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Supporting information

Mesoporous MnOx-CeO_2 composites for NH_3-SCR: the effect of preparation method and a third dopant

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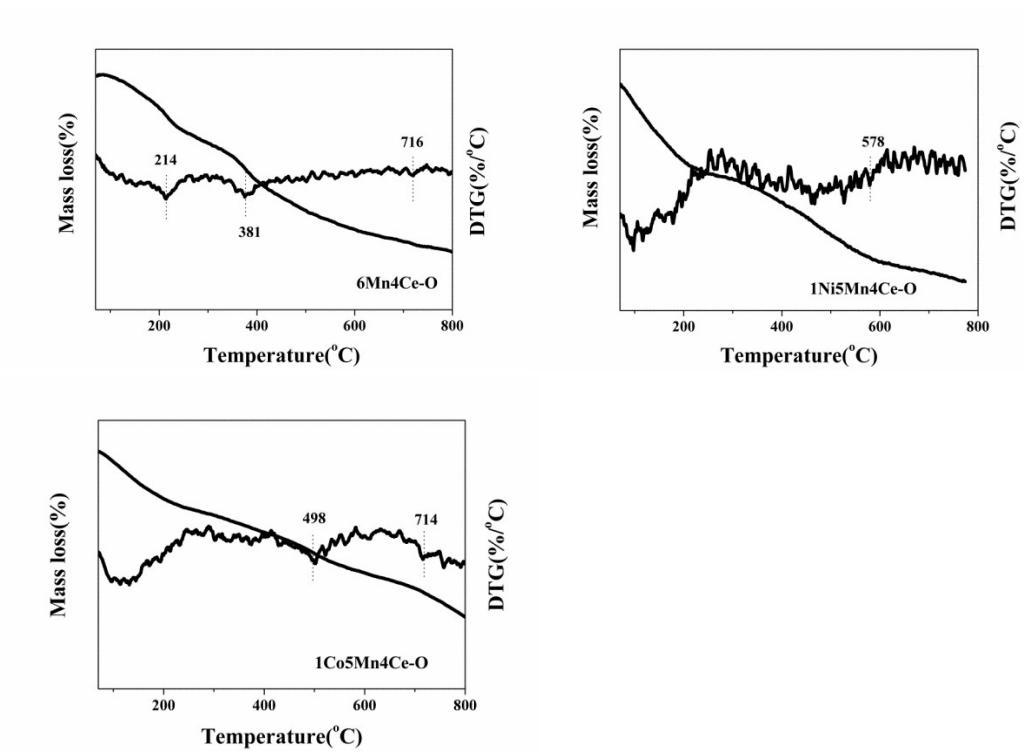

Fig.S1 TG/DTG results of samples from an oxalate route

TG analysis was performed in air (100ml/min) on a NETZSCH STA 449 Thermal analysis instrument. In each experiment, 20mg sample was placed on an Al_2O_3 pan from 30-800°C with a heating rate of 10°C/min. The TG/DTG curves of three samples were shown in Fig.S1.

The weight loss before 200°C was due to water adsorbed on the surface of catalysts, indicating the samples can easily lose the adsorbed water. A weight loss of 6Mn4Ce at 214°C may be due to the decompostion of surface ammonium sulfate[1]. The weight loss of 6Mn4Ce and 1Co5Mn4Ce at 716°C and 714°C may be caused by decompostion of metal sulfates on catalyst's surface[2]. There was no related peak on 1Ni5Mn4Ce, indicating introduction of nickel could inhibit the formation of metal sulphates. The result is consistent with SO_2-TPD.

1. Jia B, Guo J, Luo H, Shu S, Fang N, Li J, (2018) Study of NO removal and resistance to SO2 and H2O of MnOx/TiO2, MnOx/ZrO2 and MnOx/ZrO2–TiO2. *Applied Catalysis A: General 553:*82-90

2. Zhang P, Sun Y, Su W, Wei Y, Liu J, (2016) Low-temperature selective catalytic reduction of NO with NH3 over Ni-Mn-Ox catalysts. *RSC Advances 6:*107270-107277