Supporting Information

Template-induced in situ dispersion of enhanced basic-sites on the sponge-like mesoporous silica and its improved catalytic property

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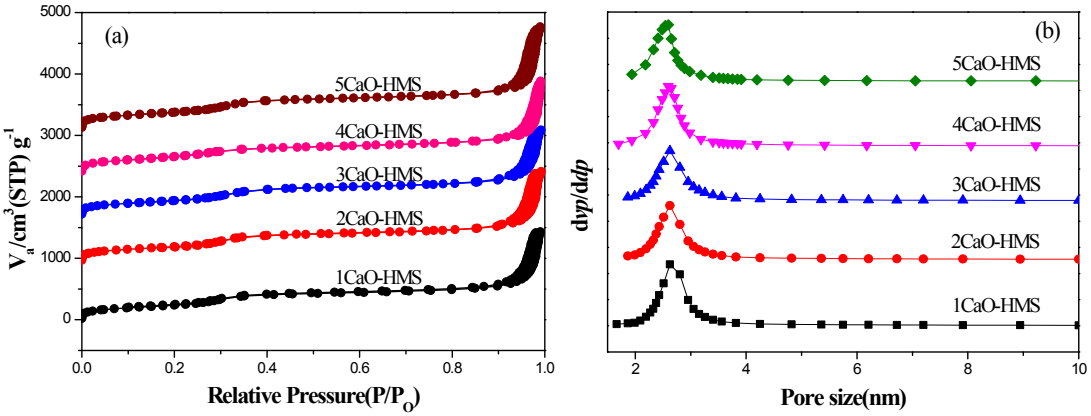

Fig. 1S. N_2-adsorption/desorption isotherms(a) and pore size distribution(b) of series samples of xCaO-HMS.

Table 1S Textural properties of different samples

Samples	S_{BET} (m^2/g)	Pore volume (cm^3/g)	Pore size[a] (nm)	Unit cell parameter, a_0(nm)[b]	d-spacing d_{100}(nm)	Pore wall thickness d_W(nm)[c]
Pure HMS	868	0.78	3.02	4.96	4.30	1.94
1CaO-HMS	992	2.16	2.63	4.62	4.00	1.99
2CaO-HMS	1015	2.19	2.63	4.87	4.22	2.21
3CaO-HMS	943	2.05	2.63	4.93	4.27	2.30
4CaO-HMS	950	2.21	2.60	5.03	4.36	2.43
5CaO-HMS	914	2.11	2.60	5.17	4.48	2.57
5CaO-HMS(p)	367	0.43	1.60	5.21	4.51	3.61

[a] Pore size are determined by BJH method using adsorption curve. [b] ($a_0=2\times d_{100}/\sqrt{3}=\lambda/\sqrt{3}\mathrm{Sin}\theta$)

[c] ($d_W=a_0-d_p$)

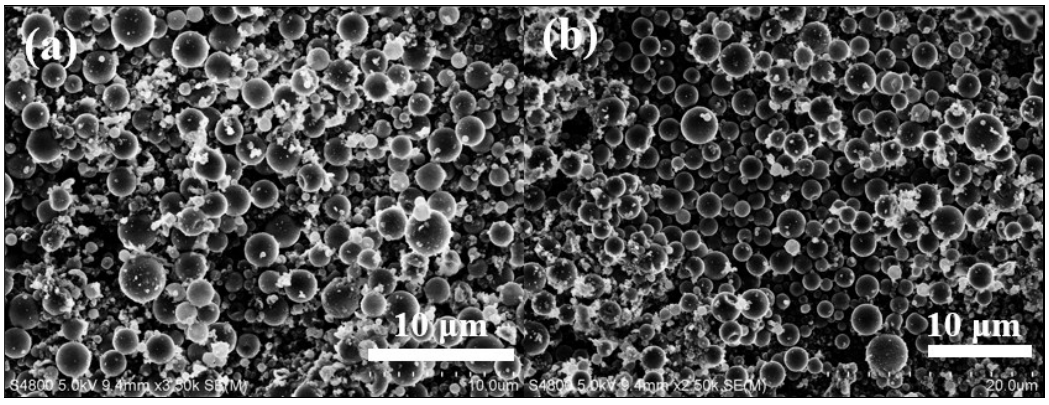

Fig. 2S. Representative SEM images of pure HMS material.

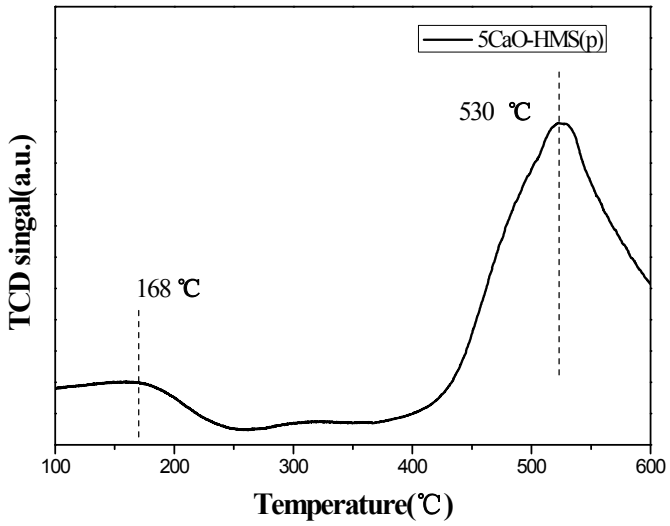

Fig. 3S. Temperature-programmed desorption profiles of CO_2 over 5CaO-HMS(p).

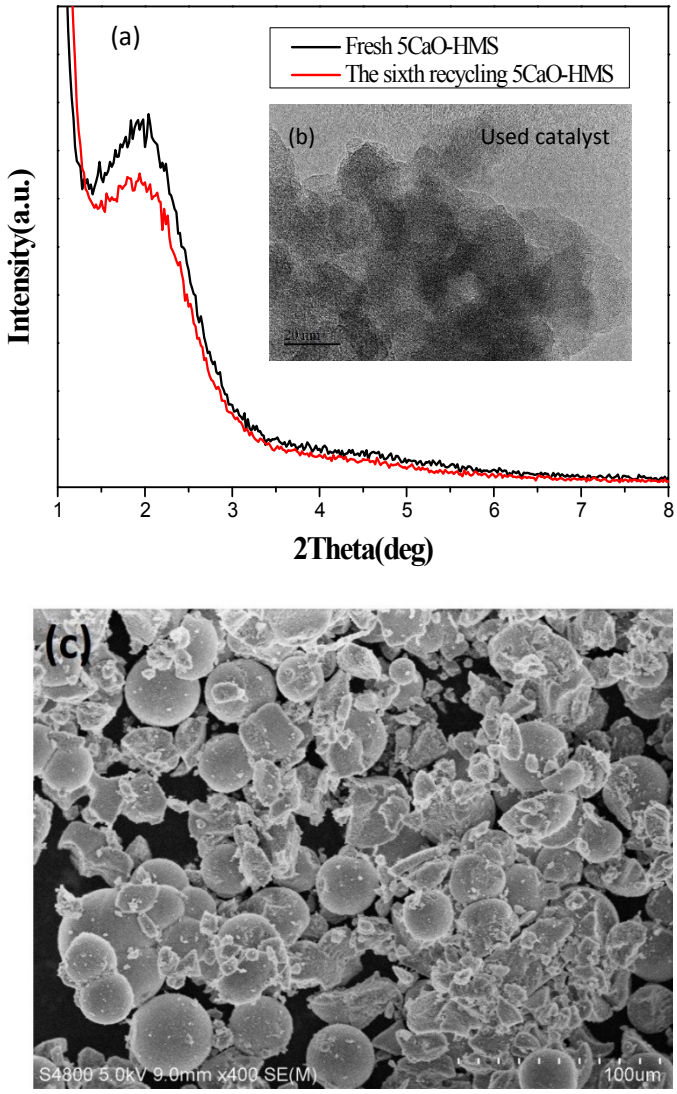

Fig. 4S. Low-angle XRD patterns (a) of fresh 5CaO-HMS and finally recycled 5 CaO-HMS, TEM image(insert) (b) and SEM image (c) of finally recycled 5 CaO-HMS.

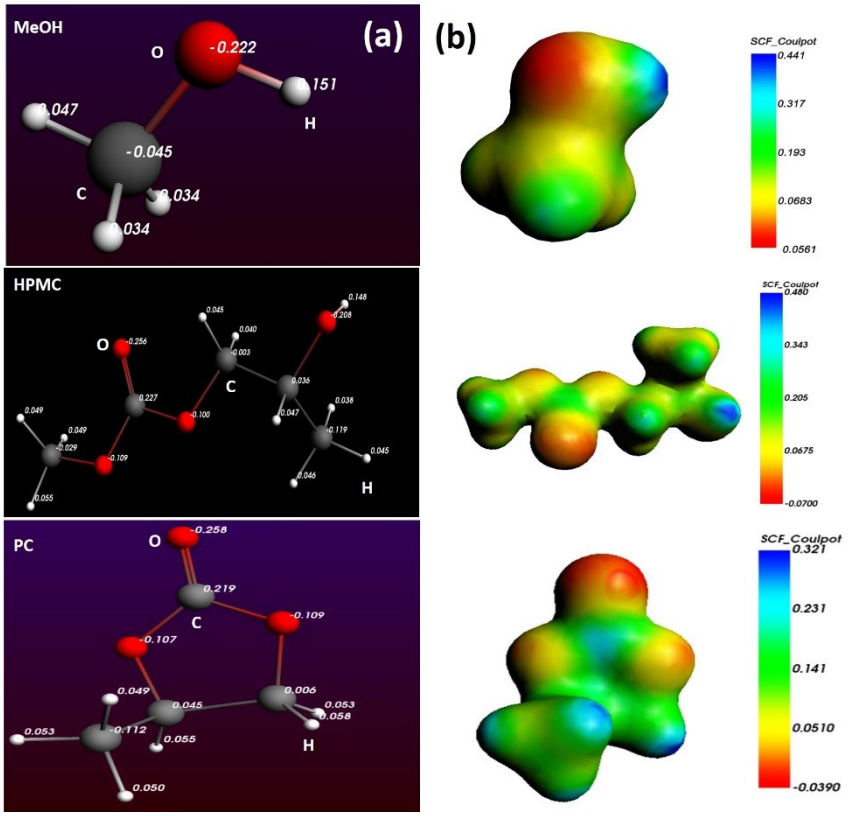

Fig. 5S. Distribution of Hirshfeld charge density (a) and Coulomb potential patterns (b) of MeOH, HPMC and PC.