Environmentally Benign Magnetic Chitosan/Fe₃O₄ Composites as Reductant and Stabilizer for Anchoring Au NPs and Their Catalytic Reduction of 4–nitrophenol

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Fig. S1 (a) and (b) are UV–vis spectra of 4–nitrophenolate ion in distilled water during the reduction reaction in the presence of NaBH₄ and chitosan/NaBH₄ without Au NPs, respectively. The characteristic peak intensity of 4–nitrophenolate ion was unchanged. The results illustrated that NaBH₄ was inert towards the reduction of 4–NP. Additionally, the reduction reaction couldn’t proceed efficiently only in the presence of chitosan/NaBH₄ without any Au NPs.
**Fig. S2** (a) UV–vis spectra measurements of 2.5 wt% Au loading amount as a function of aging time; (b) Plot of the intensity at 520 nm against reaction time. It is clear to see that the characteristic peak at 520 nm increased gradually as a function of aging time. And there is a plateau in the plot of intensity at 520 nm against aging time in **Fig. S2b**, viz. the reduction of Au ions to zerovalent Au nanoparticles at 50° ends around 20h.