Characterization of ZnE (E = S, Se, Te) Materials Synthesized Using Silylated–Chalcogen Reagents in Mesoporous MCM-41

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Supplementary Material.

Figure S1. TGA curves for functionalized MCM-41 monitored over a 96 hour time period. Percentage indicates percent loss during heating.

Figure S2. TGA curves for Zn-MCM-41 monitored over a 96 hour time period. Percentage indicates percent loss during heating.

Figure S3. Raman spectra of TPED, F-MCM-41 and Zn-MCM-41. C–H deformation of ethylene diamine (×).

Table S1. Peak area ratios between $S(SiMe_3)_2$, Me_3SiOAc and $O(SiMe_3)_2$ and the internal standard (toluene) taken at specified time intervals during the synthesis of ZnS-MCM-41. Shown are the ratios observed when an excess of $S(SiMe_3)_2$ and an approximately stoichiometric (1:0.5) amount of $S(SiMe_3)_2$ are used in the synthesis.

|		
g	96 hours	25.2 %
f	70 hours	23.0 %
e	46 hours	22.7 %
d	22 hours	20.2 %
c	7 hours	20.7 %
b	3 hours	19.7 %
a	1 hour	16.9 %

TGA Curves F-MCM-41

Temperature [°C]

Figure S1.

f 96 hours 43.3 %

e 73 hours 42.3 %

d 24 hours 38.1 %

c 6 hours 36.5 %

b 1 hour   35.0 %

a 30 min   34.9 %

TGA Curves Zn-MCM-41

Temperature [°C]
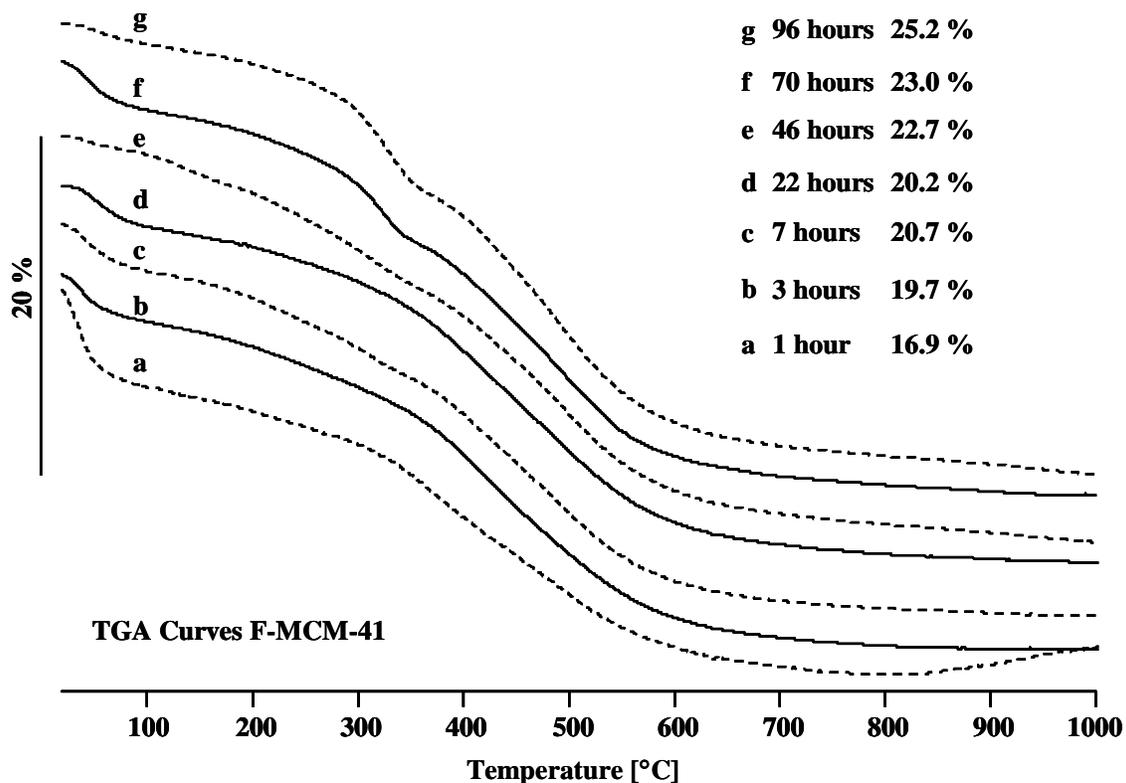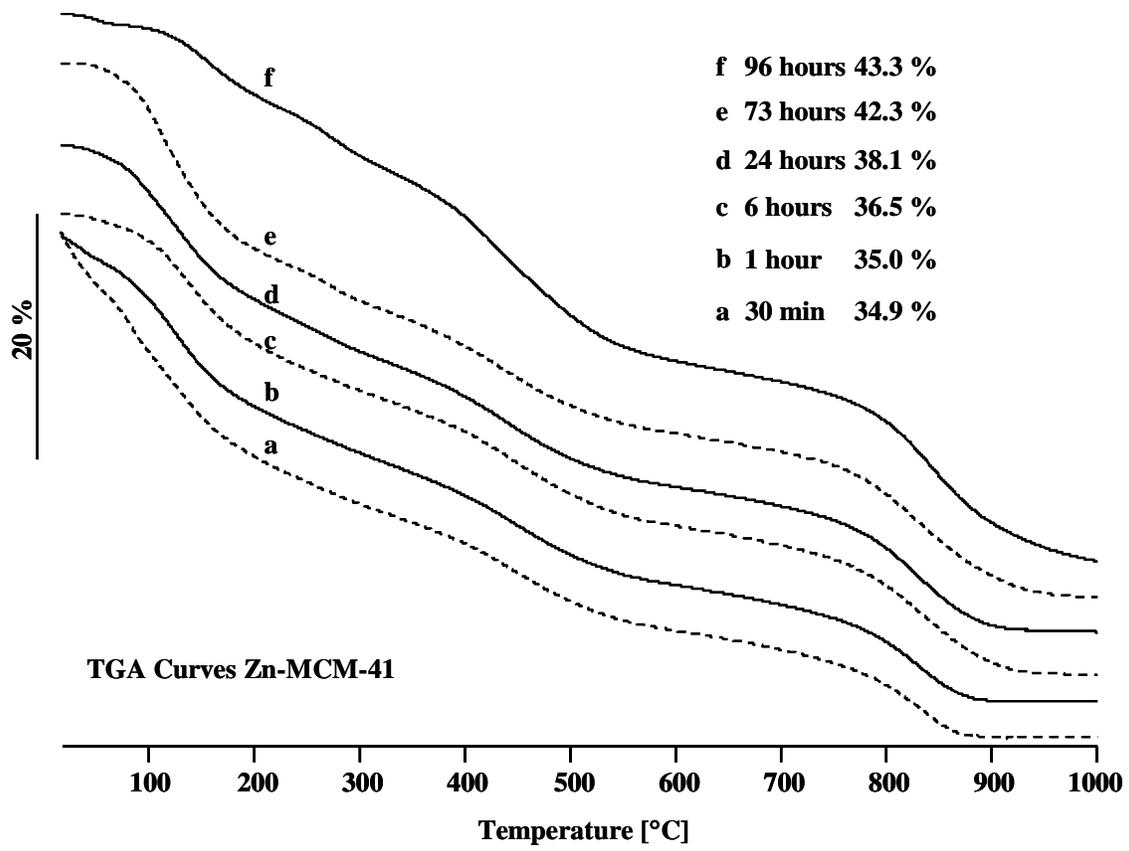
Figure S2.

Raman Spectra

(×) C–H deformation of ethylene moiety
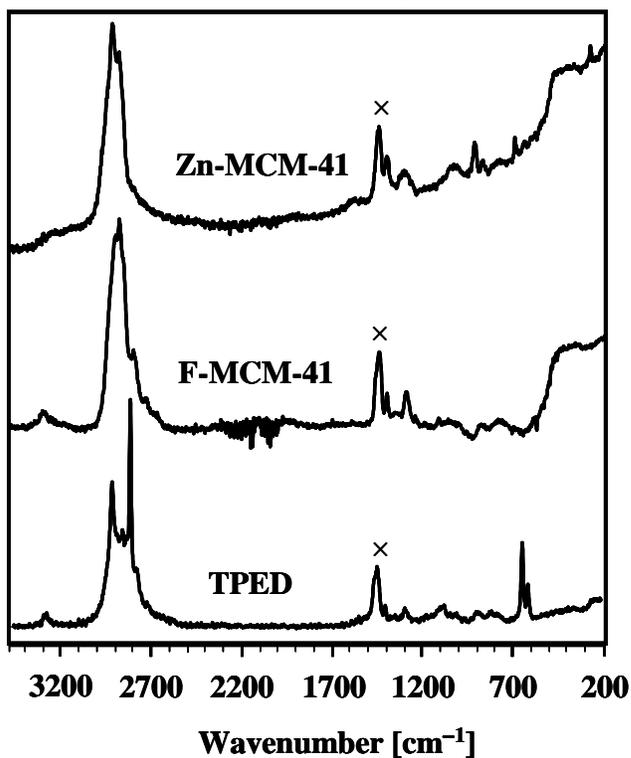
Figure S3.

Table S1.

| Time | Peak Area Ratios Between Designated Product and Toluene Standard | | | | | |
| | S(SiMe₃)₂ | | Me₃SiOAc | | O(SiMe₃)₂ | |
[hours]	Excess	No-excess	Excess	No-excess	Excess	No-excess
2	1.5	0.3	0.4	0.3	0.0	0.0
4	1.3	0.2	0.4	0.4	0.0	0.0
22	1.1	0.0	0.4	0.4	0.2	0.2
70	1.0	0.0	0.4	0.4	0.5	0.3
90	0.9	0.0	0.4	0.27	0.9	0.3
120	0.8	0.0	0.4	0.11	1.1	0.3
160	0.4	0.0	0.4	0.0	1.8	0.4