Supporting information

Synthesis of silicon-doped reduced graphene oxide and its applications in dye-sensitive solar cells and supercapacitors

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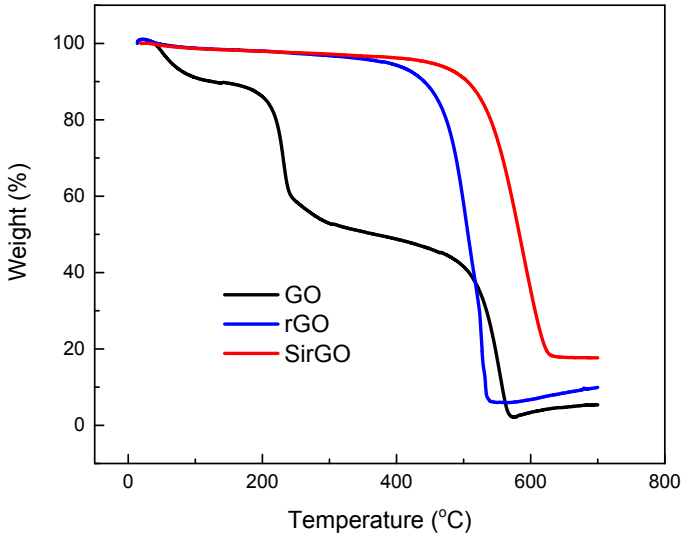

Figure S1. TGA curves of GO, rGO and Si-rGO

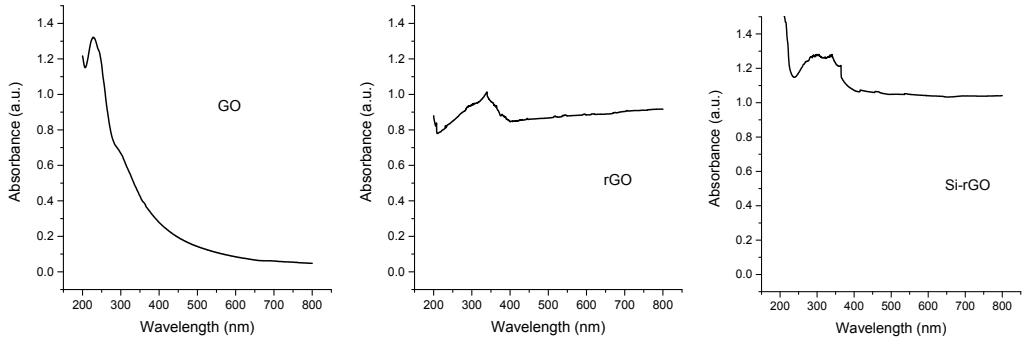

Figure S2. UV-vis absorption spectra of GO, rGO and Si-rGO. The spectrum of GO has a peak at 235 nm which is related to π-π* electron transition. After reduction, a wider peak would be observed at 300 nm, which shows the electronic conjugation of GO was restored. The spectrum of Si-rGO also has a wider peak at 300 nm, which is similar with rGO. The un-sharp of the peak for rGO and Si-rGO should be originated from their poor dispersibility in water.

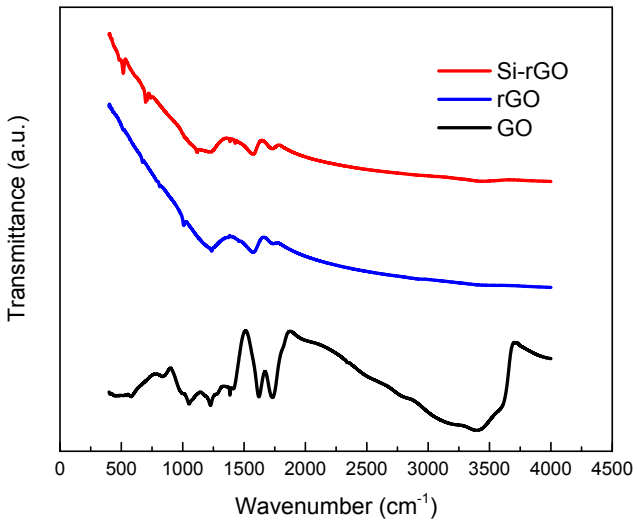

Figure S3. FTIR spectra of GO, rGO and Si-rGO. FTIR bands at 1045, 1221, 1405, 1621 and 1734 were observed for GO. The wider band at 3400 cm^{-1} is corresponded to -OH group, which disappear in rGO and Si-rGO. Compared to rGO, there is no observed new band detected in Si-rGO, which should be caused by the lower Si doping concentration.