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Electronic Supplementary Information

Self-deposition of Pt Nanoparticles on Graphene Woven Fabrics for Enhanced Hybrid Schottky Junction and Photoelectrochemical Solar Cells

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Figures S1~S4

Table S1



Figure S1. Black dots are the PCEs of pristine GWF/n-Si solar cells. Green and red dots are the PCEs of Pt-GWF/n-Si solar cells fabricated by PAD method and self-deposition method respectively. The deposited times are both 10 min.



Figure S2. (a,b) Optical images and (c,d) SEM images of GWF/n-Si and Pt-GWF/n-Si.



Figure S3. (a) SEM image of GWF with Pt NPs deposition. (b) EDS spectrum of Spot 1 marked in (a). (c) *J-V* curves of pristine GWF/n-Si solar cell (black) and Pt-GWF/n-Si solar cell (red).



Figure S4. (a) UPS spectrum of n-type silicon. $E_{n-Si-cutoff}$ is the secondary electron cut-off region of n-type silicon and E_{F-Si} is the Fermi edge of n-type silicon. (b) UPS spectrum of graphene. $E_{Gr-cutoff}$ is the secondary electron cut-off region of graphene and E_{F-Gr} is the Fermi edge of graphene. (c) Optical microscope image of GWF on n-Si. The red box represents a grid of GWF and the blue box represents the exposed silicon.

Junction solar cens.						
Samples	$V_{\rm oc}~({\rm mV})$	$J_{\rm sc}$ (mAcm ⁻²)	FF	<i>PCE</i> (%)	$R_{\rm s}\left(\Omega ight)$	$R_{ m sh}\left(\Omega ight)$
Sample A	488	17.8	43.0	4.23	11.6	336
Sample B	479	16.6	46.1	4.15	11.2	1155
Sample C	554	24.5	44.6	6.87	10.0	1019
Sample D	574	23.4	52.0	7.94	9.3	3835

Table S1. Device parameters (V_{oc} , J_{sc} , FF, PCE, R_s , R_{sh}) of the Pt-GWF/n-Si Schottky junction solar cells.