Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

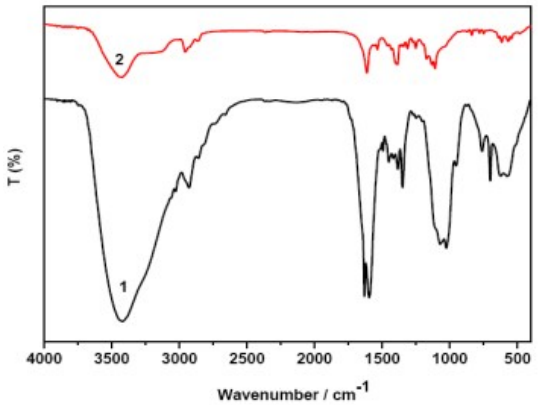


Fig. S1 FT-IR spectra of (1) 4d; (2) the neat chiral salen Mn (III)

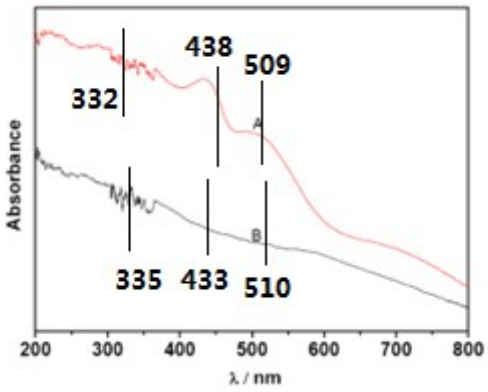


Fig. S2 Solid reflectance UV-vis spectra (A) the neat chiral salen Mn (III);(B)the catalyst 4d

Thermal gravimetric analysis and powder XRD

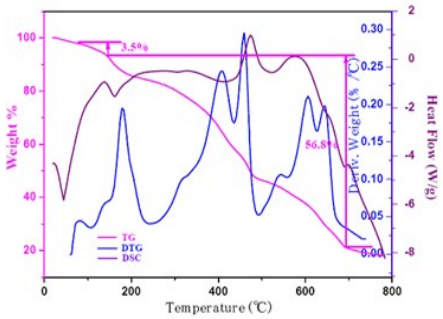


Fig. S3 TG curves of heterogenerous catalyst 4d.

According to 4d (shown in Fig. S3), the initial weight loss is 3.38% below 180℃, which is due to surface-bound or intercalated water in this stage. In the temperature range of 180-700℃, the organic moieties decompose, accompanied with 56.8% weight loss in this stage. Obviously, the catalyst 4d still keep superior stability lower than 180℃. In general, organic reactions of heterogeneous catalysis are carried out below 180℃. Therefore, the catalyst 4d has adequate thermal stabilities to be applied in heterogeneous catalytic reactions.

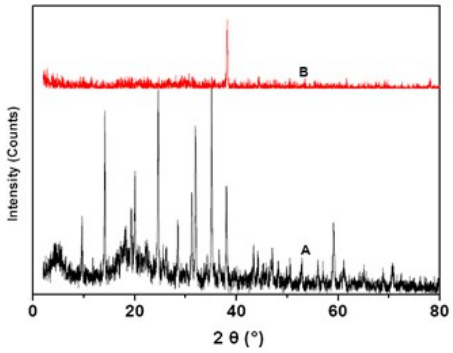
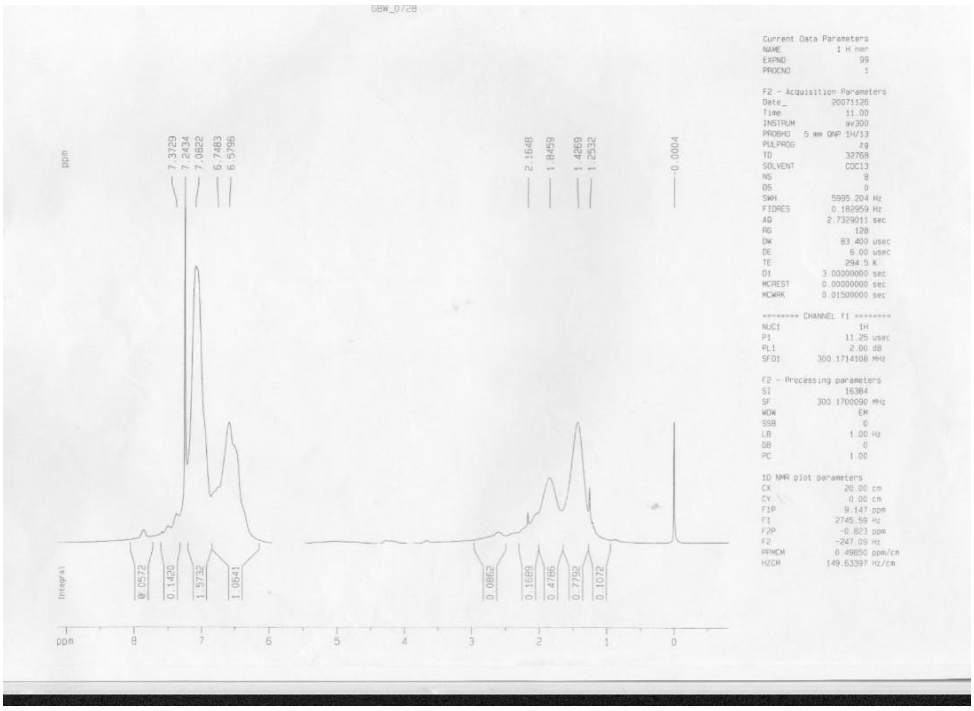
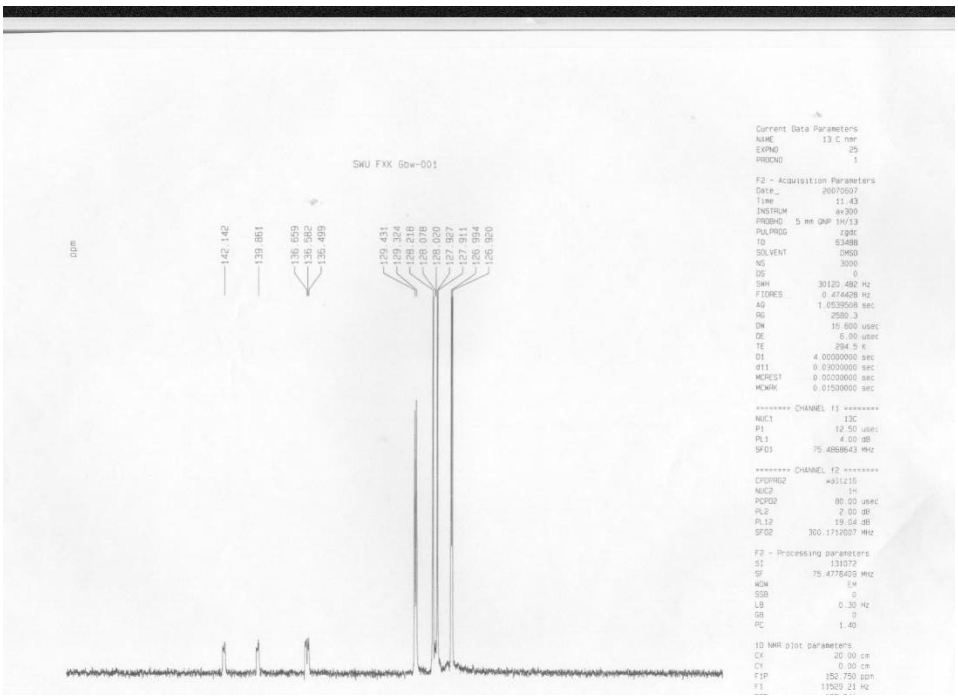


Fig. S4 XRD patterns of the support (A) ZnPS-PVPA and (B) the heterogenous catalyst 4d.

As could be seen from Fig. S4, XRD patterns of ZnPS-PVPA display a broad 001 peak (the lowest-angle diffraction peak in the pattern), accompanied with other peaks at higher-order 00*n* peaks at larger angles and lower intensities such as at 38.04°. Although the intensities of all peaks decrease after the immobilization of Mn(III) salen complexes, the reflections for ZnPS-PVPA and the catalyst 4d still indicate that the mesoporous structure of the parent supports remain intact upon the modification of alkyldiamine. Apart from this, the amount of Mn(salen) attached onto ZnPS-PVPA is in the range of 0.68-0.76 mmol/g (Mn element) ascertained by AAS.



^{1}HNMR of PS-PVPA



^{31}C NMR of PS-PVPA