Supported Information

Highly active and green aminopropyl-immobilized phosphotungstic acid on mesocellular silica foam for the *O*-heterocyclization of cycloocta-1,5-diene with aqueous H_2O_2

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The TG profile of the NH_2-MCF shows a total weight loss of 20%, corresponding to the removal of adsorbed water (**<** 100°C) and the decomposition of amino groups (**~** 310°C), which is supported by the corresponding endothermic and exothermic transitions in the DTA profile. The concentration of amino group was 2.2 mmol/g by TG characterization.

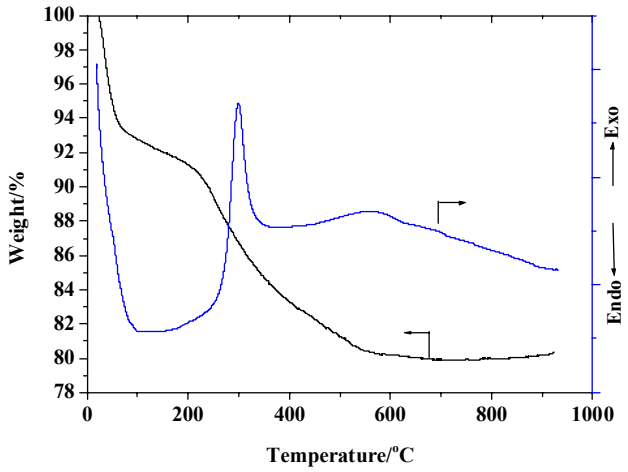

Fig. S1 TG-DTA curve of NH_2-MCF.

Table S1 Surface component of the immobilized catalysts based on XPS.

sample	W (mol%)	W (wt%)	Si (mol%)	N (mol%)	O (mol%)	C (mol%)	P (mol%)
NH_2-MCF	0	0	24.7	3.6	48.0	23.7	0
8%HPW-NH_2-MCF	0.5	4.0	25.6	2.4	54.8	16.6	0.1
16%HPW-NH_2-MCF	2.8	23.3	20.0	2.7	48.6	25.7	0.2
24%HPW-NH_2-MCF	4.8	34.7	18.3	3.0	51.5	22.0	0.4
30%HPW-NH_2-MCF	5.0	36.4	16.0	2.6	48.1	27.8	0.5
16%HPW/MCF-2	0.6	6.2	27.3	0	59.4	12.7	0

Table 1 gives the quantitative results of the mole ratio of different atoms by XPS. It is interesting to note that the surface W content is much higher than the mean values as the W loading higher than 16%. It is clear that the surface W content of loading of 30% is similar to the loading 24% , agreeing well with the ICP results.

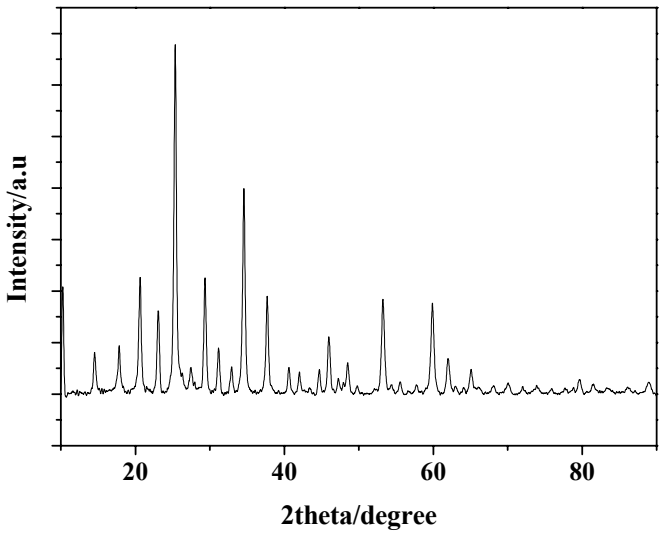

Fig. S2 X-Ray diffraction pattern of 16% HPW/MCF catalyst.

The XRD pattern of 16% HPW/MCF catalyst is showed in Figure S2. It can be seen that the catalyst show typical HPW peaks. This finding indicates that the HPW species on the catalyst can show crystalline keggin-type structure. This result agrees well with the ^{31}P MAS-NMR results.