

Supplementary Material (ESI) for Journal of Materials Chemistry

**Facile synthesis of platinum nanoparticles decorated graphene by one-step  $\gamma$ -ray induced reduction for high rate supercapacitors**

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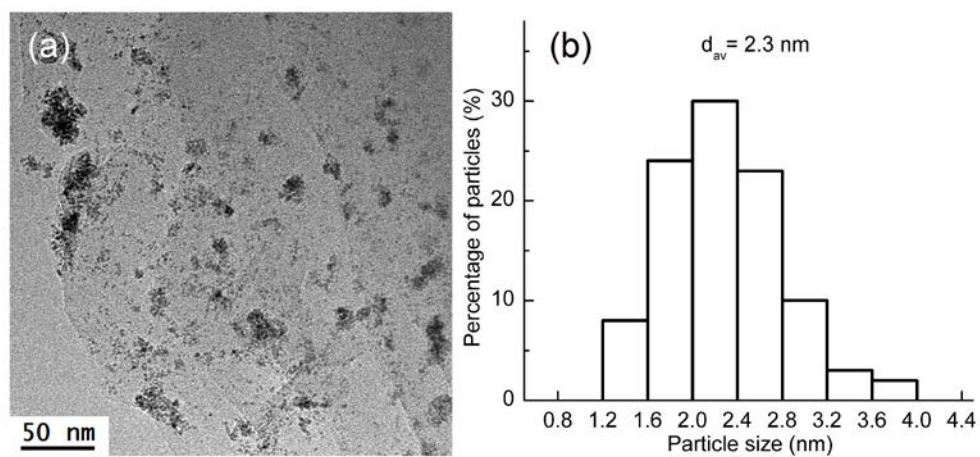


Fig. S1 (a) TEM image of PR-I; (b) particle size histograms of PtNPs in PR-I, 150 particles counted for the sample.

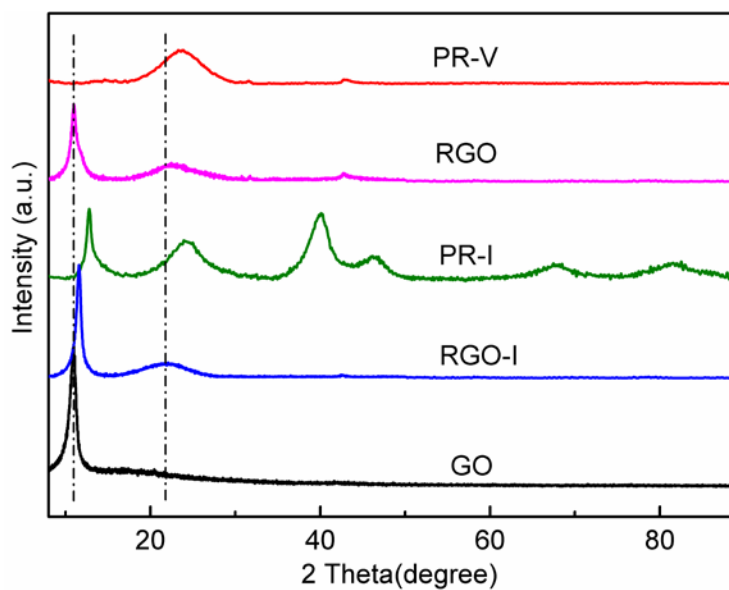


Fig. S2 XRD patterns of GO, RGO and PtNPs/RGO composites irradiated at different pH.

(RGO-I represents the RGO prepared at pH 4.5).

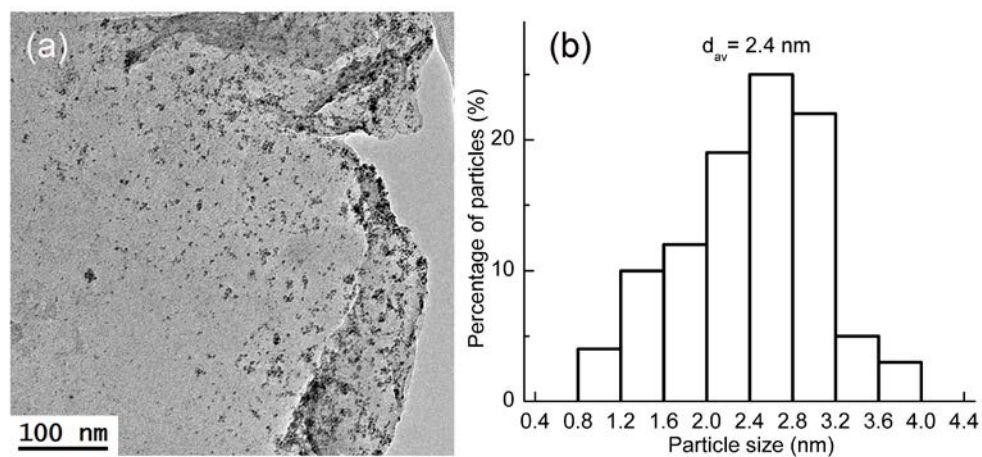


Fig. S3 (a) TEM image of PR-VI; (b) particle size histograms of PtNPs in PR-VI, 150

particles counted for the sample.

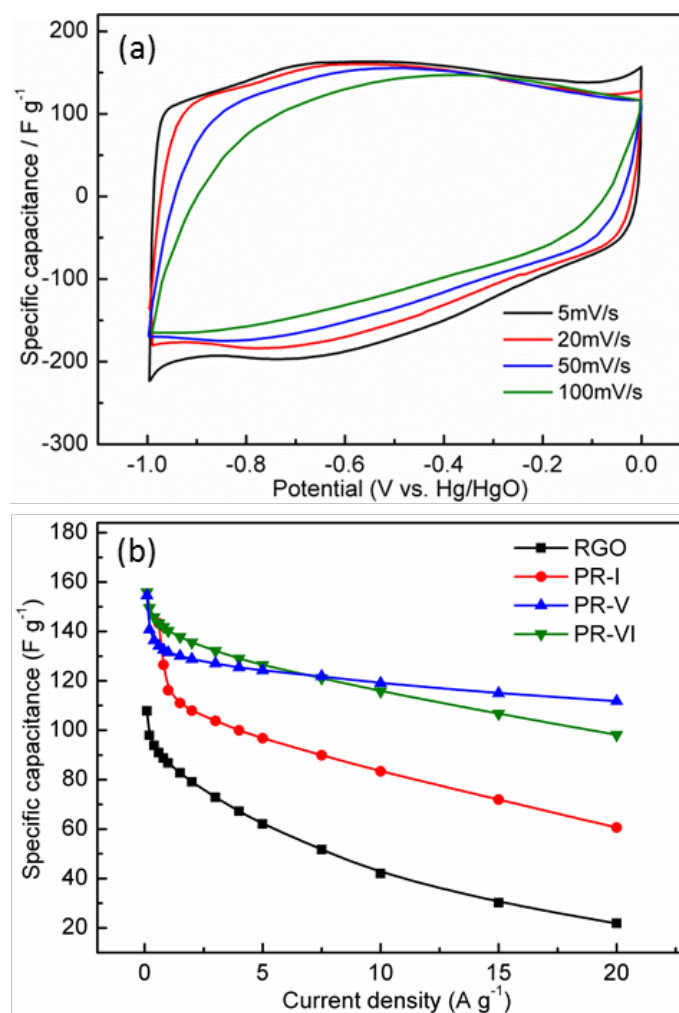


Fig. S4 (a) CV curves of PR-VI as electrodes with voltage between -1 and 0 V (vs Hg/HgO) in 6 M KOH at different scan rates; (b) Specific capacitances of RGO, PR-I, PR-V, and PR-VI electrodes as a function of discharge current density.

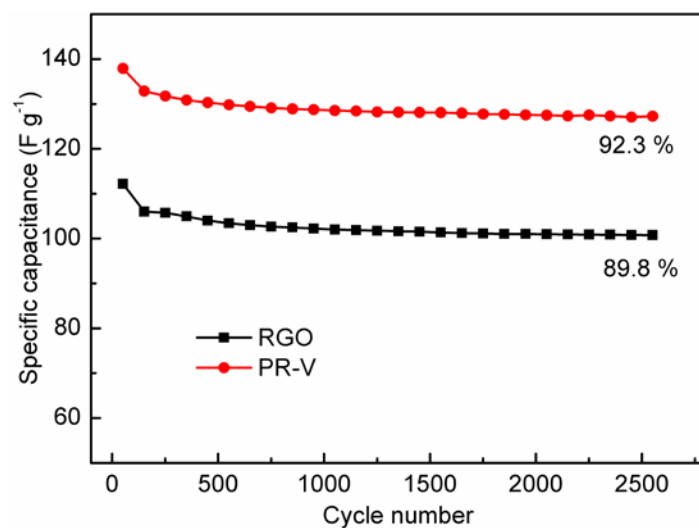


Fig. S5 Long-term cycling performance of RGO and PR-V as electrodes at a current density of  $0.6 \text{ A g}^{-1}$ .