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Graphene enabled all-weather solar cells for electricity harvest from sun and rain

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Supporting Figures

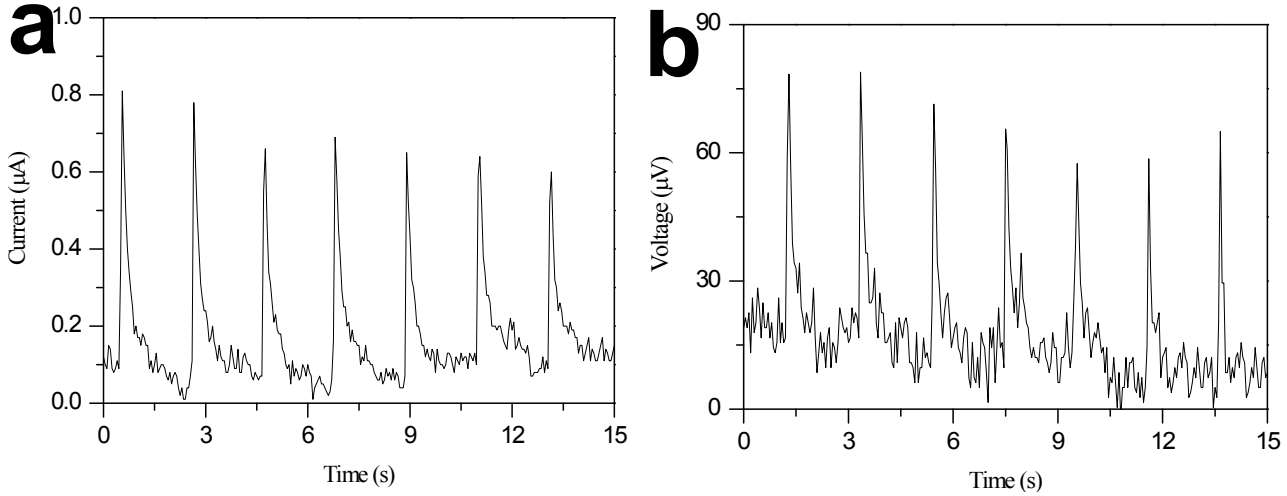

Fig. S1 (a) Current and (b) voltage signals produced by dropping simulated raindrops (0.6 M NaCl aqueous solution) on a monolayer graphene according to solar cell architecture in Figure 1b. The injection velocity was controlled at 100 mL h^{-1}.

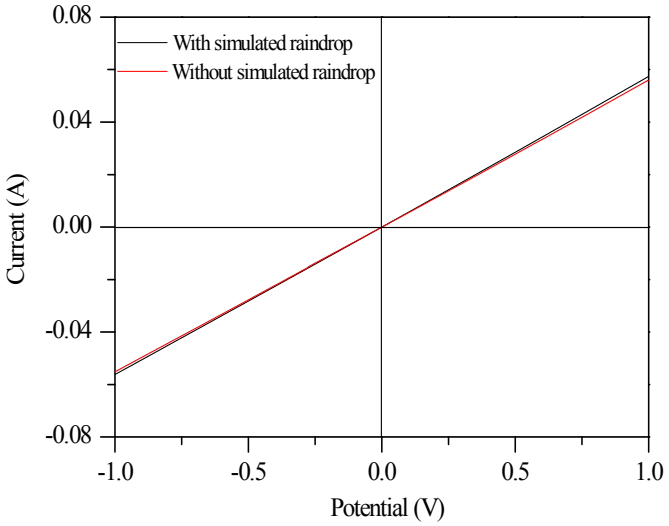

Fig. S2 The I-V curves for electrophoretic deposited graphene film on ITO/glass/FTO substrate and simulated raindrop/electrophoretic deposited graphene film on ITO/glass/FTO substrate.

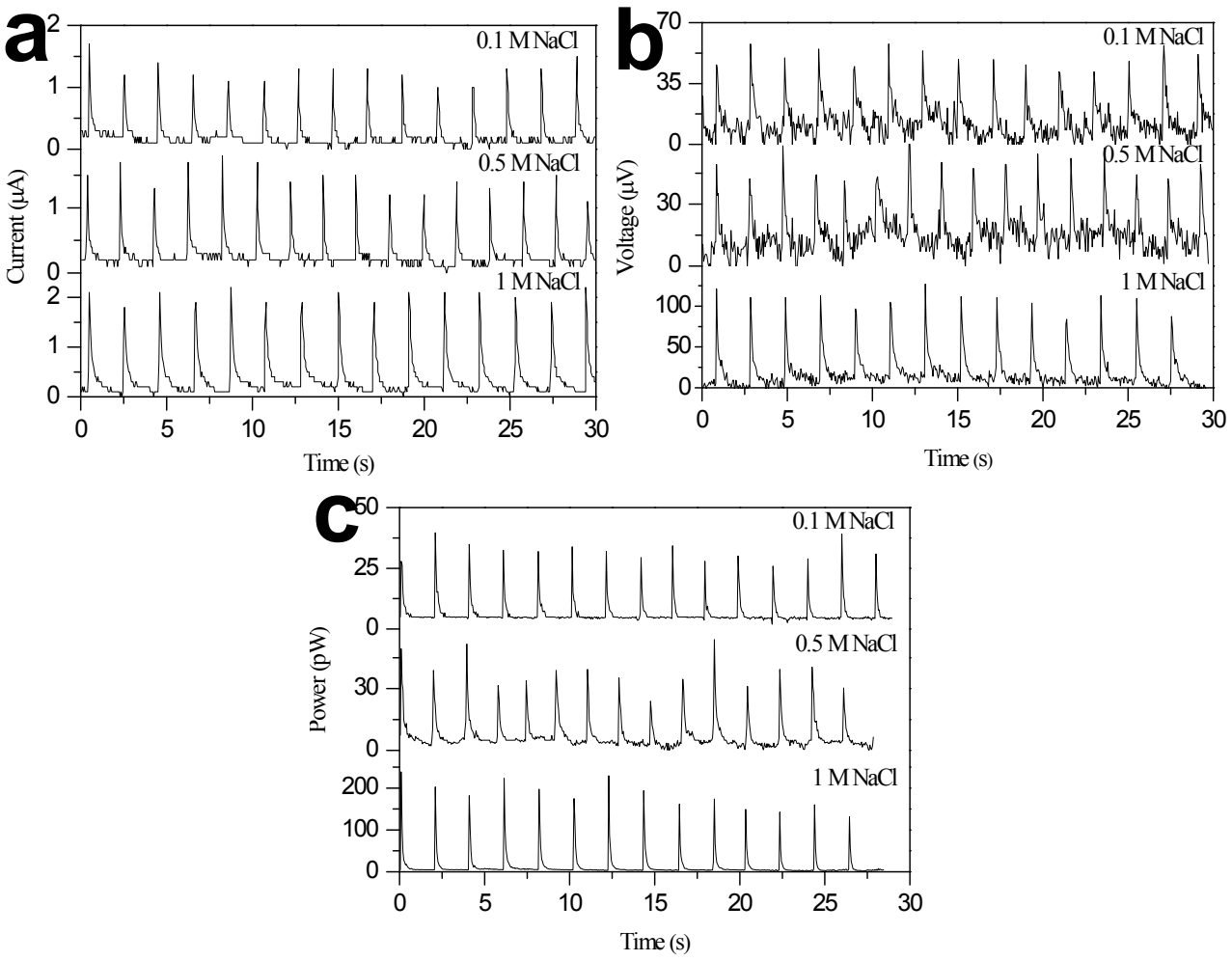

Fig. S3 (a) Current and (b) voltage signals as well as (c) power output produced by dropping simulated rain droplets on electrophoretic deposited graphene electrode according to architecture in Fig. 1a. The injection velocity was 100 mL h^{-1}.

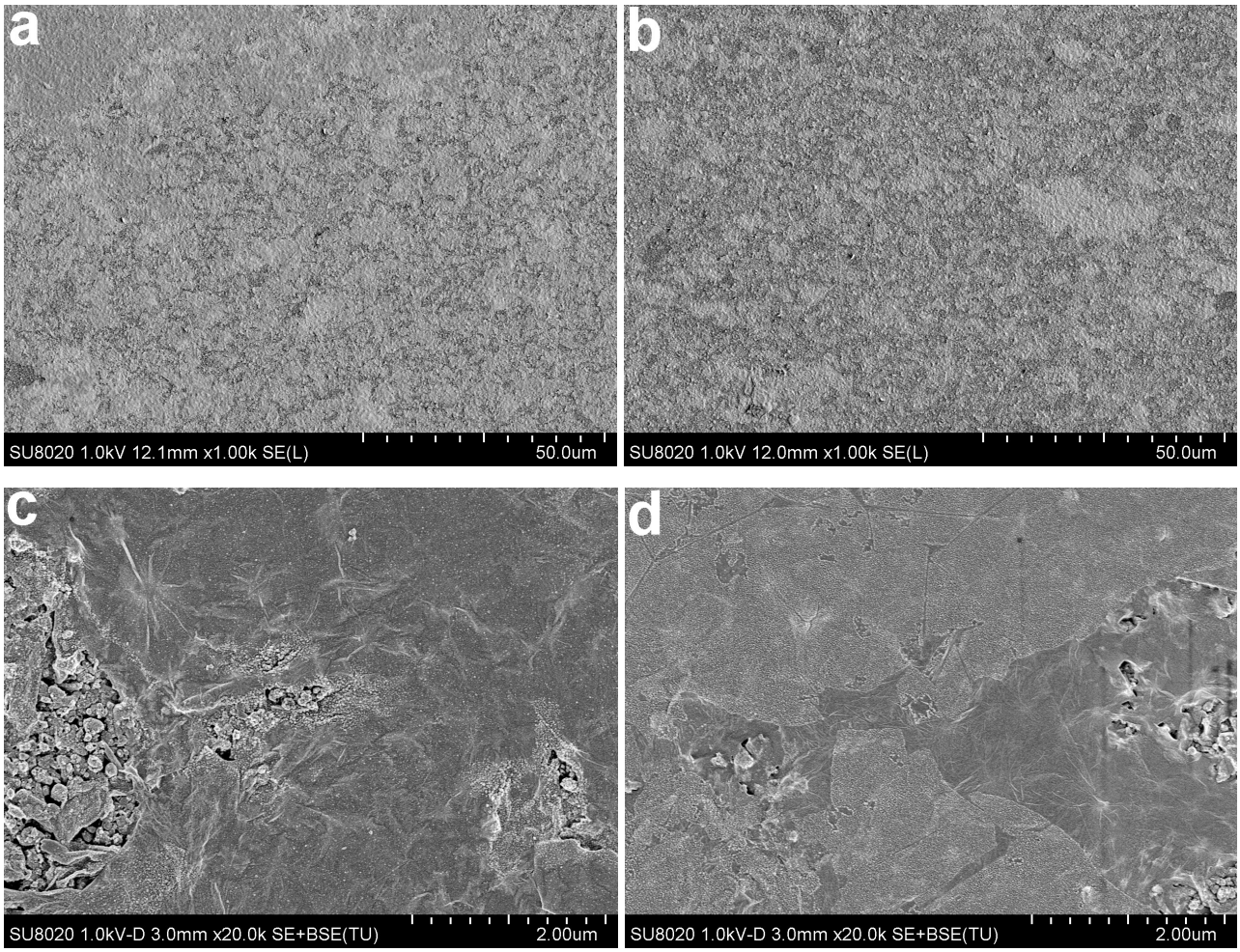

Fig. S4 Top-view SEM images of the graphene electrode (a)&(c) before and (b)&(d) after dropping 0.6 M NaCl aqueous solution droplets.

The SEM photograph of the graphene electrode before dropping simulated raindrops show a high coverage on FTO substrate, as shown in Fig. S1a, while partial graphene nanosheets have been rinsed after persistently dropping simulated rain droplets (Fig. S1b). Moreover, the graphene surface is smoothing with no purities, as shown in Fig. S1a, but gigantic amounts of nanoparticles have covered on graphene surface after dropping 0.6 M NaCl aqueous solution droplets. The nanoparticles may be the crystals of adsorbed NaCl.