

Environmentally Benign Magnetic Chitosan/ Fe_3O_4 Composites as Reductant and Stabilizer for Anchoring Au NPs and Their Catalytic Reduction of 4-nitrophenol

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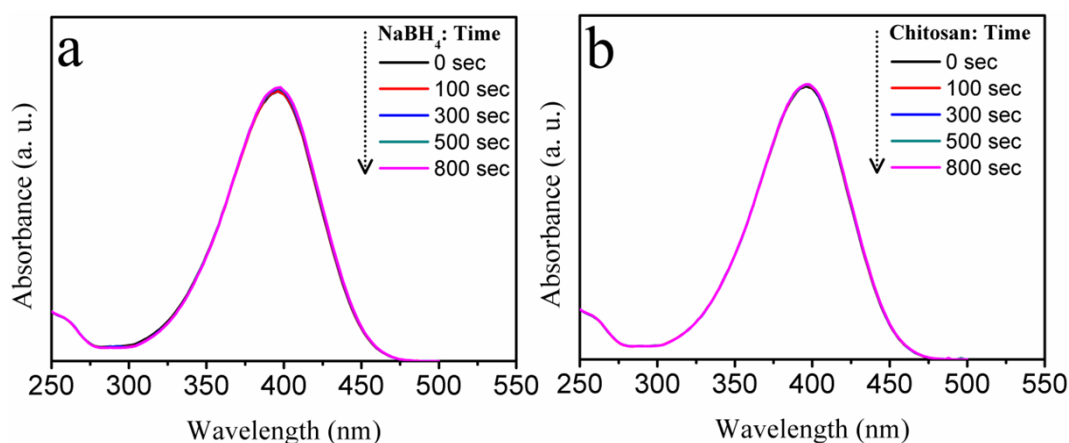


Fig. S1 (a) and (b) are UV-vis spectra of 4-nitrophenolate ion in distilled water during the reduction reaction in the presence of NaBH_4 and chitosan/ NaBH_4 without Au NPs, respectively. The characteristic peak intensity of 4-nitrophenolate ion was unchanged. The results illustrated that NaBH_4 was inert towards the reduction of 4-NP. Additionally, the reduction reaction couldn't proceed efficiently only in the presence of chitosan/ NaBH_4 without any Au NPs.

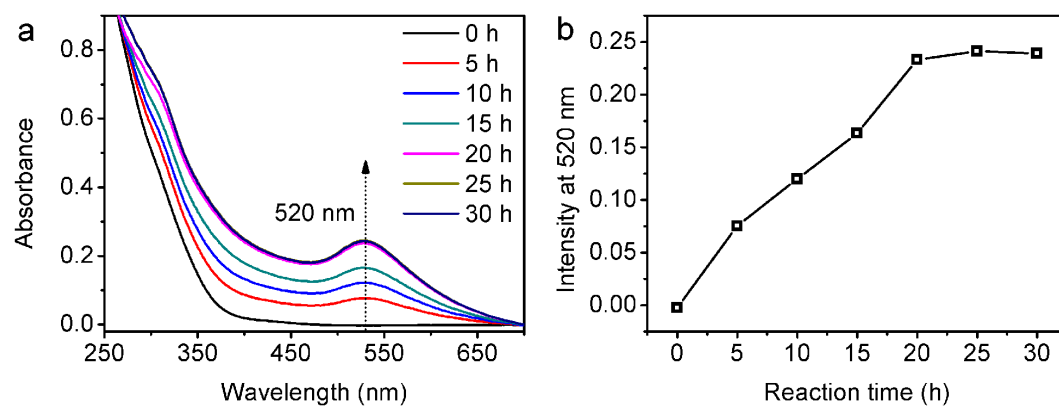


Fig. S2 (a) UV-vis spectra measurements of 2.5 wt% Au loading amount as a function of aging time; (b) Plot of the intensity at 520 nm against reaction time. It is clear to see that the characteristic peak at 520 nm increased gradually as a function of aging time. And there is a plateau in the plot of 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.