Fabrication of γ-MnO_2/α-MnO_2 Hollow Core/Shell Structures and Their Application to Water Treatment

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Supporting Information

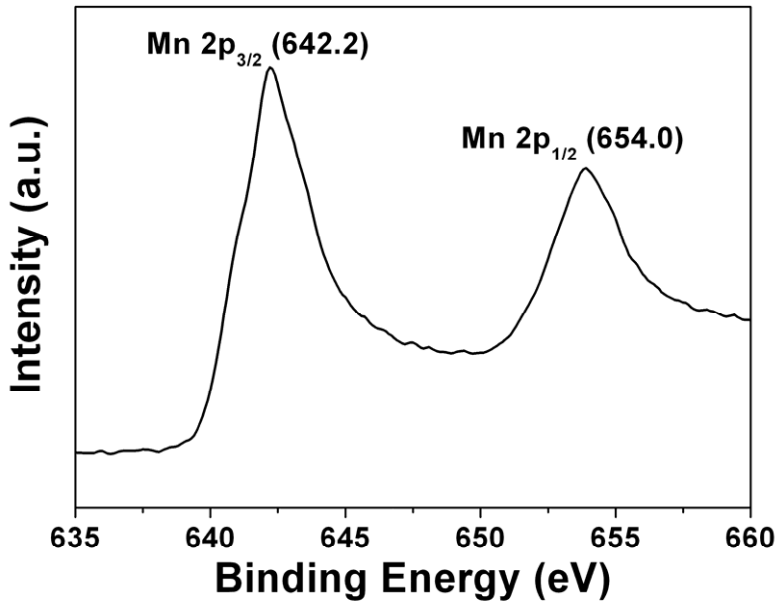

Fig. S1 XPS spectrum for Mn 2p peaks of γ-MnO_2 ellipsoids.

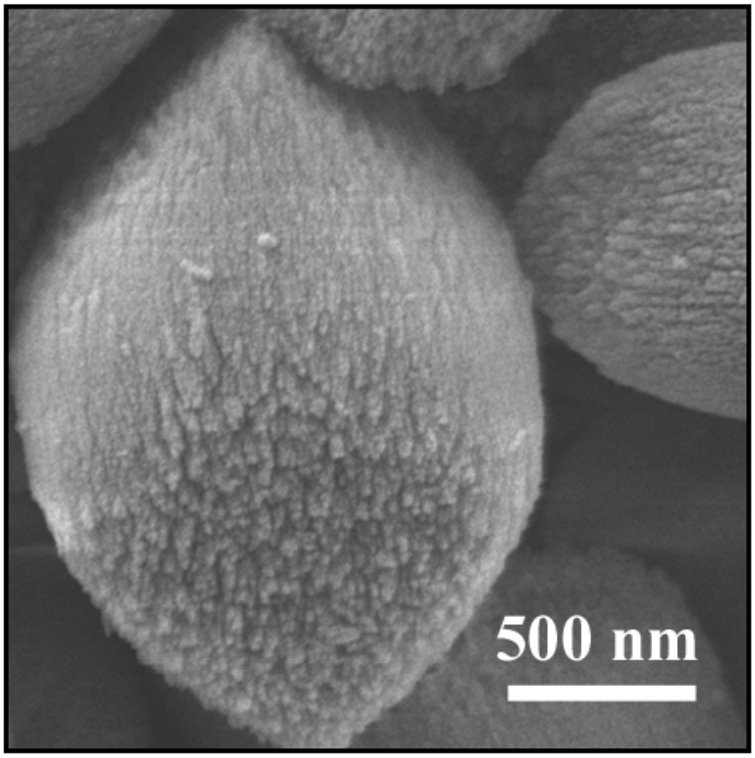

Fig. S2 An enlarged SEM image of a representative ellipsoidal-shaped $MnCO_3$ structure, showing the ellipsoidal-shaped microparticle is assembled by the chain-like structure.

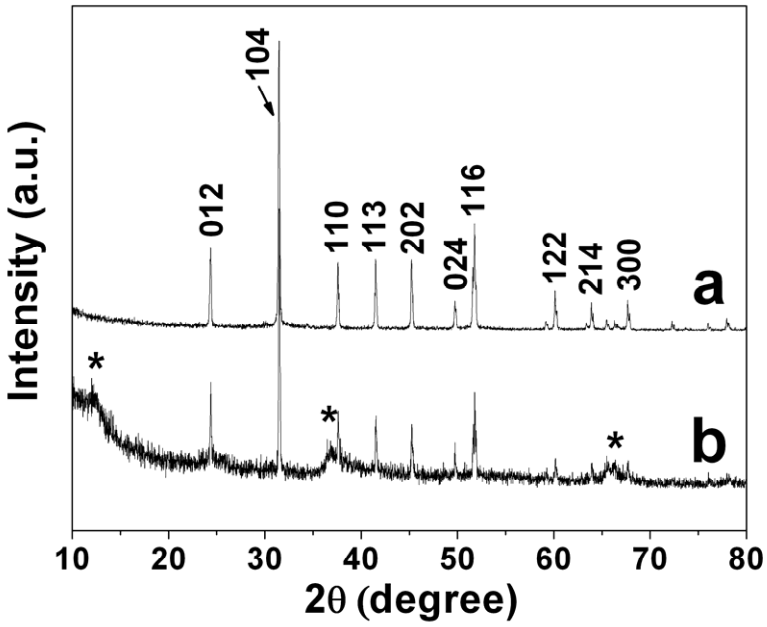

Fig. S3 XRD patterns: (a) $MnCO_3$ ellipsoids shown in Fig. 3a; (b) the δ-MnO_2 containing embedded $MnCO_3$ before thermal treatment at 400 °C. The peaks marked with (*) are corresponding to the δ-MnO_2.

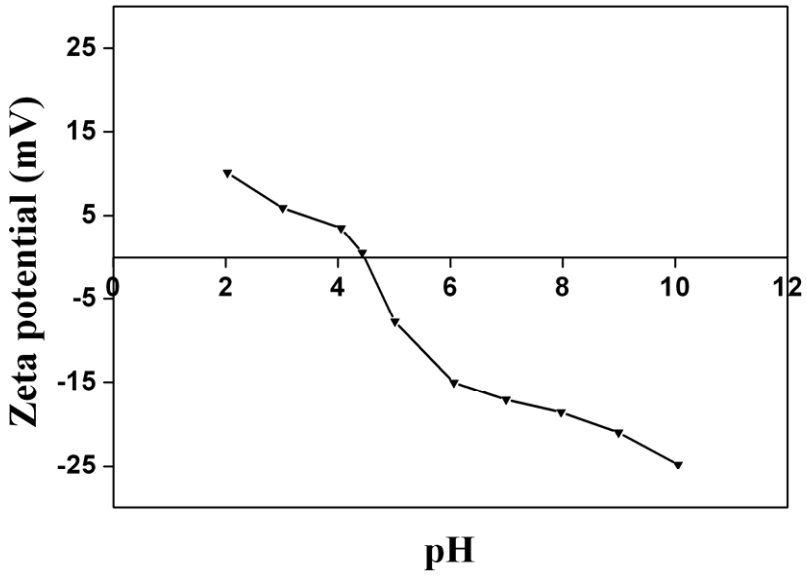

Fig. S4 Zeta potential analysis of γ-MnO_2/α-MnO_2 ellipsoids as a function of pH.

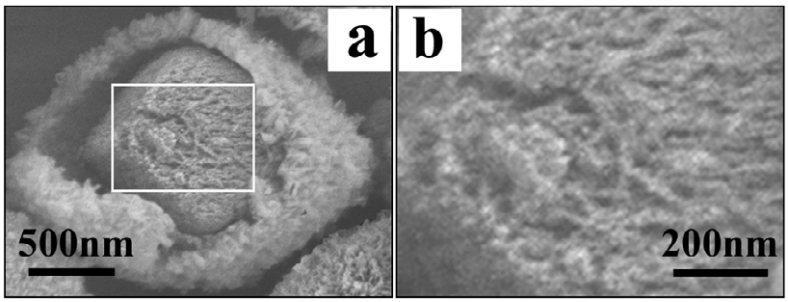

Fig. S5 (a) SEM image of the γ-MnO_2/α-MnO_2 core/shell structure; (b) Magnified SEM image recording form the boxed region in (a).

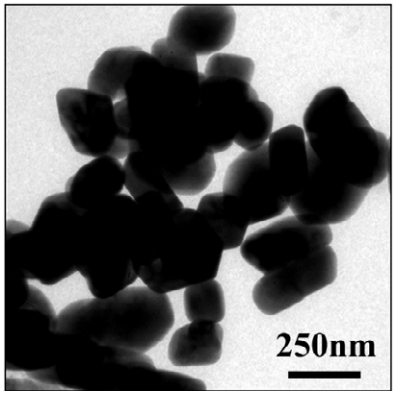

Fig. S6 TEM image of the MnO_2 nanoparticles.

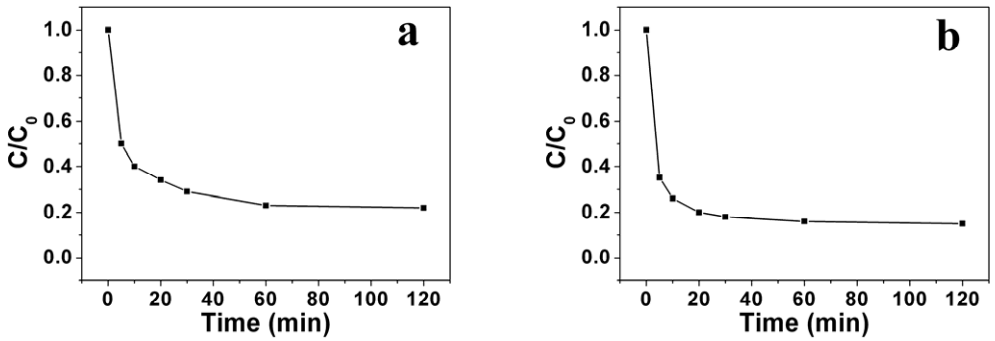

Fig. S7 (a) Adsorption rate of Congo red on the as-prepared MnO_2; (b) adsorption rate of Cd^{2+} on the as-prepared MnO_2.