

# Facile synthesis of well-dispersed Pd-graphene nanohybrids and their catalytic properties in 4-nitrophenol reduction

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**Supplementary Materials**

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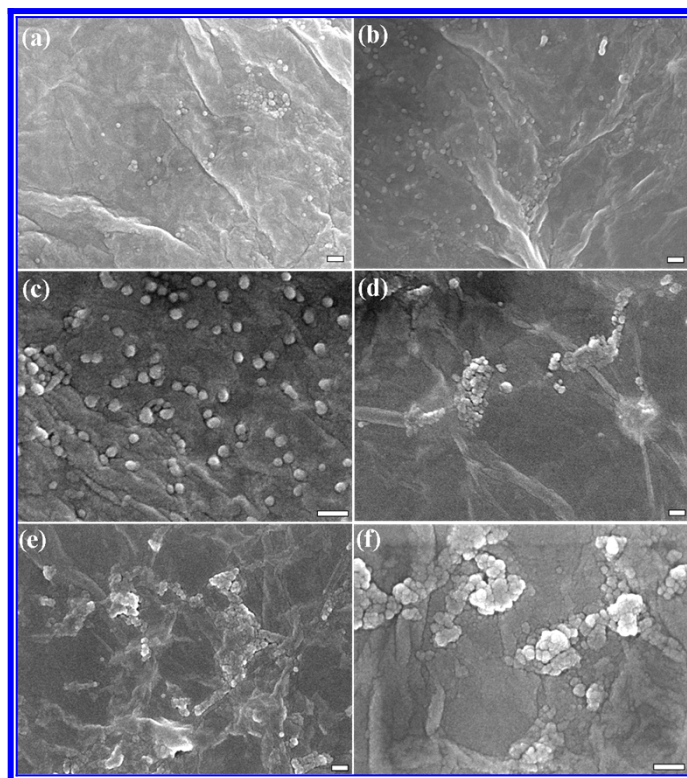


Fig. S1 SEM images of distribution of Pd nanoparticles on the surface of graphene for different Pd loading amounts. (a) 0.25 wt%;(b) 0.5 wt%; (c) 1.0 wt%; (d) 1.5 wt%; (e) 2.0 wt% and (f) 3.0 wt%. The scale bar in the images represents 100 nm.

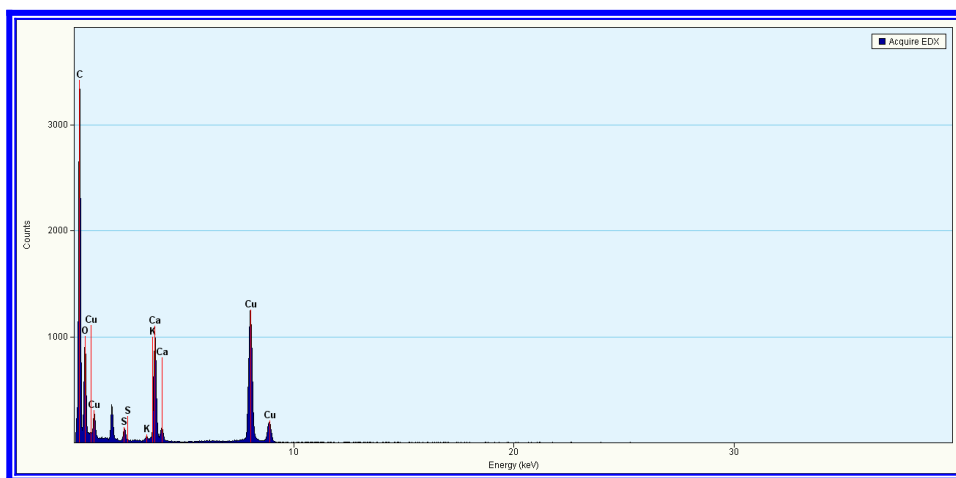


Fig. S2 EDX detection result for the Pd-FG hybrid on the blank region (the Cu peaks come from the copper grid).

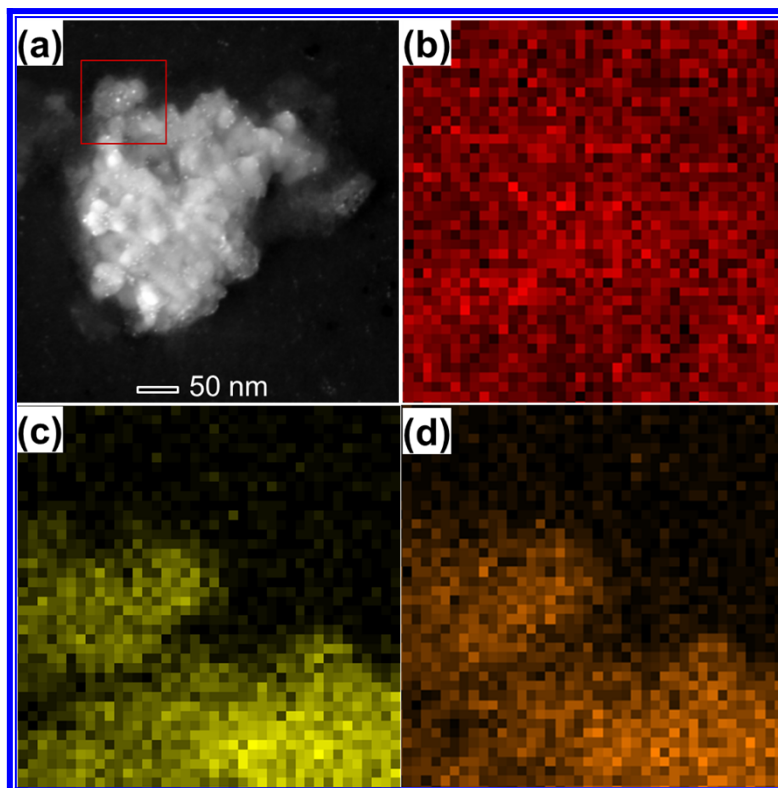
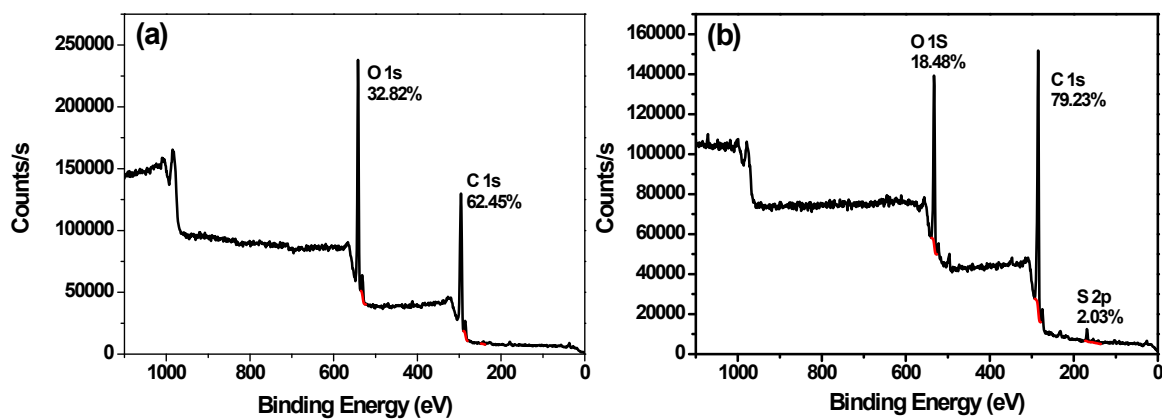


Fig. S3 HAADF/STEM image of the Pd-FG nano hybrid (a) and the EDS elemental mapping of (b) carbon, (c) Pd and (d) sulphur in the same square area in (a), depicting the distribution of the constituting elements.



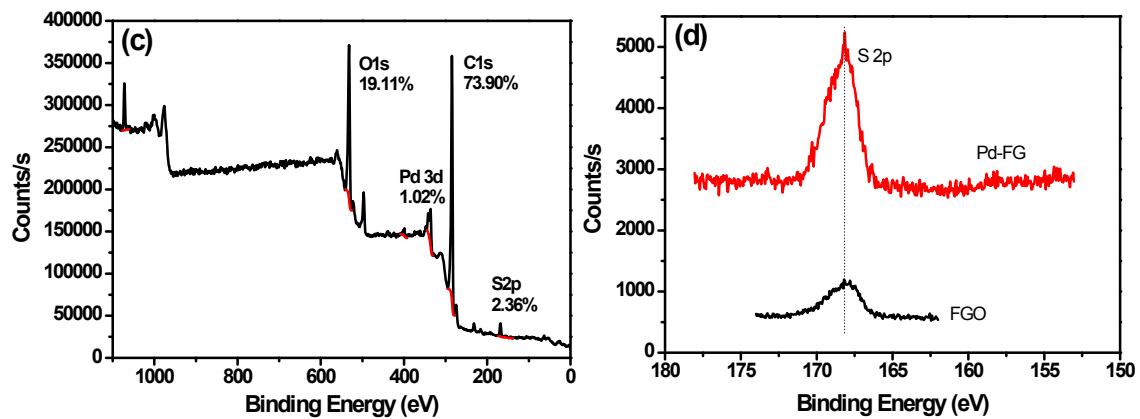


Fig. S4 XPS surveys of (a) GO, (b) FGO, (c) Pd-FG and (d) the sulphur region (S2p) scans of FGO and Pd-FG.

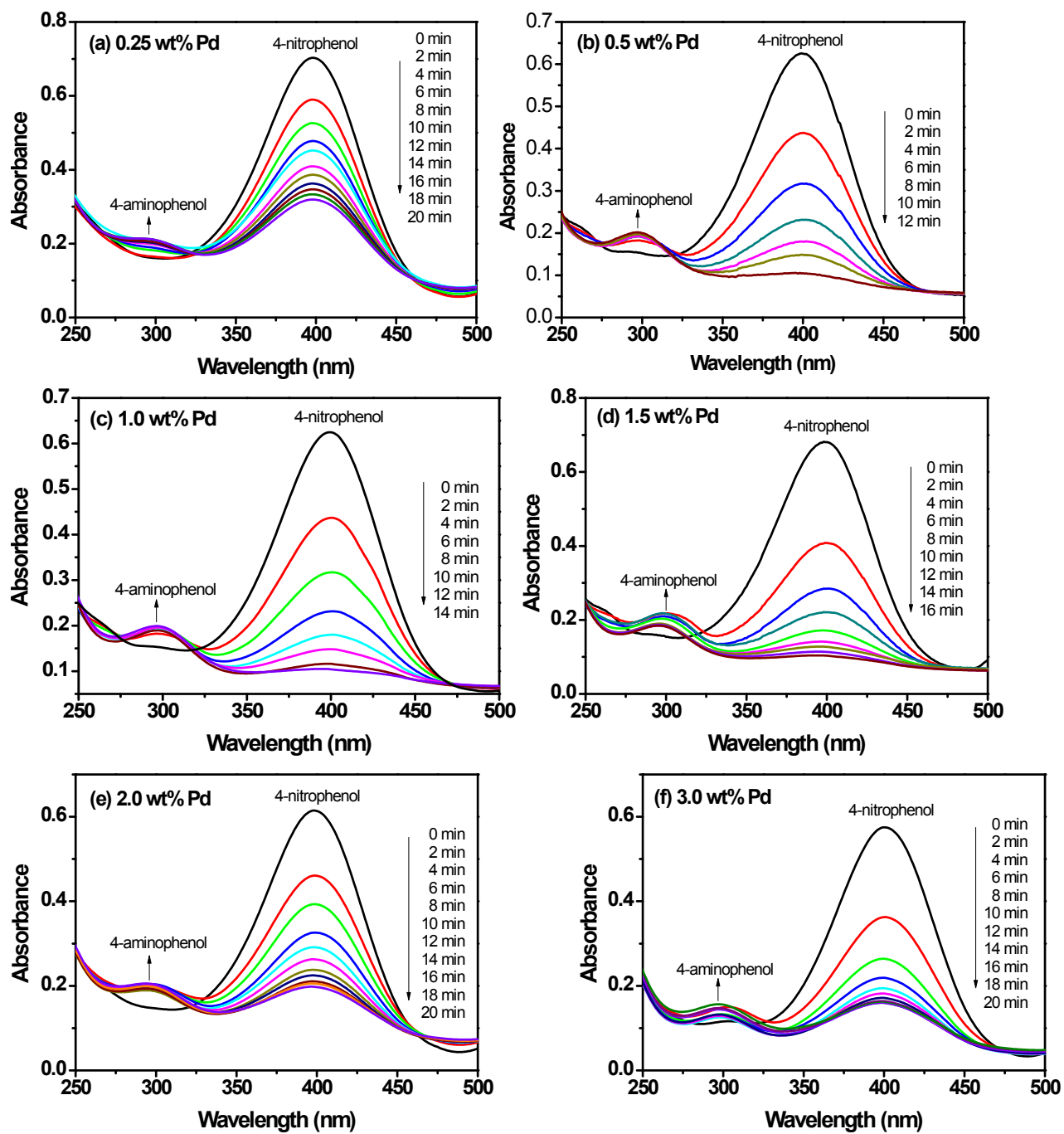


Fig. S5 UV-vis spectra of 0.1 mM 4-nitrophenol with 10 mM NaBH<sub>4</sub> in the presence of different Pd-FG catalysts. (a) 0.25 wt% Pd; (b) 0.5 wt%; (c) 1.0 wt% Pd; (d) 1.5 wt% Pd; (e) 2.0 wt% Pd; (f) 3.0 wt% Pd.

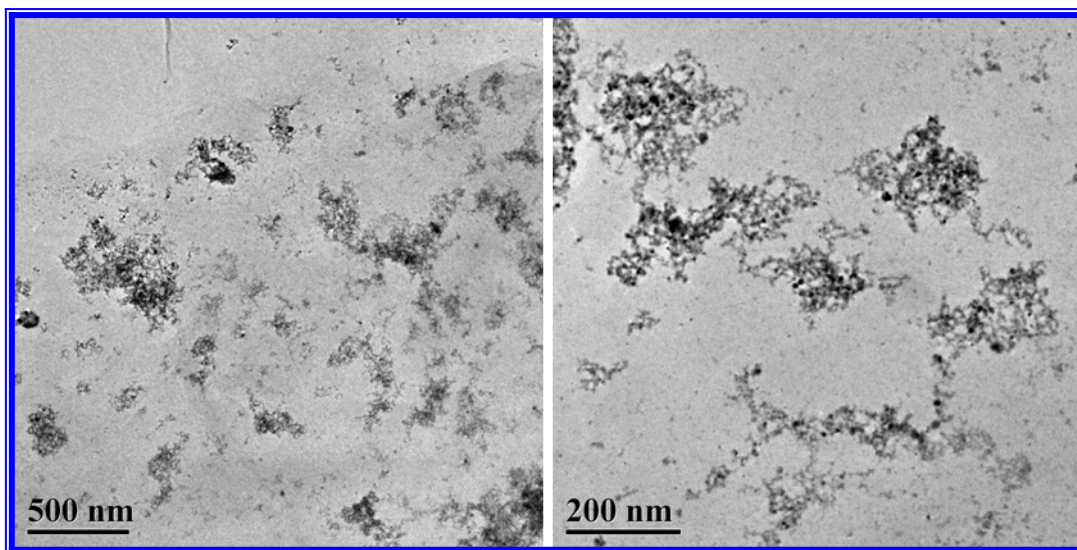


Fig. S6 Low (left) and high (right) magnified Transmission electron micrographs of Pd-FG catalyst cycled for five times.