Supporting Information

Ni^{2+}/Surfactant–assisted route to porous α-Fe_{2}O_{3} nanoarchitectures

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Fig. S1

Fig. S1. SEM images of the as-prepared products at different reaction temperatures for 24 h. (a) 120 °C; (b) 140 °C; (c) 160 °C; (d) 180 °C.
The XRD patterns of the samples prepared at different reaction temperatures are presented in Fig. S2. The patterns of the products obtained at 120 °C is well indexed to FeO(OH) (JCPDS No. 75-1594). When the reaction temperature ranges from 140 °C to 180 °C, all peaks of the XRD patterns are matched with the phase of α-Fe$_2$O$_3$ (JCPDS No. 33-0664). It is observed that with the increase of temperature the relative intensity of the peaks would be great enhancement.
Fig. S3

(a) CoCl$_2$; (b) ZnCl$_2$; (c) CuCl$_2$; (d) NaCl.
Fig. S4. XRD patterns of the as-prepared products at 200 °C with different reaction time. (a) 1 h; (b) 3 h; (c) 4 h; (d) 48 h; (e) 72h.

Fig. S4. shows the corresponding XRD patterns of the time-dependent products, which clearly shows that the phases of the products change with the reaction time. The XRD patterns of the products obtained within 1 h is well indexed to iron oxide hydroxide chloride (JCPDS No. 80-1770). When the reaction time was prolonged to 3 h or longer, all peaks of the XRD patterns are matched with the phase of a-Fe₂O₃ (JCPDS No. 33-0664).