

## Supporting Information

### **Mn mixed oxide catalysts supported on Sn-doped CoAl- LDO for low-temperature NH<sub>3</sub>-SCR**

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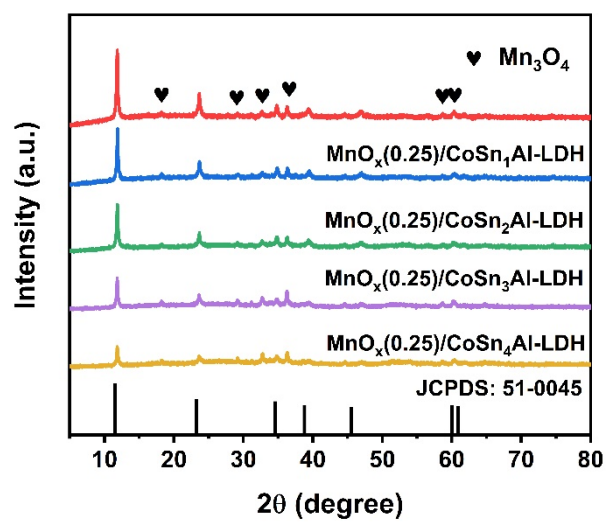
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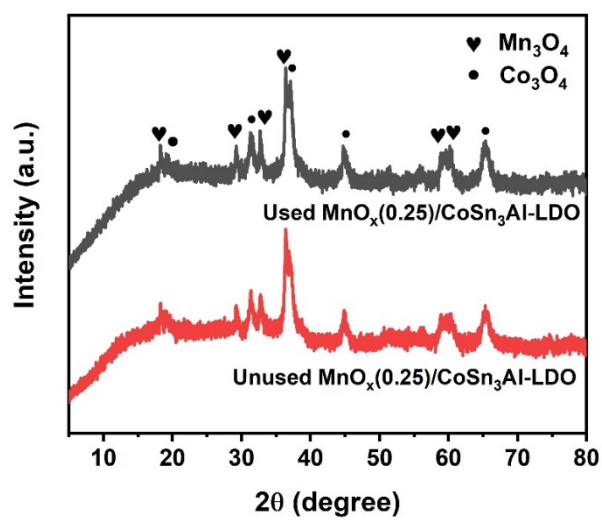
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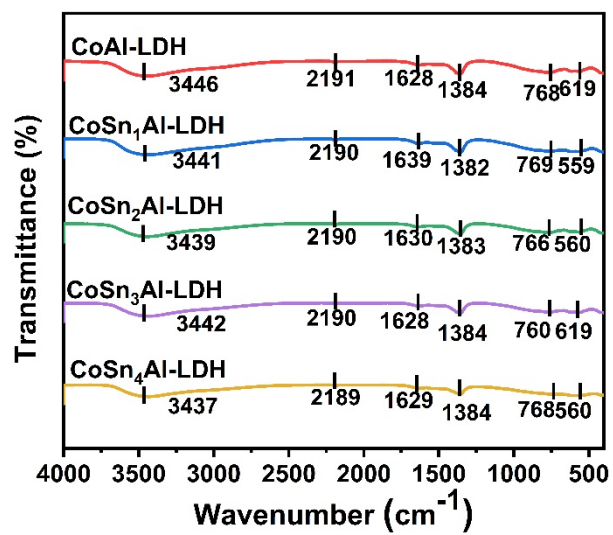
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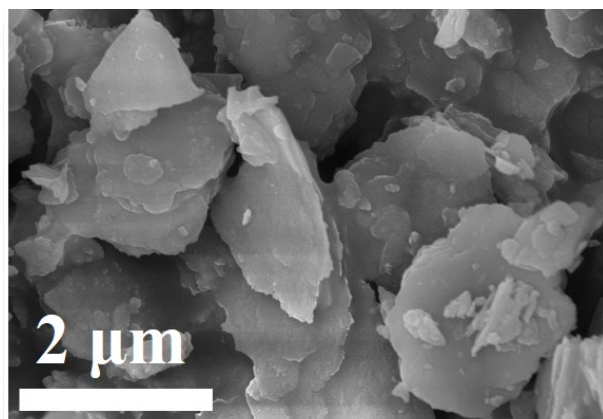
**Figure S1.** XRD patterns of  $\text{MnO}_x(0.25)/\text{CoSn}_n\text{Al-LDH}$  precursors ( $x=0, 1, 2, 3, 4$ ).



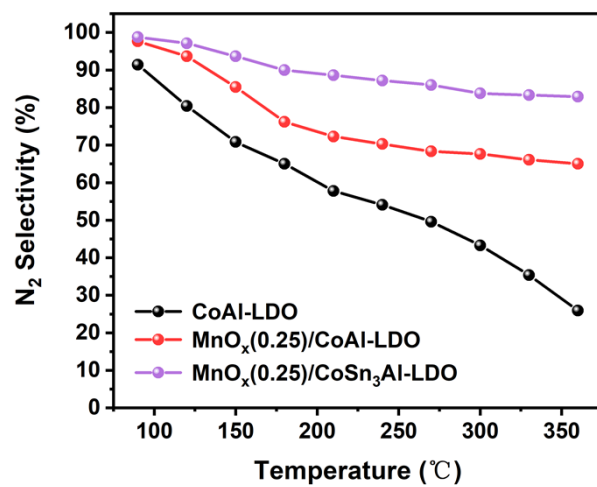
**Figure S2.** XRD patterns of the used and unused  $\text{MnO}_x(0.25)/\text{CoSn}_3\text{Al-LDO}$  catalysts.



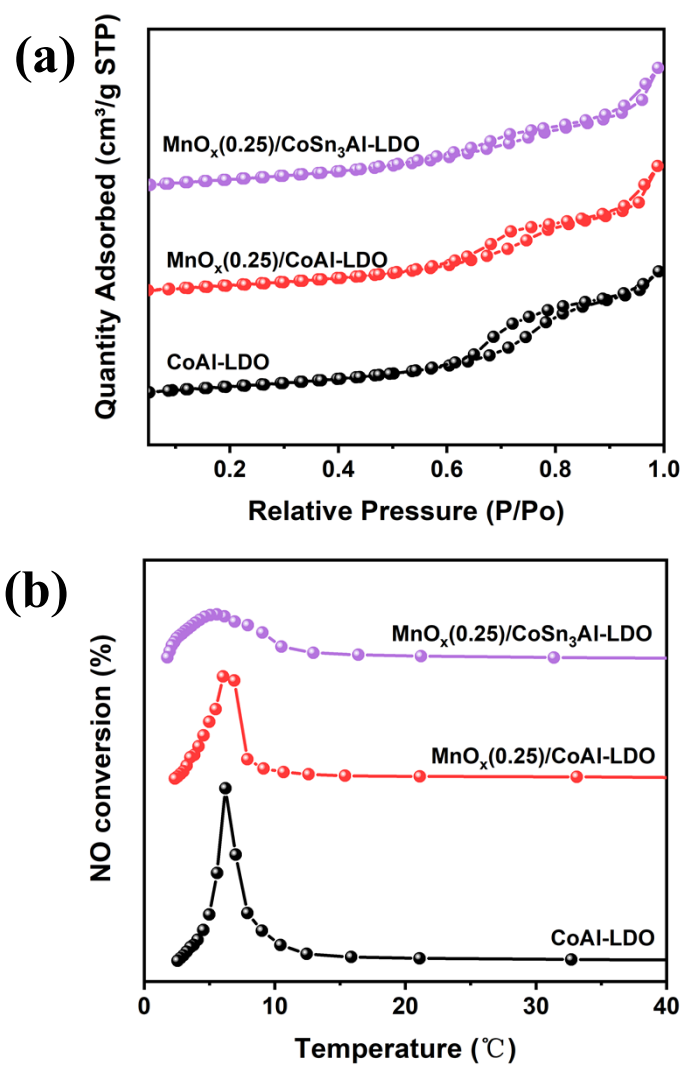
**Figure S3.** FT-IR spectra of CoSn<sub>n</sub>Al-LDH (x=0, 1, 2, 3, 4).



**Figure S4.** SEM image of CoSn<sub>3</sub>Al-LDH.



**Figure S5.** N<sub>2</sub> selectivity of various catalysts. Reaction conditions: [NO]=[NH<sub>3</sub>]=500 ppm, [O<sub>2</sub>]=3 vol.%, GHSV=30,000 h<sup>-1</sup> and N<sub>2</sub> as balance.



**Figure S6.** (a)  $\text{N}_2$  adsorption-desorption isotherms and (b) pore diameter distribution of various catalysts.

**Table S1.** Summary of textual parameters of the various samples.

Samples	Specific area (m <sup>2</sup> /g)	Pore volume (cm <sup>3</sup> /g)	Average pore diameter (nm)
CoAl-LDO	122.83	0.31	6.21
Mn(0.25)/CoAl-LDO	110.35	0.32	6.03
Mn(0.25)/CoSn <sub>3</sub> Al-LDO	120.14	0.30	5.56