

Supplementary Content

Cobalt supported on metal-doped ceria catalysts (M = Zr, Sn and Ti) for NO oxidation

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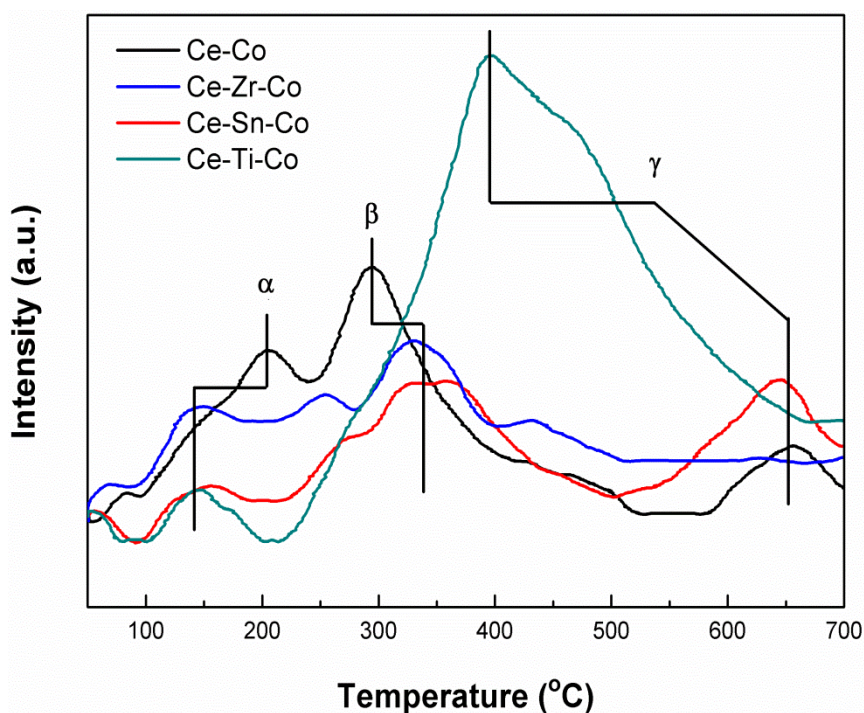


Fig. S1 NO-TPD of these catalysts.

The TPD profiles of NO on these catalysts were shown in Fig. S1. As the temperature was increased from 50 to 700 °C, NO desorption was observed on these

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samples. All the samples showed three main temperature ranges (α , β and γ), suggesting that NO adsorbed on three different sites [1]. NO desorption was completed over all the samples at below 700 °C. The low temperature peak α was ascribed to the desorption of NO from weakly bonded sites and the peak β and γ in high temperature range was due to the strongly adsorbed species, i.e., nitrates [2]. The NO desorption amount was consistent with NO capacities of these sorbents. The weakly adsorbed NO (peak α) increased with the amount of highly dispersed Co_3O_4 . This results indicated the highly dispersed Co_3O_4 species were favorable for NO adsorption and desorption, thus improving the catalytic activities. In addition, the adsorbed NO was easy to be desorbed in the temperature range from 50 °C to 250 °C, which indicated that the adsorption NO was weak.

Table S1 The textural properties of CeO_2 , Ce-Zr, Ce-Sn and Ce-Ti supports.

Sample	BET ($\text{m}^2 \text{g}^{-1}$)	$S_{\text{BET}}(500) - S_{\text{BET}}(800)/S_{\text{BET}}(500)$
CeO_2	65	/
Ce-Zr	91	/
Ce-Sn	72	/
Ce-Ti	85	/
CeO_2 -800	3	0.9538
Ce-Zr-800	46	0.4945
Ce-Sn-800	31	0.5694
Ce-Ti-800	49	0.4235

References

- [1] J. Xu, Y. J. Wang and Y. F. Zhu, *Langmuir*, 2013, **29**,10566.
- [2] B. Azambre, L. Zenboury, A. Koch and J. V. Weber, *J. Phys. Chem. C*, 2009, **113**,
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