Supporting Information

Highly Ordered Ferromagnetic Mesoporous Materials: Thermal Phase Transformation Pathway and Quantitative Determination

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Figure S1. Wide angle XRD patterns of ordered ferromagnetic mesoporous materials as a function of molar concentration of initial ferrous ion and their JCPDS reference at various oxidation temperature.(a-d; (a) 25 ℃ (PDF no. 71-0917 as iron chloride tetrahydrate, $FeCl_2 \cdot 4(H_2O)$), (b) 80℃ (PDF no. 25-1040 as Rokuhnite, $FeCl_2 \cdot 2(H_2O)$), (c) 300℃ (PDF no. 72-0619 as Feroxychloride, FeOCl), (d) 450℃ (PDF no. 87-1166 as Hematite, Fe_2O_3), and (e) XRD patterns of 2.5M FeO-containing ordered ferromagnetic mesoporous materials as a function of oxidation temperature.

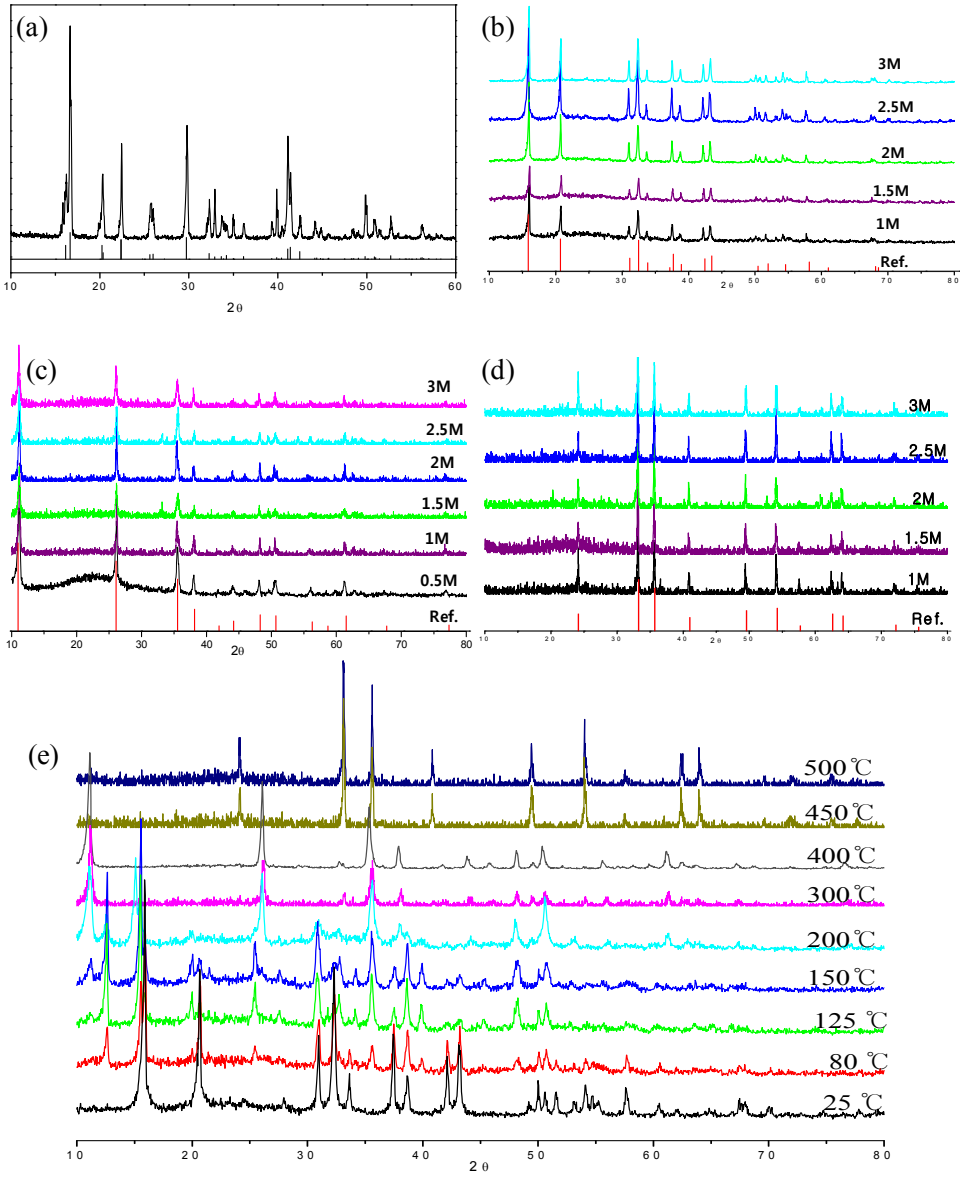

Figure S2. (a) Guinier plots from small angle XRD patterns, and (b) nitrogen adsorbed BET isotherms of ordered ferromagnetic mesoporous materials as a function of oxidation temperature.

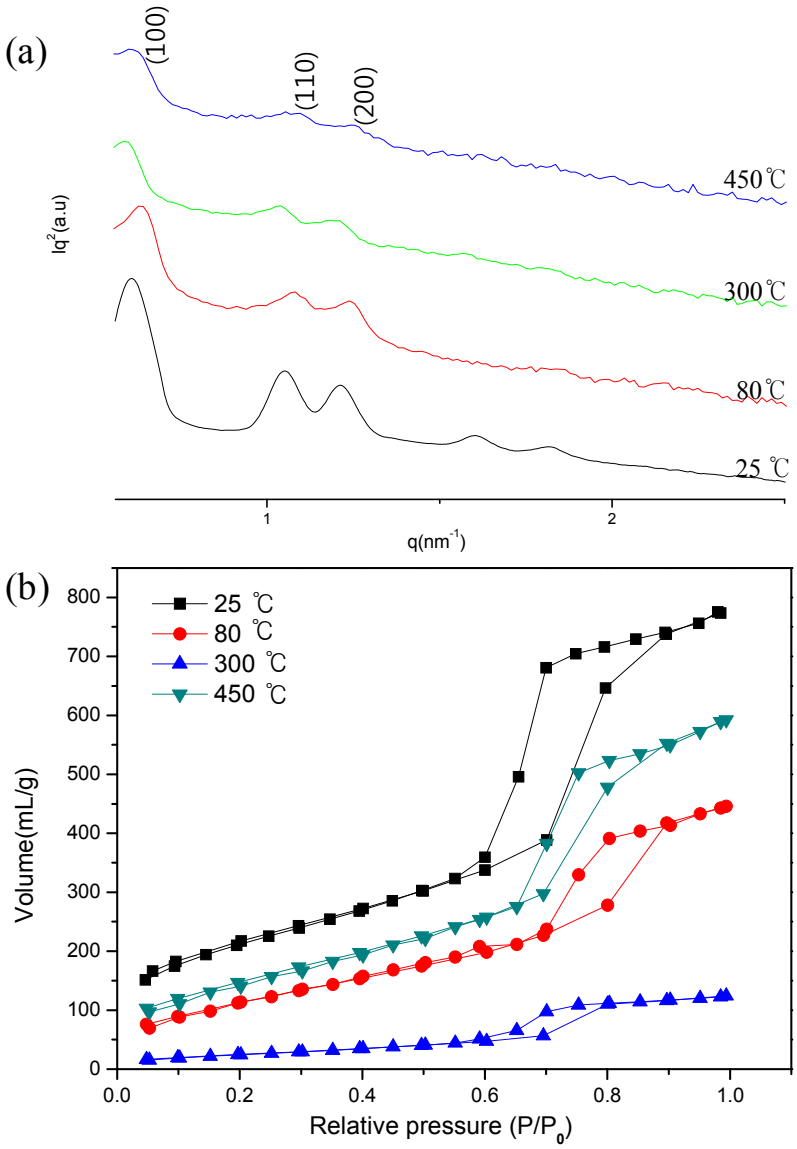

Figure S3. Differential scanning calorimeter (DSC) data of ordered ferromagnetic mesoporous materials as the function of molar concentration of initial ferrous ions.

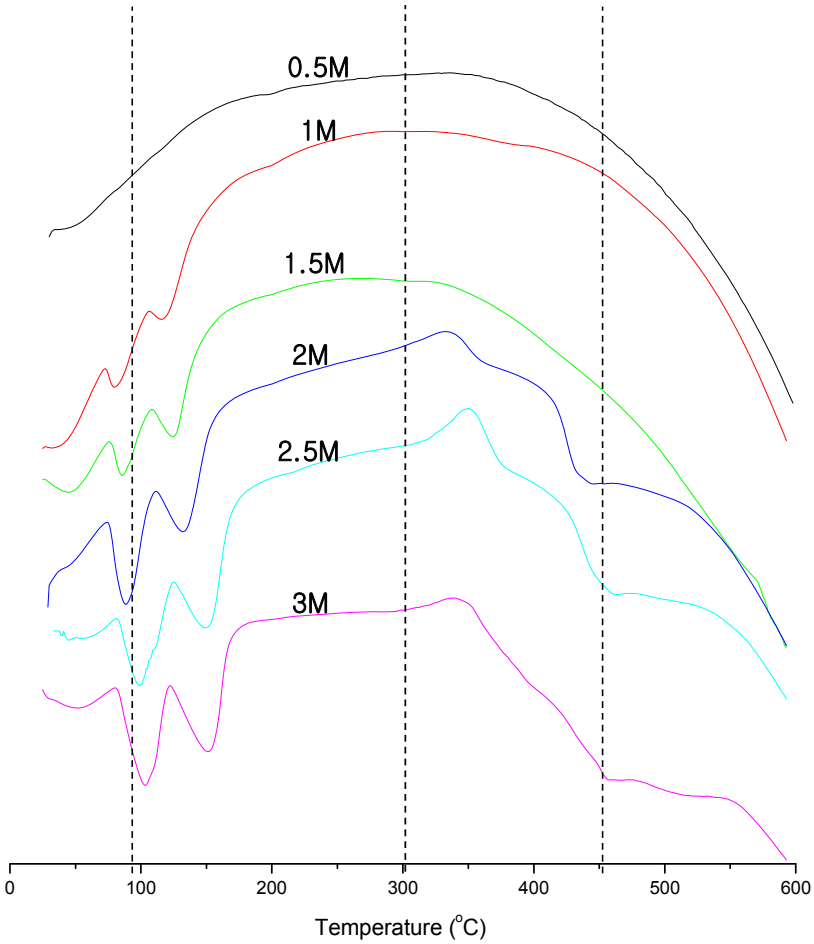

Figure S4. Solid-state ^{29} Si-NMR spectra of ordered ferromagnetic mesoporous materials as a function of oxidation temperature.

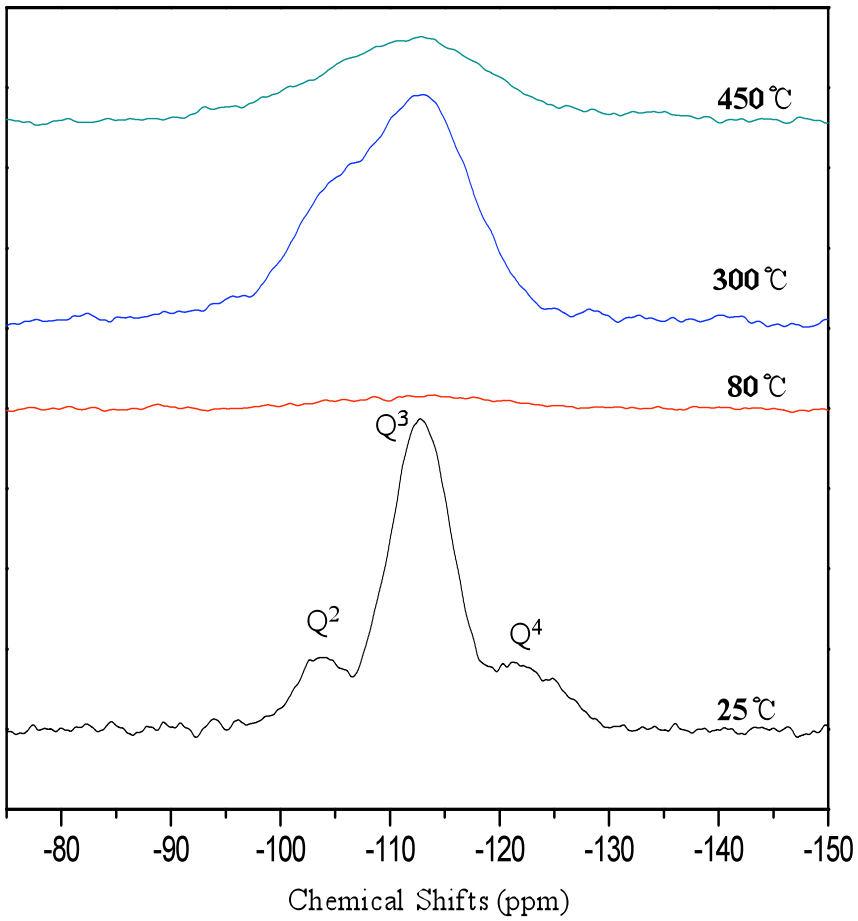

Figure S5. FT-IR spectra by attenuated total reflection (ATR) method of ordered ferromagnetic mesoporous materials as a function of oxidation temperature.