

*Supplementary Material for*

**Effect of surface species and structure on the performance of CeO<sub>2</sub>  
and SO<sub>4</sub><sup>2-</sup> doped MCM-41 catalyst toward NH<sub>3</sub>-SCR**

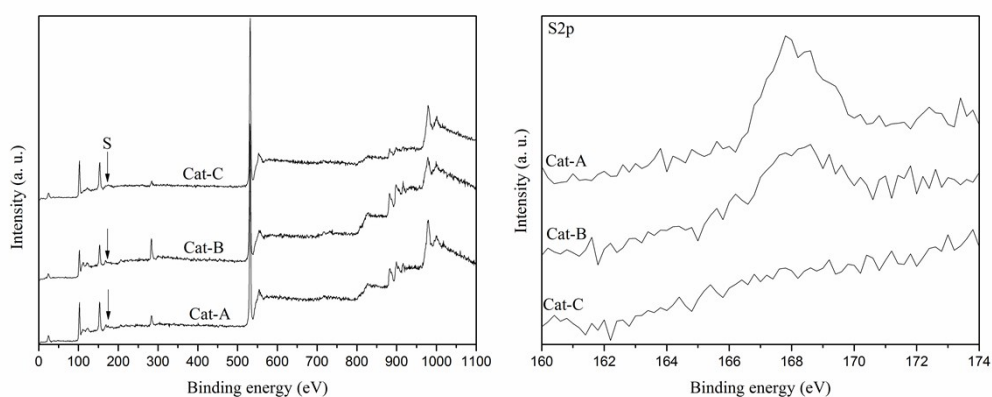
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The S2p XPS spectra of the Cat-A, Cat-B and Cat-C were shown in Fig. S1. In contrast with the Cat-C catalyst, the Cat-A and Cat-B catalyst showed a weak peak at 168-169 eV, respectively, which corresponded to formation of surface SO<sub>4</sub><sup>2-</sup> species. However, the intensity of surface SO<sub>4</sub><sup>2-</sup> species was so weak that it could be not detected by XPS. The phenomenon indicated that no surface S species existed at the outer surface or at the entrance of the pores over the Cat-A, Cat-B and Cat-C.



**Fig. S1** S2p XPS spectra of the catalysts.