Effect of Ce and La dopants in Co$_3$O$_4$ nanorods on catalytic activity of CO and C$_3$H$_6$ oxidation

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Fig. S1. HR-TEM images of (a) Co$_3$O$_4$, (b) CeO$_2$-Co$_3$O$_4$ and (c) La$_2$O$_3$-Co$_3$O$_4$
Fig. S2. Light-off curves of CO (a) and C$_3$H$_6$ (b) oxidation over Co$_3$O$_4$ and physical mixed CeO$_2$+Co$_3$O$_4$ and La$_2$O$_3$+Co$_3$O$_4$. Reaction conditions: (a) 0.4% CO, 10% O$_2$ balanced with N$_2$; (b) 0.1% C$_3$H$_6$, 10% O$_2$ balanced with N$_2$.
Fig. S3. Oxygen loss distribution of different catalysts versus temperature.
Fig. S4. *In situ* FTIR spectra of CO adsorbed at 100 °C followed by N₂ purging and O₂/N₂ reaction on (a) Co₃O₄, (b) CeO₂-Co₃O₄ and (c) La₂O₃-Co₃O₄
Fig. S5. In situ FTIR spectra of C$_3$H$_6$ initially adsorbed at 25 °C and then adsorbed at 200 °C followed by N$_2$ purging and O$_2$/N$_2$ reaction on (a) Co$_3$O$_4$, (b) CeO$_2$-Co$_3$O$_4$ and (c) La$_2$O$_3$-Co$_3$O$_4$
Fig. S6. Long-term stability tests under the simulated diesel exhaust over (a) Co$_3$O$_4$, (b) CeO$_2$-Co$_3$O$_4$ and (c) La$_2$O$_3$-Co$_3$O$_4$. Reaction condition: 0.4% CO, 0.1% C$_3$H$_6$, 0.05% NO, 10% O$_2$, 5% H$_2$O balanced with N$_2$ at WHSV = 240,000 mL g$^{-1}$ h$^{-1}$.