Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics

Electron-rich free-standing carbon@Au core/shell nanofibers network as highly active and recyclable catalysts for the reduction of 4-nitrophenol

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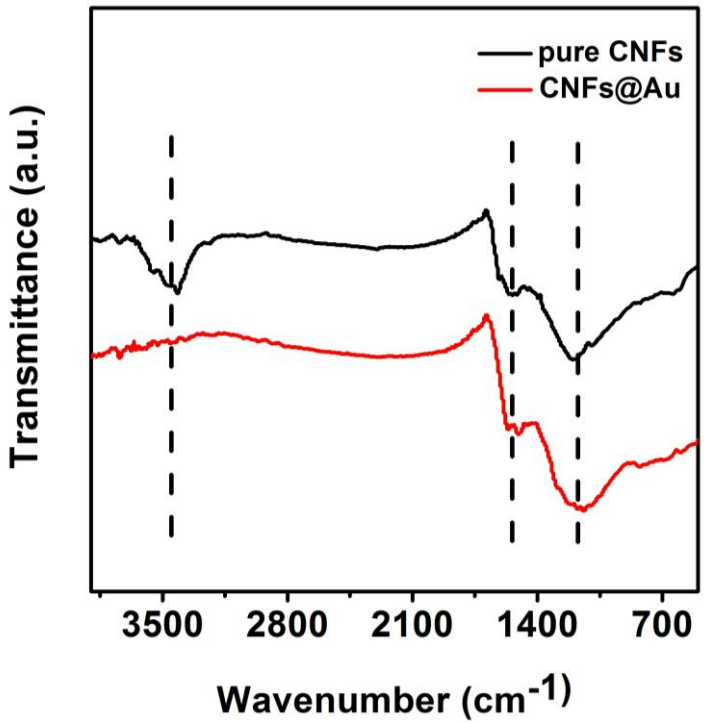

Fig. S1 FT-IR spectra of pure CNFs and CNFs@Au.

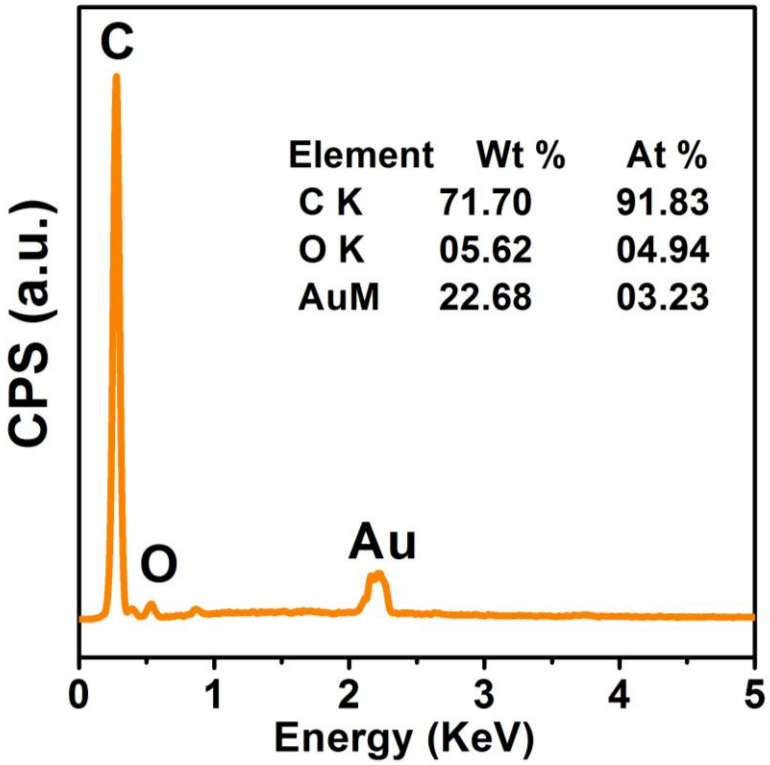

Fig. S2 EDX spectra of CNFs@Au.

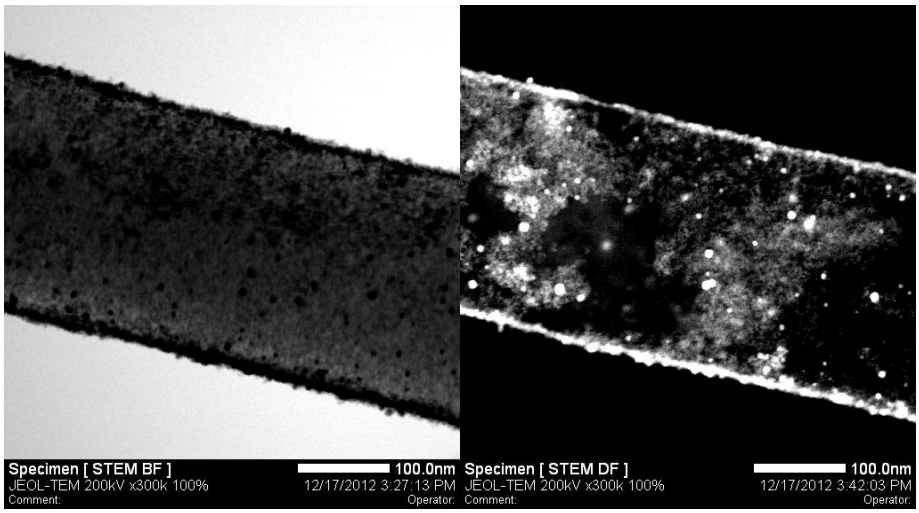

Fig. S3 The STEM image of CNFs@Au in bright-field (A) and dark-field (B).

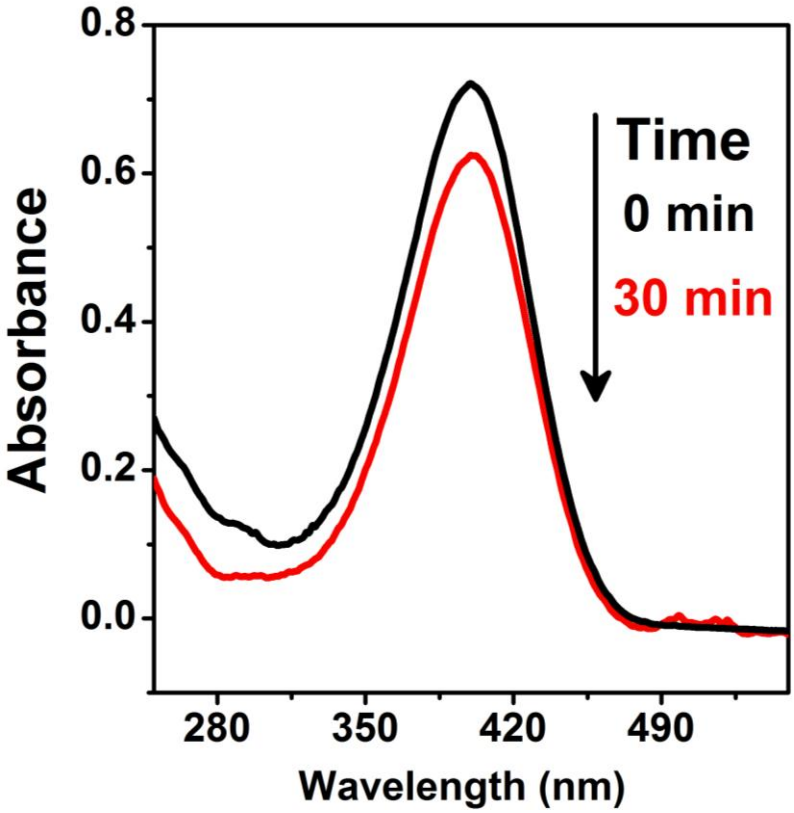

Fig. S4 The UV-Vis absorption spectra of 4-NP in the presence of Sn^{2+} activated CNFs and $NaBH_4$ for 30 min.

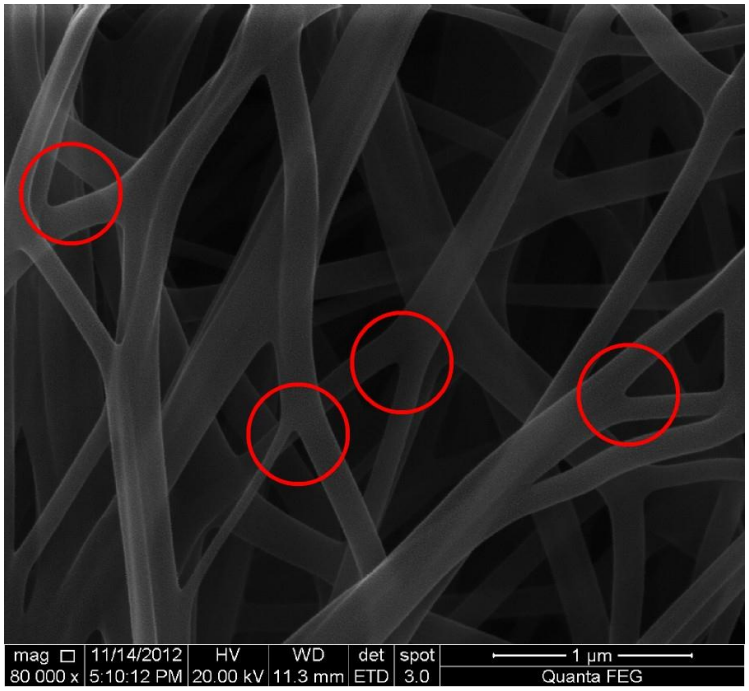

Fig. S5 SEM image of pure CNFs including large cross-linked sites.

Catalyst	Reference	Structure	K_{app} (s^{-1})	k ($s^{-1}g^{-1}$)
CNFs@Au	This work	Core–shell	5.42×10^{-3}	54.2
SiO_2/Au	15	Encapsulated	3.17×10^{-3}	31.7
Au@SiO2	31	Core–shell	3.9×10^{-3}	12
Au-Fe_3O_4	32	Dumbbell	1.1×10^{-2}	28

Table 1 Comparison of the catalytic activities of composite gold catalysts for the reduction of 4-nitrophenol