Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting Information

High performance, self-powered photodetectors based on graphene/silicon Schottky junction diode

Dharmaraj Periyanagounder[1,2] Paulraj Gnanasekar[1] Purushothaman Varadhan[2] Jr-Hau He[2] and Jeganathan Kulandaivel[1]*

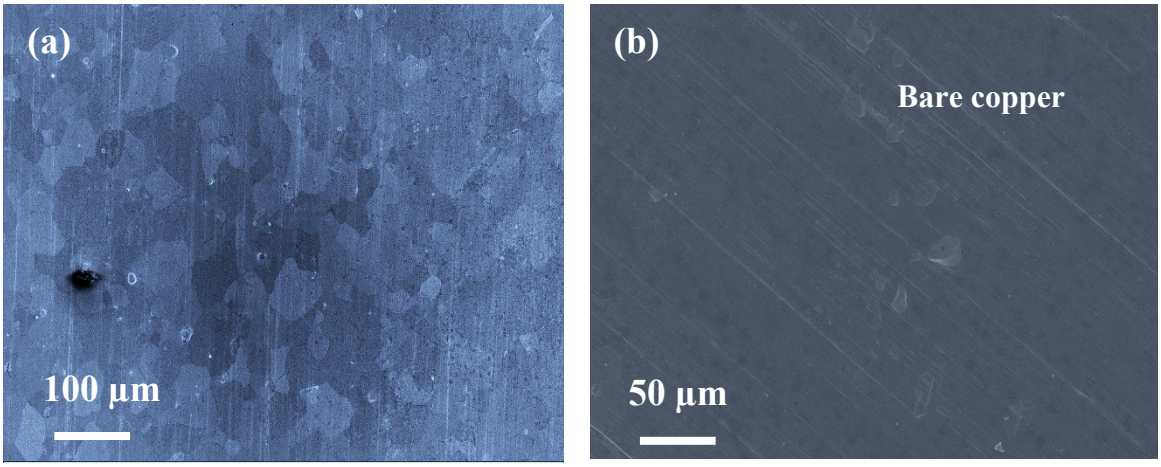

Figure S1: FESEM images of (a) graphene grown on copper and (b) bare copper foil

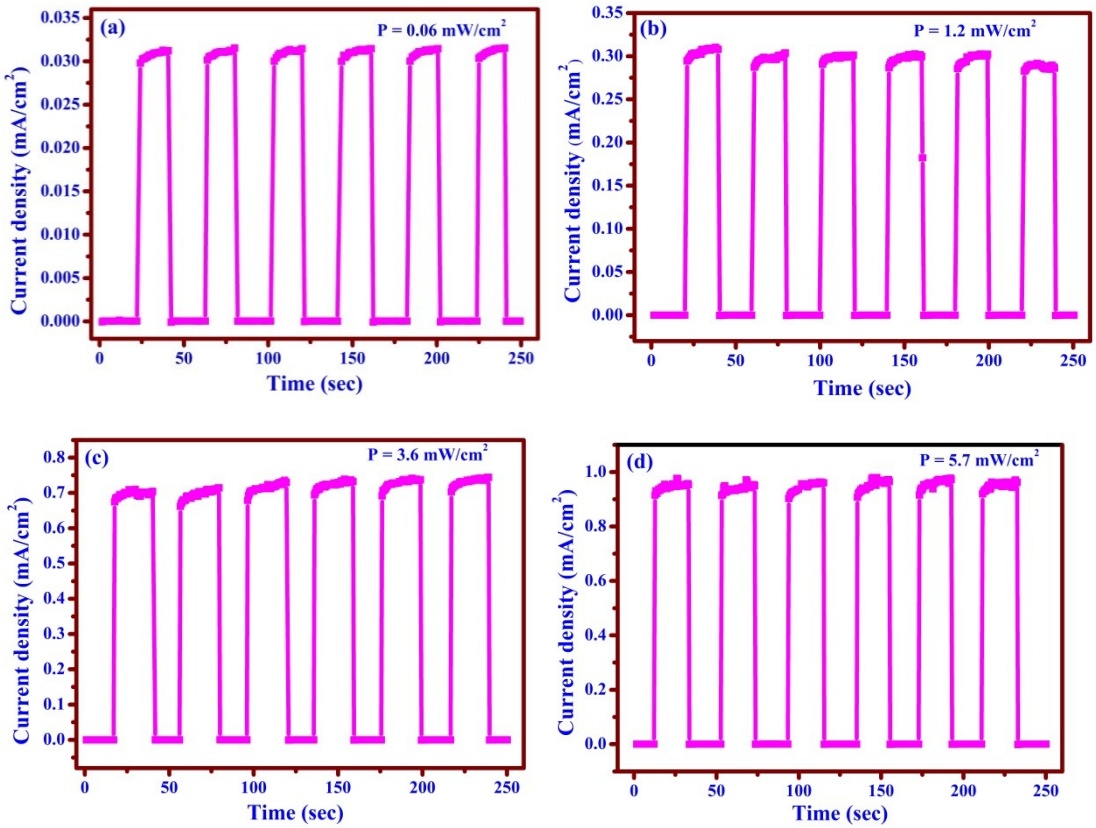

Figure S2: Time dependent photocurrent response of the Gr/Si vdW heterojunction photodetector for various power densities under self-powered conditions (532 nm).

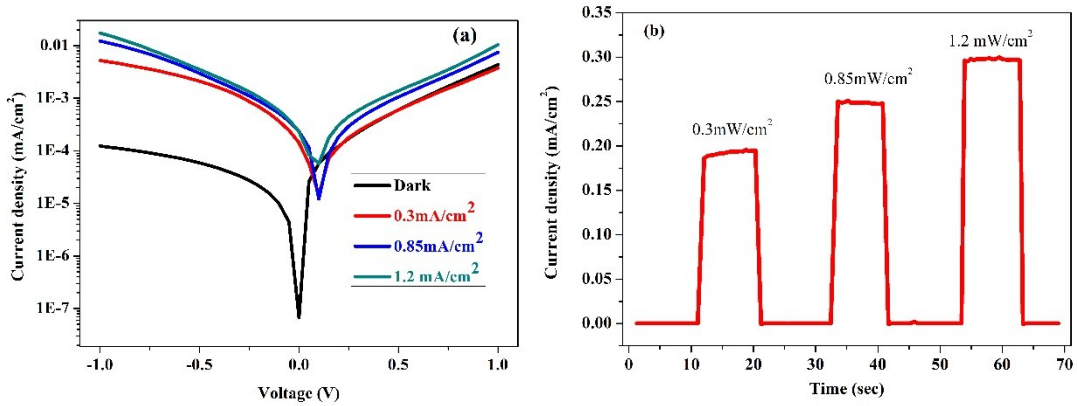

Figure S3: (a) J-V characteristics of Gr/Si vdW Schottky junction for various laser powers (660 nm) and (b) Photo response of the Gr/Si vdW heterojunction photodetector for various power densities under self-powered conditions (660 nm).

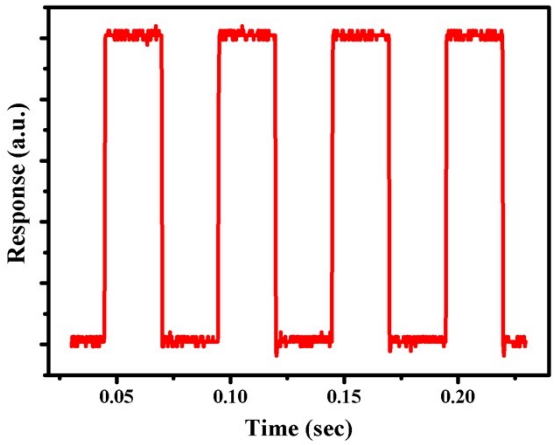

Figure S4: Transient photo response of the Gr/Si vdW Schottky junction diode upon the illumination of 532 nm laser.

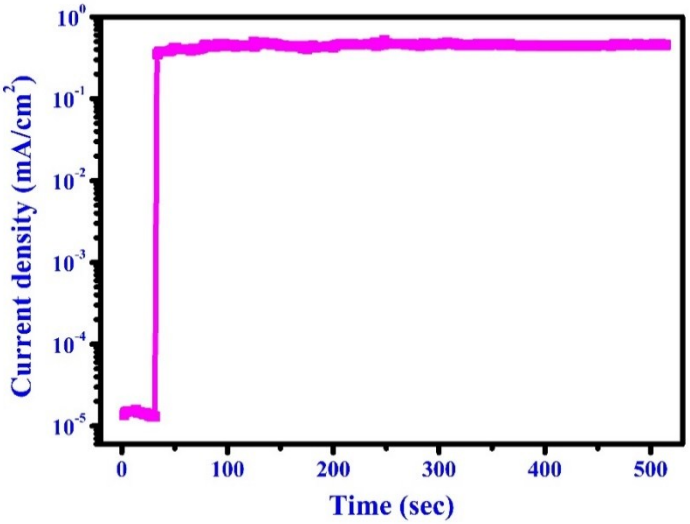

Figure S5: Photocurrent stability of the device under self-powered conditions.