

## Supplementary Materials

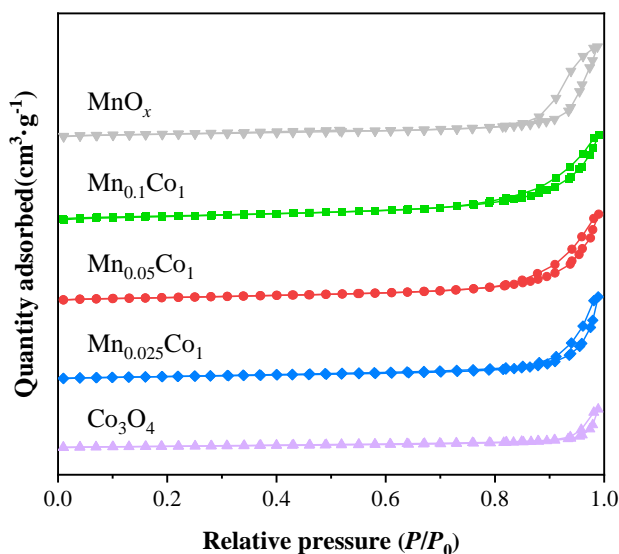
# Preparation of Mn-Doped $\text{Co}_3\text{O}_4$ Catalysts by an Eco-Friendly Solid-State Method for Catalytic Combustion of Low-Concentration Methane

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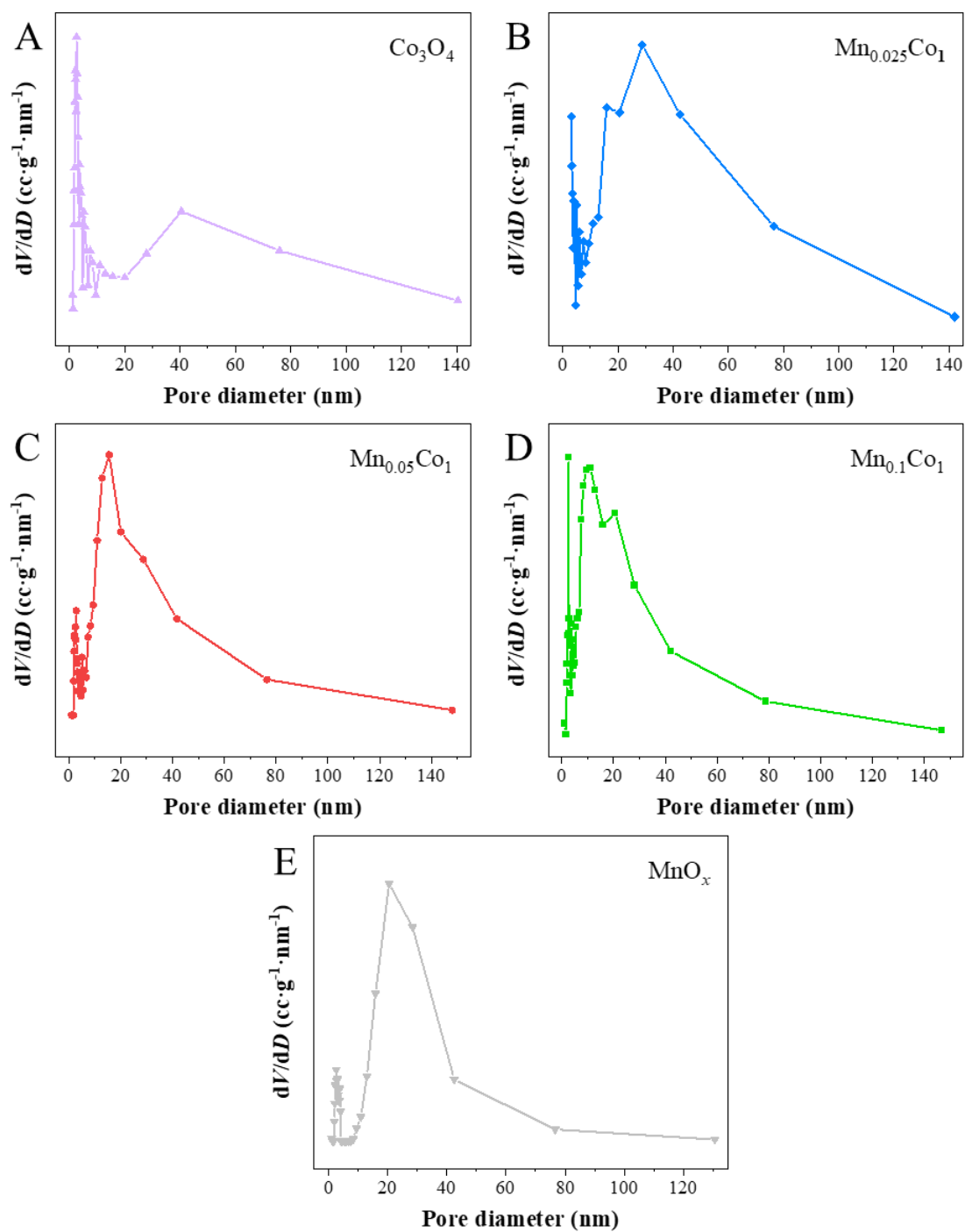
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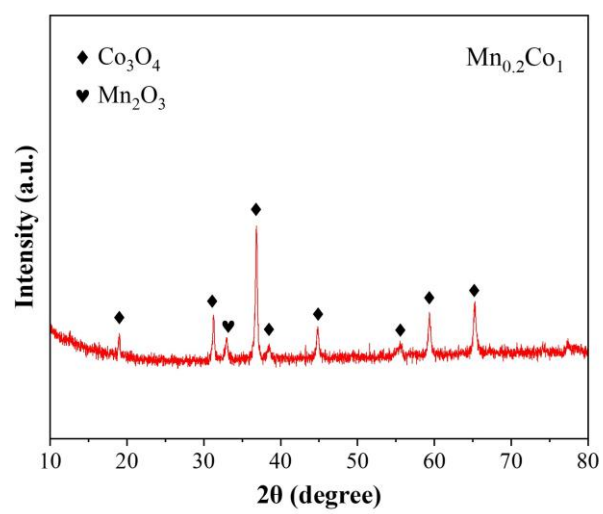
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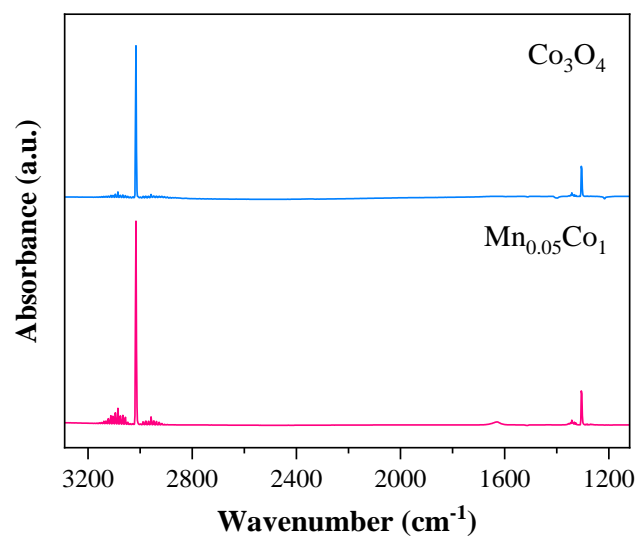
**Figure S1.**  $\text{N}_2$  adsorption–desorption isotherms of  $\text{Co}_3\text{O}_4$ ,  $\text{Mn}_x\text{Co}_1$  ( $x = 0.025, 0.05$ , and  $0.1$ ), and  $\text{MnO}_x$  catalysts.



**Figure S2.** Pore size distribution profiles of (A)  $\text{Co}_3\text{O}_4$ , (B)  $\text{Mn}_{0.025}\text{Co}_1$ , (C)  $\text{Mn}_{0.05}\text{Co}_1$ , (D)  $\text{Mn}_{0.1}\text{Co}_1$ , and (E)  $\text{MnO}_x$  catalysts (Method: BJH desorption).



**Figure S3.** The XRD spectra of  $\text{Mn}_{0.2}\text{Co}_1$  catalyst.



**Figure S4.** *In-situ* DRIFTS spectra of  $\text{Mn}_{0.05}\text{Co}_1$  and  $\text{Co}_3\text{O}_4$  catalysts after  $\text{CH}_4$  adsorption for 15 min.