

Supporting information

**Synthesis of Functional xLayMn/KIT-6 and Feature of Hot Coal Gas
Desulphurization**

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MCM-41 was synthesized according to ref. 1

Table S1. Specific surface area (S_{BET}), total pore volume (V_t), micropore volume (V_{mic}), mesopore volume (V_{meso}) and average pore size (D_a) of MCM-41, fresh 3La97Mn/MCM-41 and pure 3La97Mn.

| Sample | V_t (mm ³ /g) | V_{meso} (mm ³ /g) | V_{mic} (mm ³ /g) | D_a (nm) | S_{BET} (m ² /g) |
|----------------|----------------------------|------------------------------------|-----------------------------------|---------------|----------------------------------|
| MCM-41 | 759 | 437 | 322 | 3.3 | 913 |
| 3La97Mn/MCM-41 | 137 | 71 | 66 | 2.4 | 228 |
| Pure 3La97Mn | 63 | 58.4 | 4.6 | 4.5 | 56 |

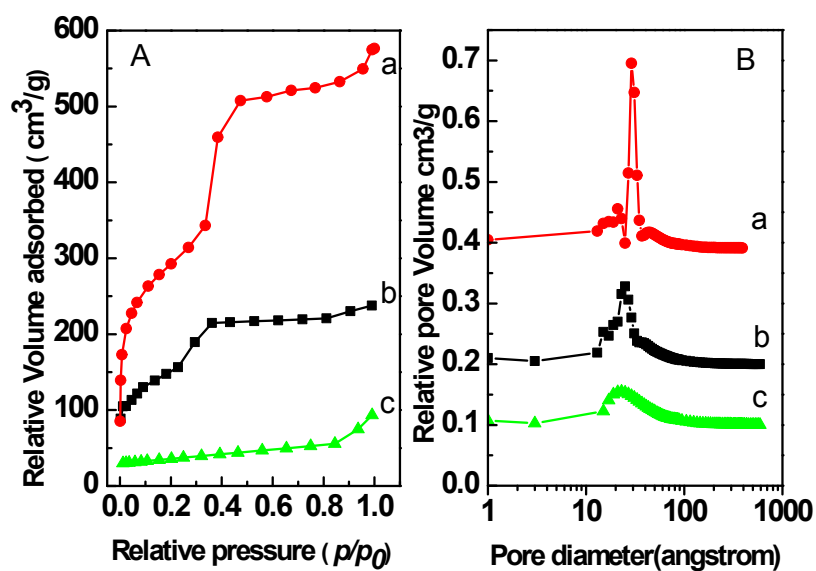


Fig. S1 (A) N₂ adsorption isotherms and (B) pore diameter distributions of (a) MCM-41, (b) fresh 3La97Mn/MCM-41, (c) pure 3La97Mn.

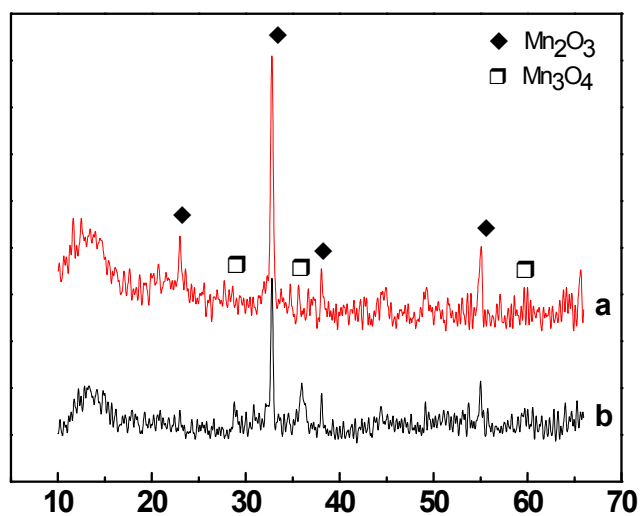


Fig. S2 Wide angle XRD patterns of (a) fresh pure 3La97Mn, (d) fresh 3La97Mn /MCM-41.

References

1. Cai, Q., Lin, W. Y., Xiao, F S, Pang, W. Q, Chen, X. H, Zou, B. S., The preparation of highly ordered MCM-41 with extremely low surfactant concentration, *Microporous Mesoporous Mater.*, 1999, **32**, 1-15.