Supplementary Information

Controllable Synthesis of Ni Nanotube Arrays and Their Structure-Dependent Catalytic Activity toward Dye Degradation

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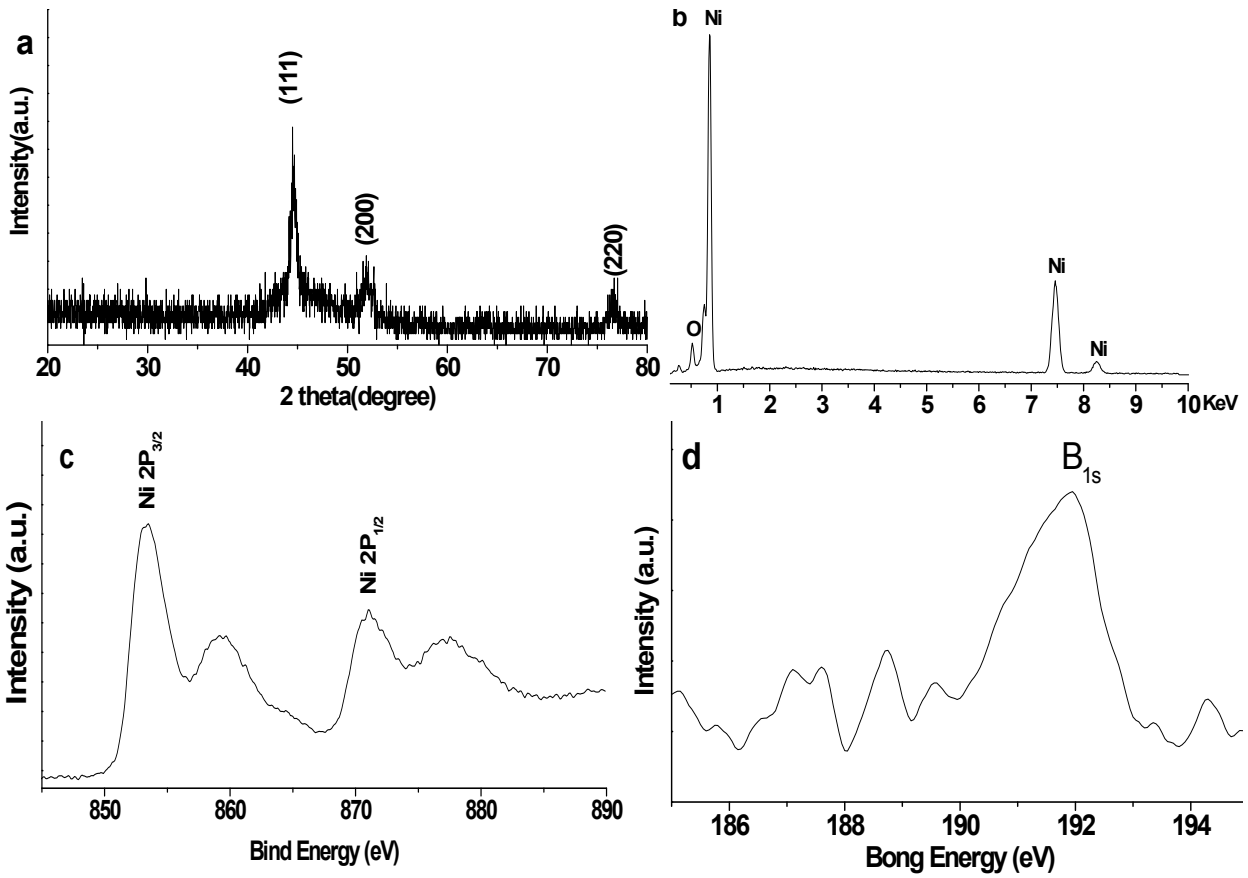

Fig. S1 XRD, EDS and XPS spectra of the nanotubes (280 nm).

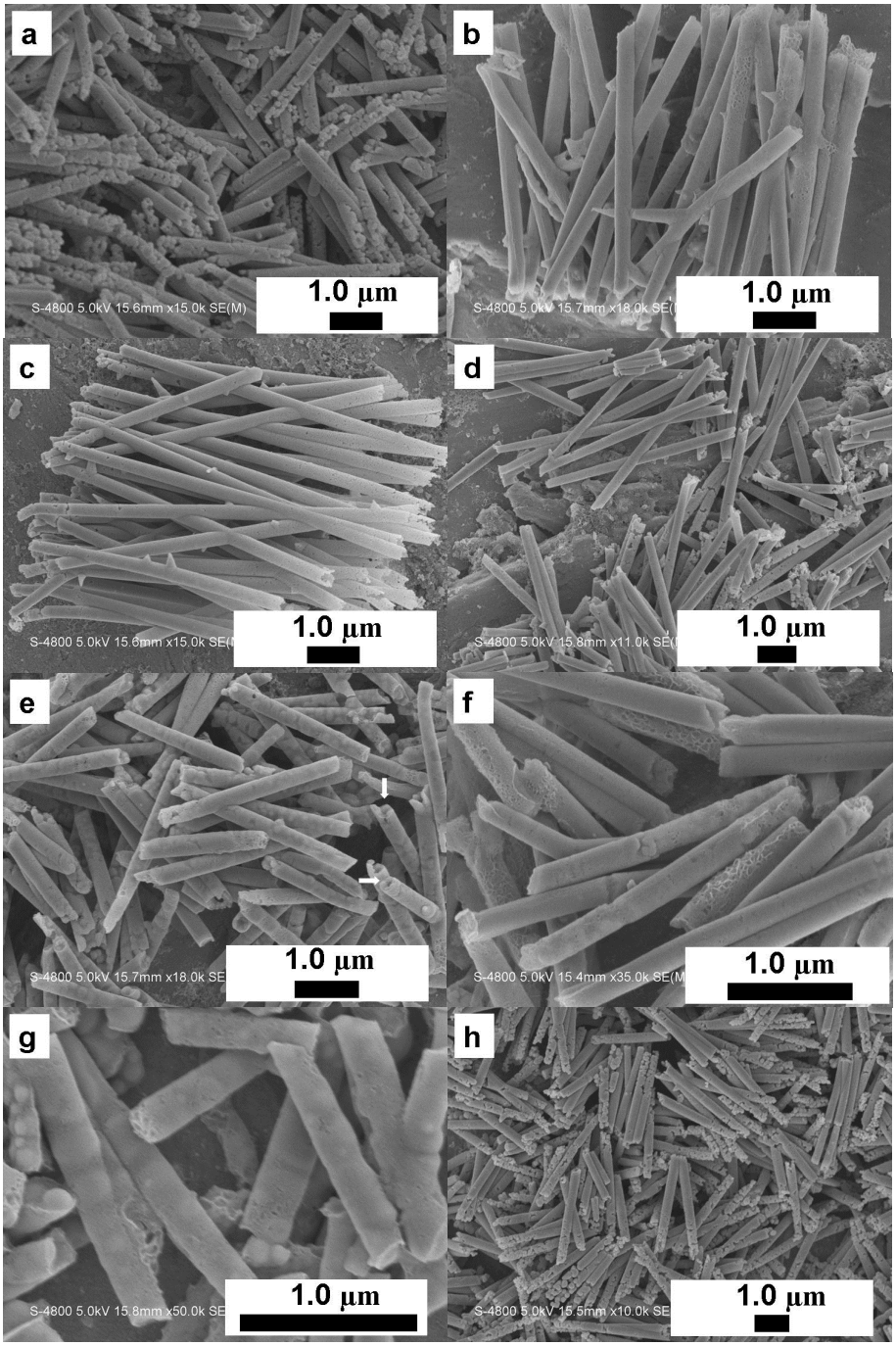

Fig. S2 SEM of the Ni nanotubes and nanorods at different concentrations (the template pore diameter of PC template is 0.2 µm, reaction time is 150 s). a, No. 1. b-h, No. 3-9 (Tab. 2).

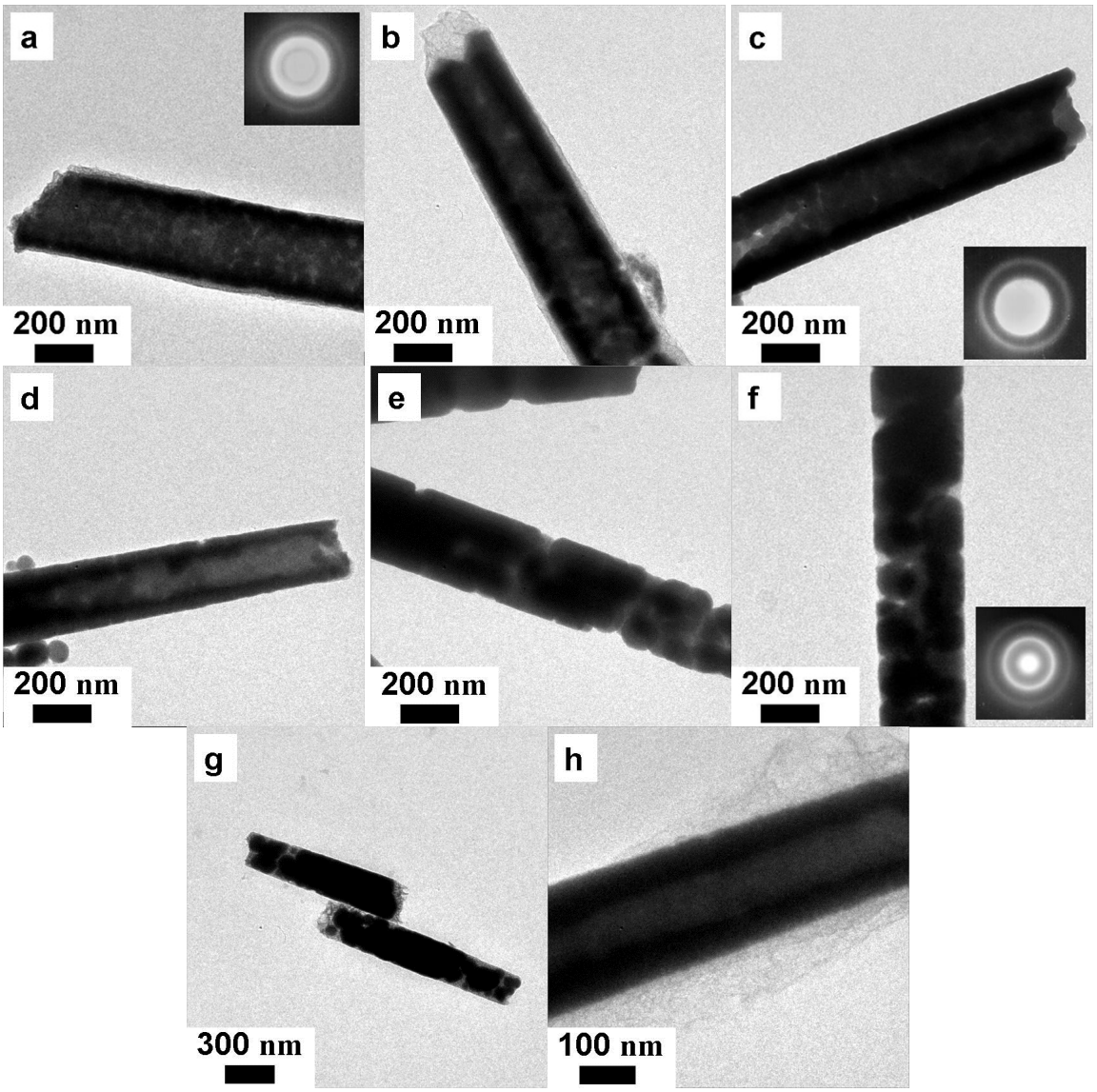

Fig. S3 TEM of the Ni nanotubes and nanorods at different concentrations (the template pore diameter of PC template is 5 0.2 μm, reaction time is 150 s). a, No. 1. b-h, No. 3-9 (Tab. 2). Inserts are SAED patterns.

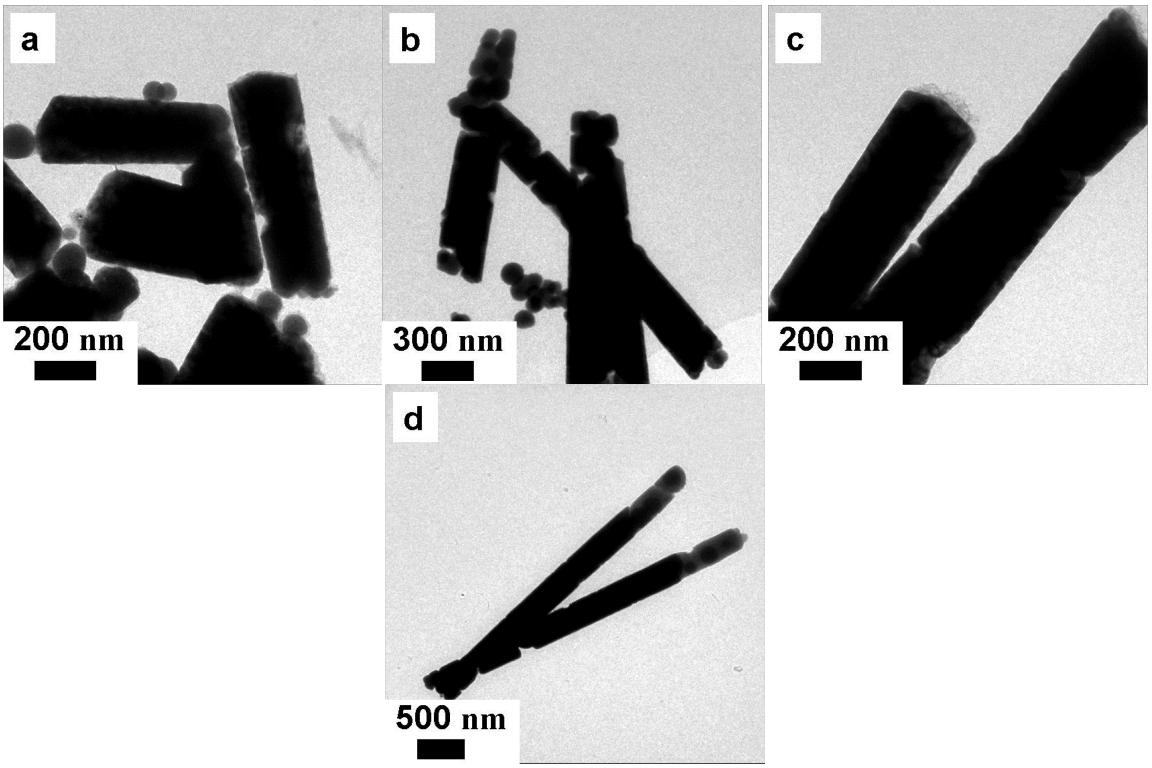

Fig. S4 TEM of the Ni nanorods at different reaction time with PC membrane (template pore diameter is 0.2 μm, C ($NaBH_4$) =0.05M, C (Ni^{2+}) =0.10M): (a) 1 min, (b) 5 min, (c) 10 min, and (d) 30 min.

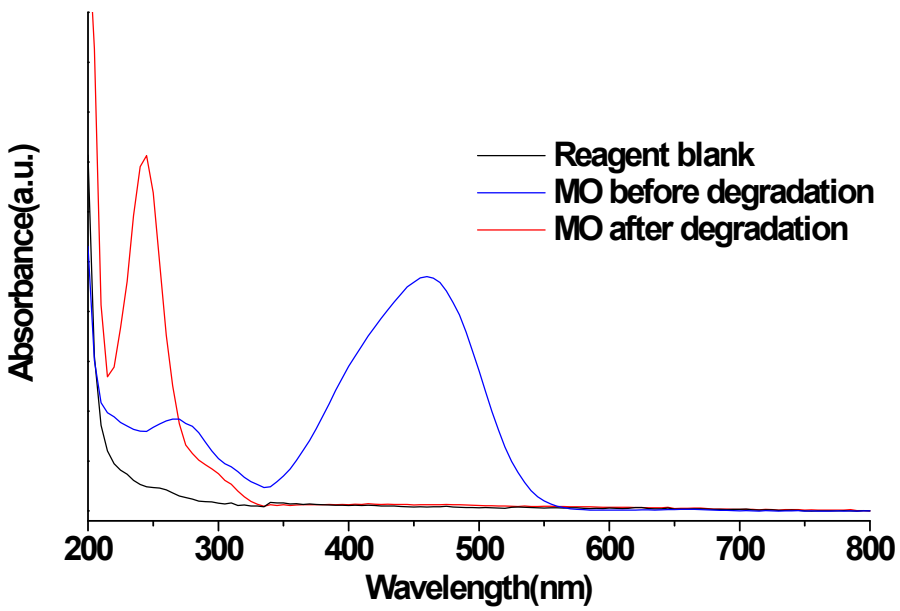

Fig. S5 UV-vis absorption spectra of MO degradation by $NaBH_4$ using Ni nanotubes as catalyst at room temperature.

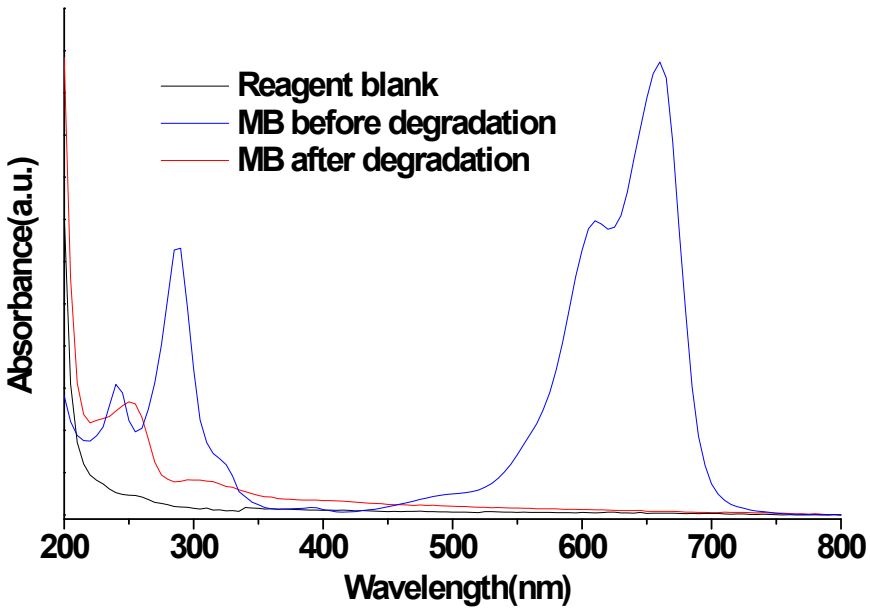

Fig. S6 UV-vis absorption spectra of MB degradation by $NaBH_4$ using Ni nanotubes as catalyst at room temperature.

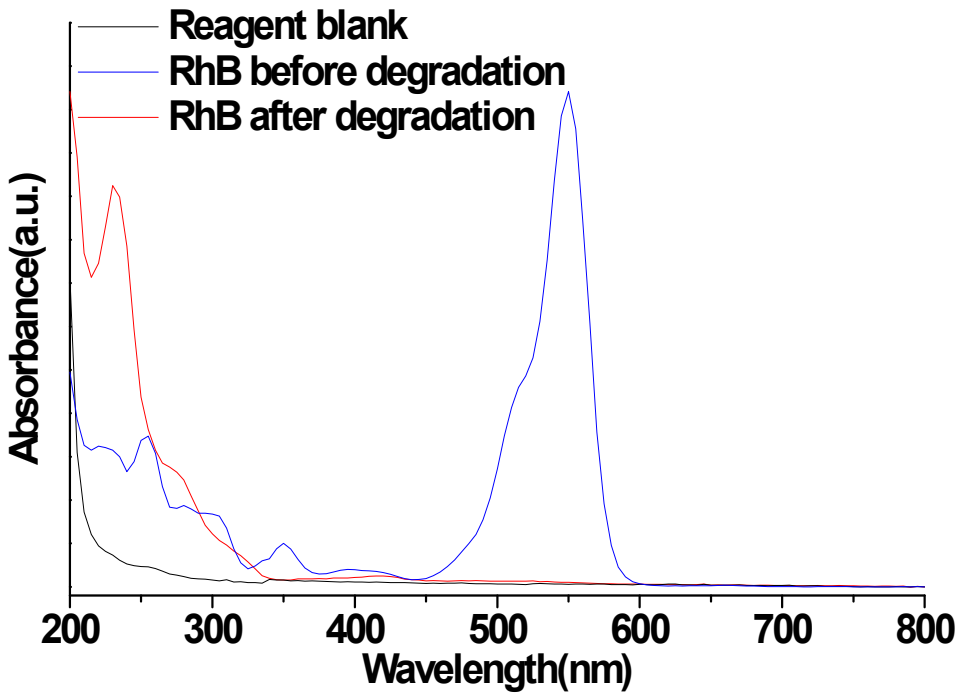

Fig. S7 UV-vis absorption spectra of RhB degradation by $NaBH_4$ using Ni nanotubes as catalyst at room temperature.

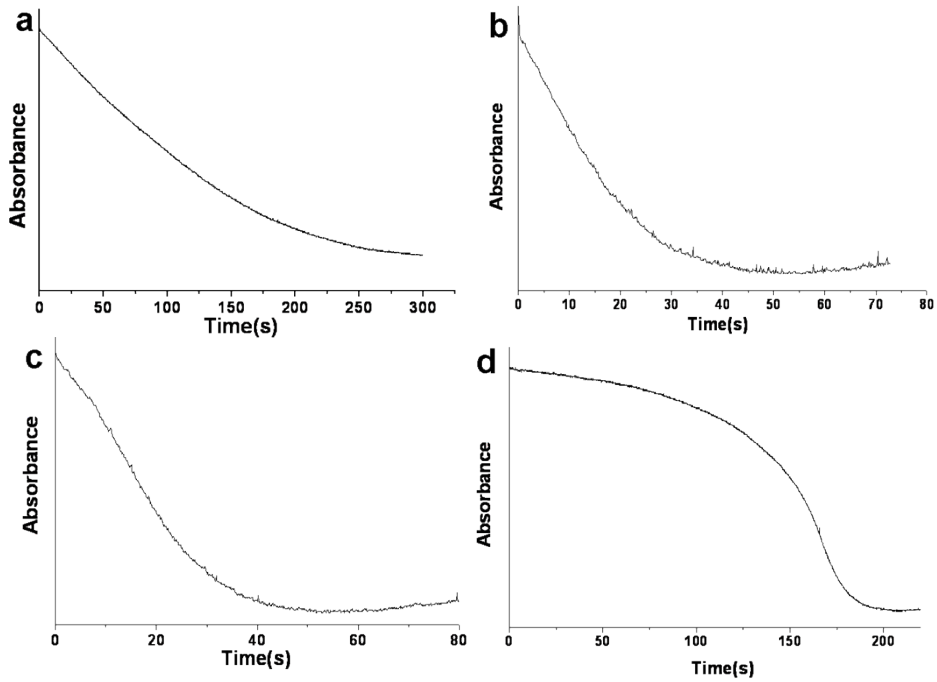

Fig. S8 The typical time dependence of the degradation for MO (at 460 nm) with the Ni nanotubes obtained in PC membrane with different template pore diameter: a, 2.0 μm. b, 0.2 μm. c, 0.05 μm. d, 0.015 μm.

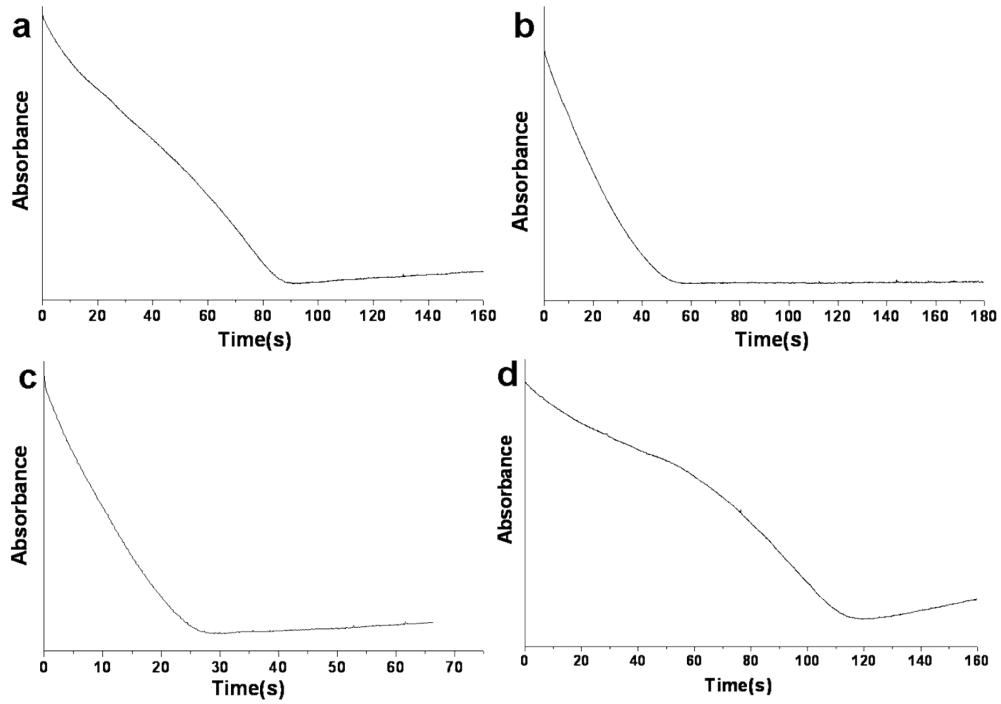

Fig. S9 The typical time dependence of the degradation for MB (at 660 nm) with the Ni nanotubes obtained in PC membrane with different template pore diameter: a, 2.0 μm. b, 0.2 μm. c, 0.05 μm. d, 0.015 μm.

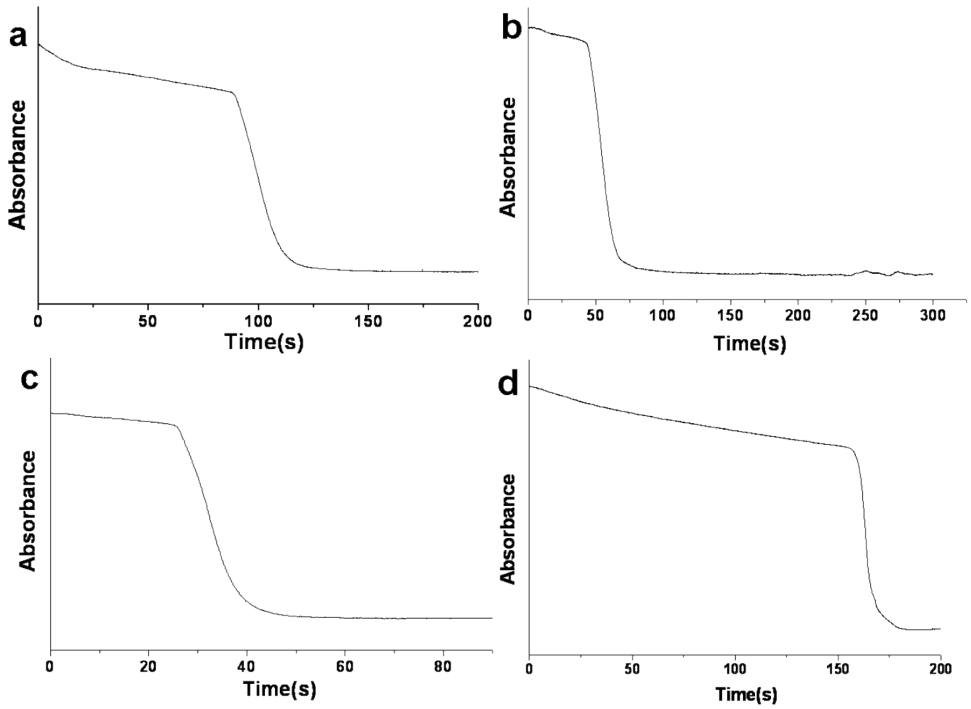

Fig. S10 The typical time dependence of the degradation for RhB (at 550 nm) with the Ni nanotubes obtained in PC membrane with different template pore diameter: a, 2.0 μm. b, 0.2 μm. c, 0.05 μm. d, 0.015 μm.