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## ACCEPTED MANUSCRIPT

Synthesis, characterization, and catalytic evaluation of  $Co_3O_4/\gamma$ - $Al_2O_3$  as methane combustion catalysts: Significance of Co species and the redox cycle

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#### **Abstract**

A series of  $\text{Co}_3\text{O}_4/\gamma\text{-Al}_2\text{O}_3$  catalysts with different  $\text{Co}_3\text{O}_4$  loadings were prepared by incipient wetness impregnation (IWI) and a combination of IWI and subsequent

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