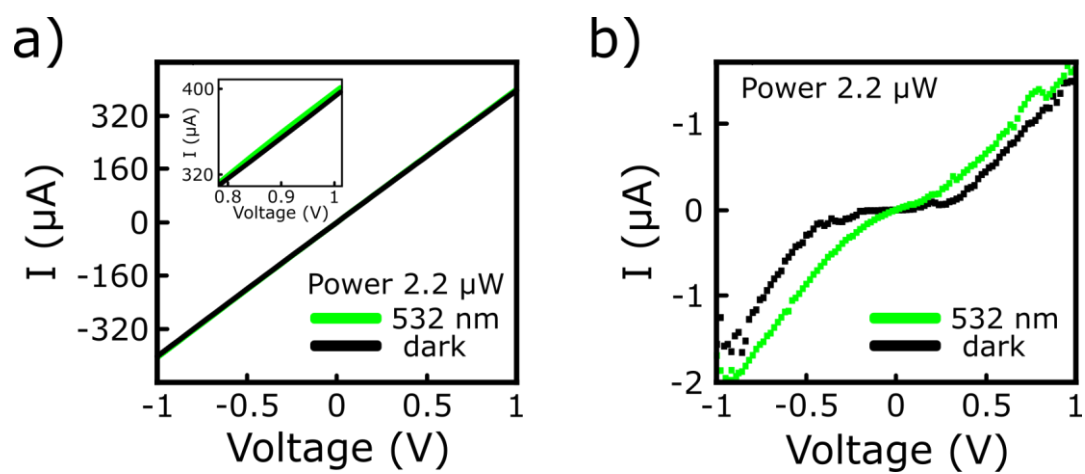


Figure S5 Current-voltage measurements of the **a)** bulk and **b)** TMF photodetectors in dark and under 532 nm laser excitation at optical power of $2.2 \mu\text{W}$.