Supporting Information

Morphology controlled synthesis of large mordenite crystals

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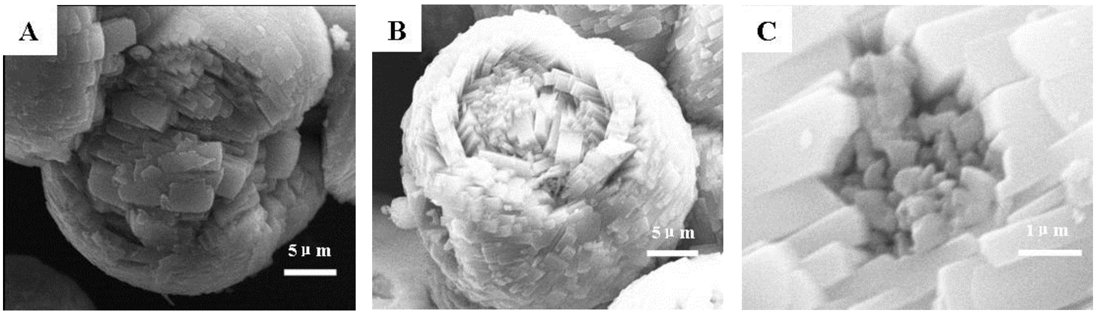

Figure S1 SEM images of the internal structure of the MOR microsphere aggregates obtained with the crystallization time of 4 d and crystallization temperature of 443 K by using the gel composition of $15SiO_2/8Na_2O/900H_2O/3.5TEAOH/1Al_2O_3$.

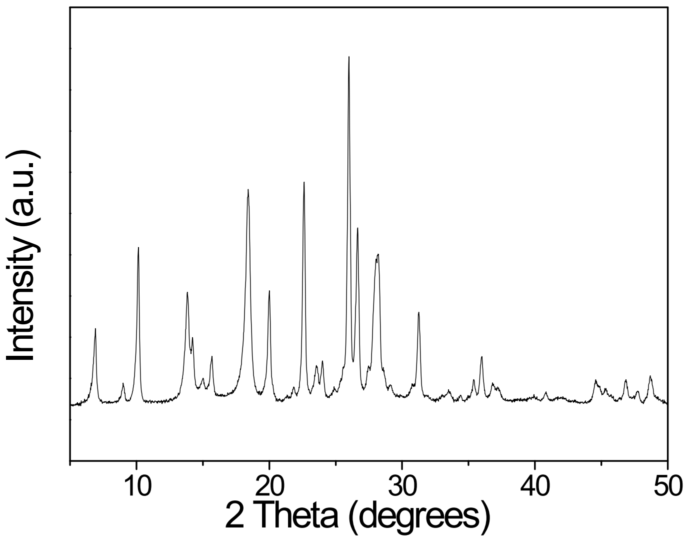

Figure S2 XRD pattern of as-calcined MOR sample obtained by base-hydrolysis of TEOS.

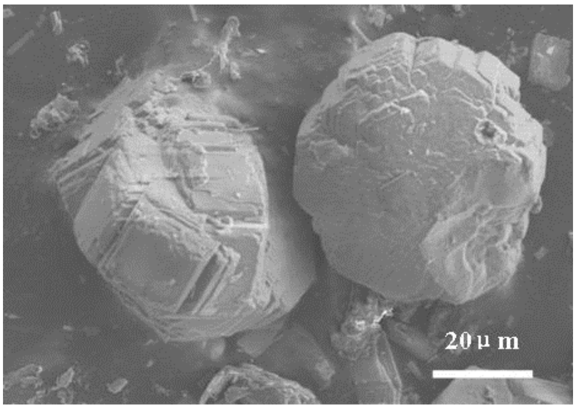

Figure S3 SEM image of the as-calcined MOR sample obtained by base-hydrolysis of TEOS.

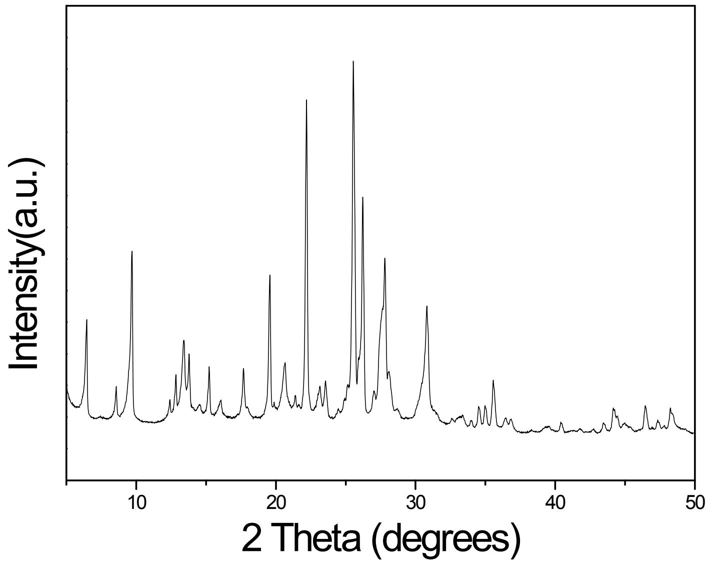

Figure S4 XRD pattern of as-calcined sample obtained with the crystallization time of 4 d and crystallization temperature of 443 K by using the gel composition of $15SiO_2/9Na_2O/900H_2O/3.5TEAOH/1Al_2O_3$.

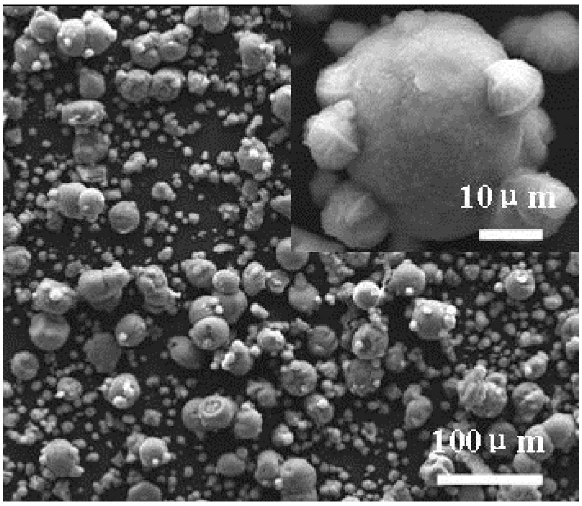

Figure S5 SEM image of as-calcined sample obtained with the crystallization time of 4 d and crystallization temperature of 443 K by using the gel composition of $15SiO_2/9Na_2O/900H_2O/3.5TEAOH/1Al_2O_3$.

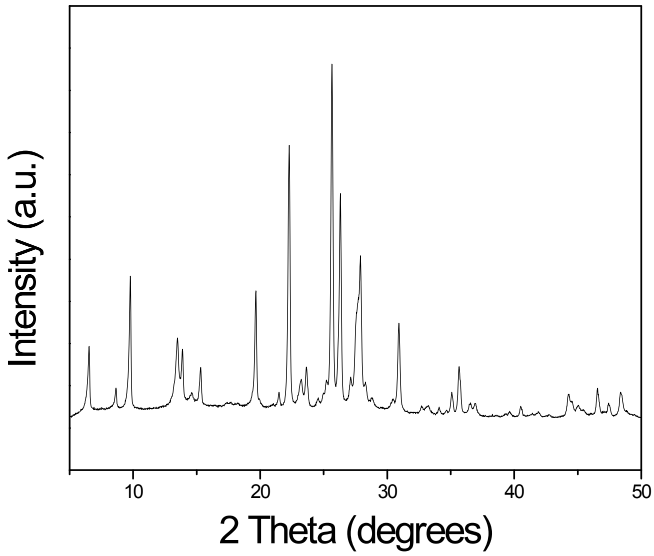

Figure S6 XRD pattern of the as-calcined sample obtained with the crystallization time of 9 d and crystallization temperature of 443 K with the gel composition of $15SiO_2/8Na_2O/900H_2O/3.5TEAOH/1Al_2O_3$.

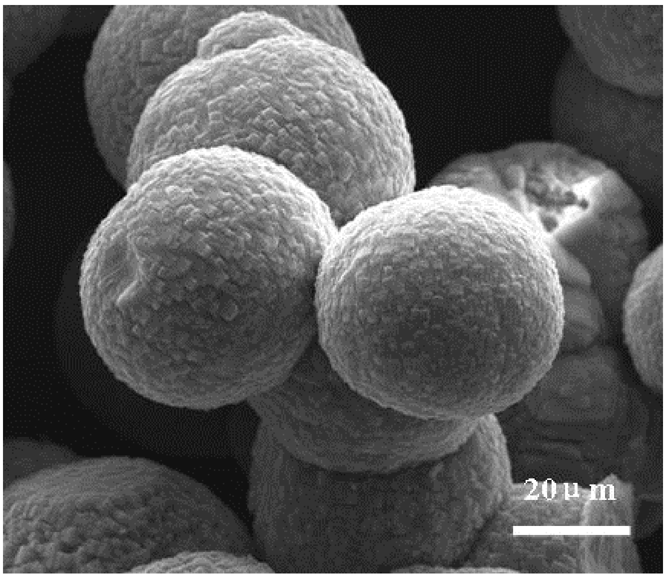

Figure S7 SEM image of the as-calcined sample obtained with the crystallization time of 9 d and crystallization temperature of 443 K with the gel composition of $15SiO_2/8.0Na_2O/900H_2O/3.5TEAOH/1Al_2O_3$.

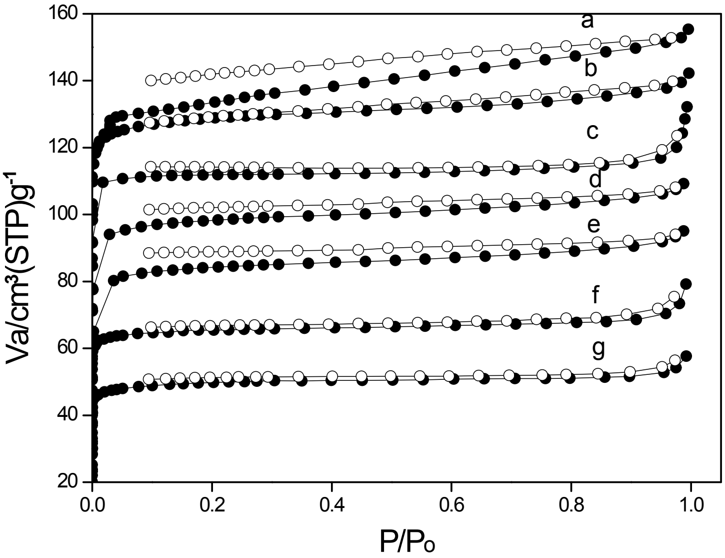

Figure S8 N_2 sorption isotherms of selected as-calcined samples synthesized with TEAOH (a: Entry 1 and b: Entry 8) and all the as-calcined samples synthesized without using TEAOH (c: Entry 12; d: Entry 13; e: Entry 14; f: Entry 15; g: Entry 16). The adsorption isotherms for samples a, b, c, d, e, f and g are shifted by 18, 10, 29, 11, 0, -10 and -21 $cm^3 g^{-1}$. The filled circles indicate adsorption and the hollow circles indicate desorption.

Table S1 Surface area and pore volume of the as-calcined samples in Figure S8.

Sample	Surface area ($m^2 g^{-1}$)	Pore volume ($cm^3 g^{-1}$)
a: Entry 1	405	0.21
b: Entry 8	387	0.20
c: Entry 12	338	0.18
d: Entry 13	267	0.15
e: Entry 14	258	0.15
f: Entry 15	248	0.14
g: Entry 16	232	0.12