Supporting Information for:

Synthesis of Carboxylic Group Functionalized Mesoporous Silicas (CFMSs) with Various Structures

Lu Han,[a] Yasuhiro Sakamoto,*[b] Osamu Terasaki,[b] Yongsheng Li[a] and Shunai Che*[a]

Supporting Information 1:

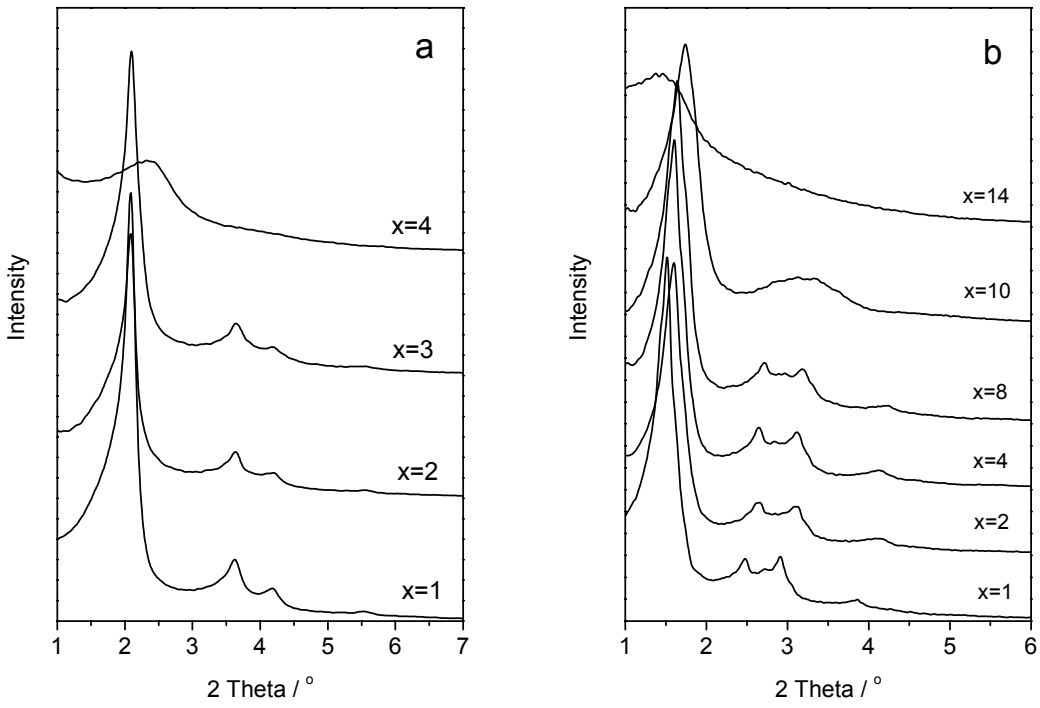

Fig. S1 XRD patterns of extracted CFMSs by using CTAB and $C_{18\text{-}3\text{-}1}$ as template. The chemical molar composition of the reaction mixture was as follows. (a) CTAB:CES:TEOS:H_2O 1:x:7:2000, (b)$C_{18\text{-}3\text{-}1}$:CES:TEOS:H_2O 1:x:15:2000.

Supporting Information 2:

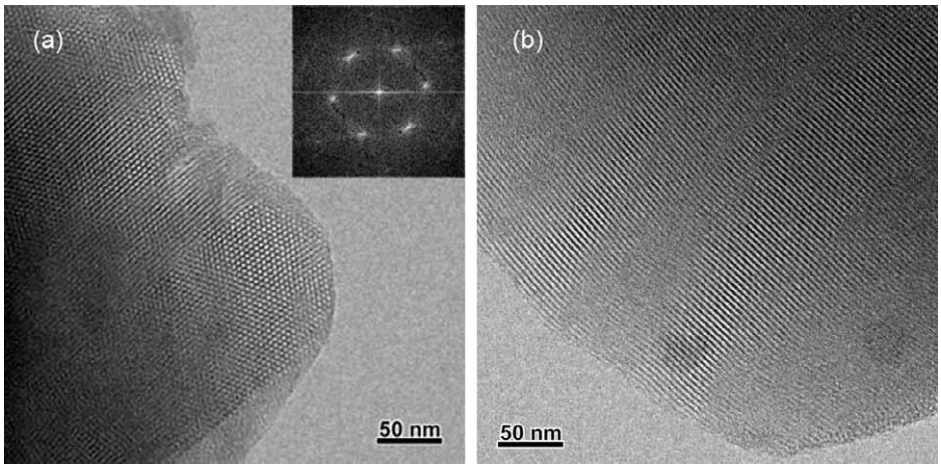

Fig. S2 HRTEM images and Fourier diffractograms of the extracted CFMSs by using CTAB as template, the molar composition of this sample was CTAB:CES:TEOS:H_2O 1:1:7:2000 (space group *p6mm*)

Supporting Information 3:

Fig. S3 Nitrogen adsorption-desorption isotherm and corresponding pore size distribution curves of the extracted samples shown in Fig. S1a

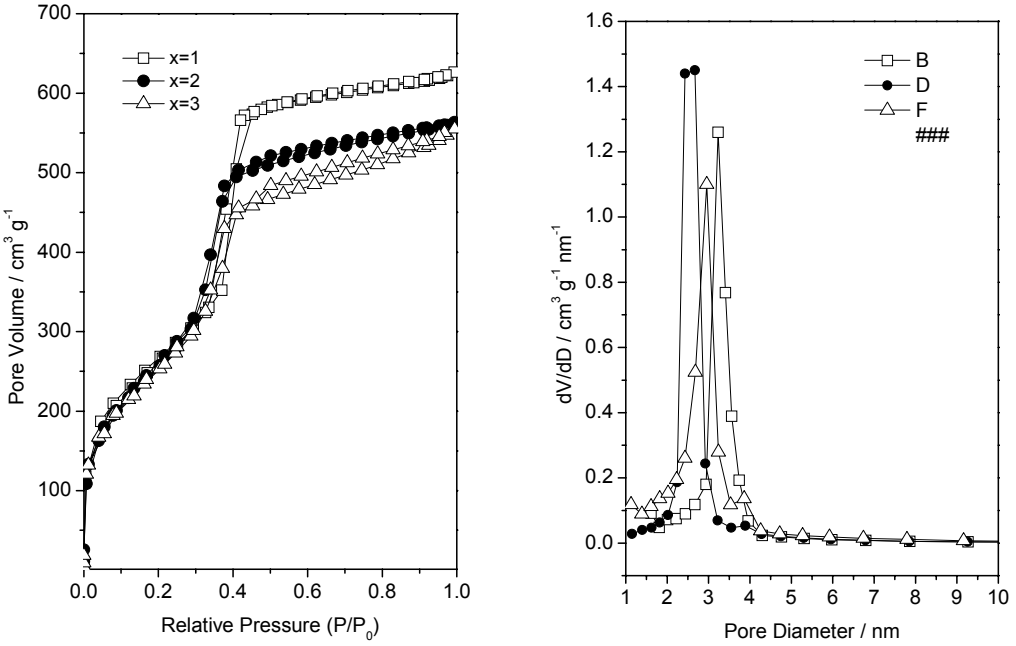

Table S1. Surface area, pore volume and pore diameter data.

CES/CTAB (mol)	Surface Area (m^2 g^{-1})	Pore Volume (cm^3 g^{-1})	Pore Diameter (nm)
x=1	973.98	1.08	3.23
x=2	1014.82	1.03	2.92
x=3	976.88	0.99	2.96

Supporting Information 4:

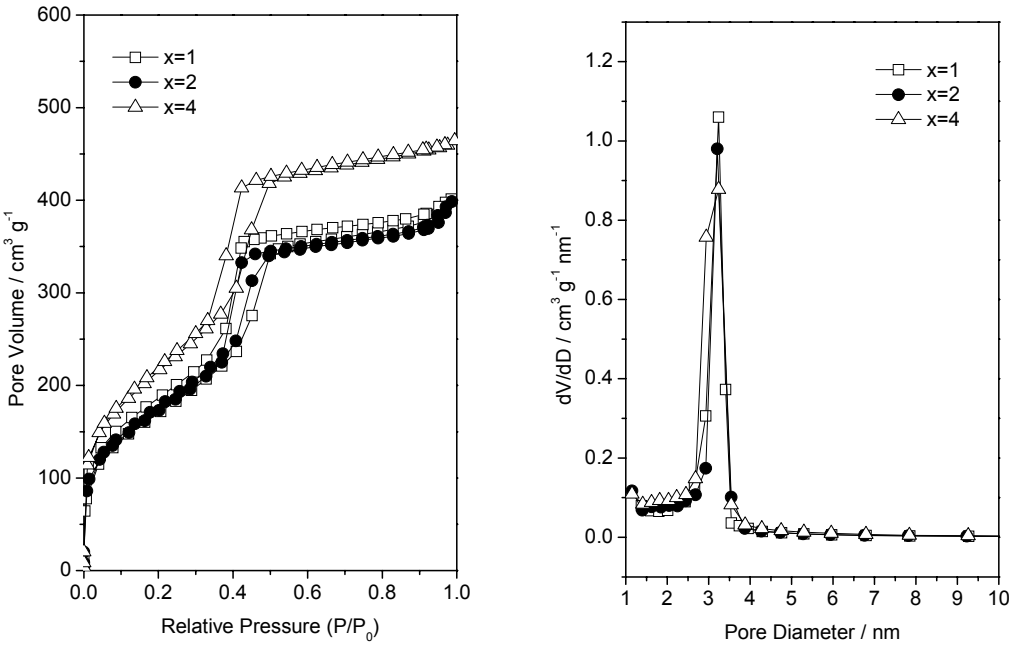

Fig. S4 Nitrogen adsorption-desorption isotherm and corresponding pore size distribution curves of the extracted samples shown in Fig. S1b

Table S2. Surface area, pore volume and pore diameter data.

CES/$C_{18\text{-}3\text{-}1}$ (mol)	Surface Area ($m^2\ g^{-1}$)	Pore Volume ($cm^3\ g^{-1}$)	Pore Diameter (nm)
x=1	622.86	0.65	3.24
x=2	635.71	0.69	3.21
x=4	791.16	0.80	3.24