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

Supporting Information

Surface Charge Transfer Doping Induced Inversion Layer for High-performance Graphene/Silicon Heterojunction Solar Cells

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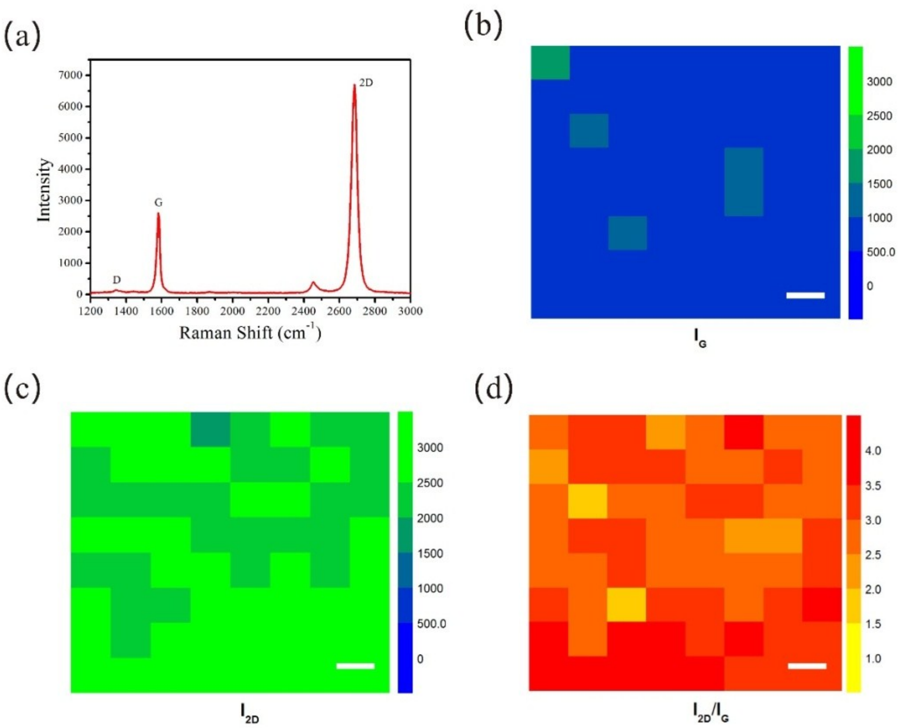

Figure S1. (a) Raman spectrum of the monolayer graphene. (b), (c) Intensity mapping for *G* and *2D* peak, respectively. (d) Mapping of the intensity ratio of *2D* and *G* peak. The scale bars are 1.5 μm.

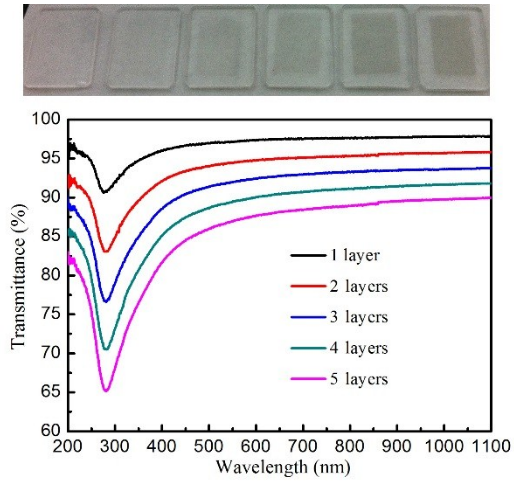

Figure S2. Transmittance spectra of graphene with different layer thickness. 3-layer graphene possesses a transmittance around ~93% at the visible to infrared light range.

Table S1: Sheet resistance of graphene with different layer thickness.

Graphene layers	1	2	3	4	5
Sheet resistance (kΩ/□)	1.03	0.70	0.54	0.43	0.39

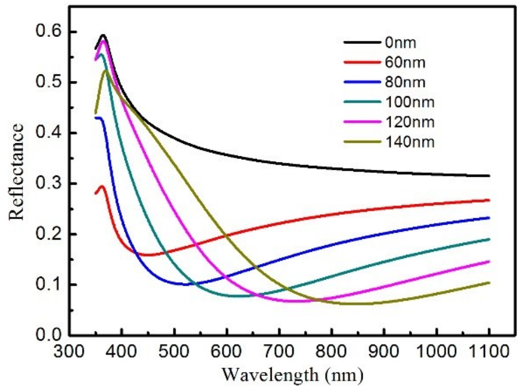

Figure S3. Finite Difference Time Domain (FDTD) based simulations of reflectance spectra of planar Si with different thickness of PMMA antireflection coating. 100 nm PMMA offers the best effect for reducing the optical loss of the device.