

Accepted Manuscript

Title: Fabrication of mesoporous Co_3O_4 oxides by acid treatment and their catalytic performances for toluene oxidation

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PII: S0926-860X(17)30524-0
DOI: <https://doi.org/10.1016/j.apcata.2017.11.003>
Reference: APCATA 16456

To appear in: *Applied Catalysis A: General*

Received date: 2-8-2017
Revised date: 1-11-2017
Accepted date: 2-11-2017

Please cite this article as: Genqin Li, Chuanhui Zhang, Zhong Wang, He Huang, Hui Peng, Xuebing Li, Fabrication of mesoporous Co_3O_4 oxides by acid treatment and their catalytic performances for toluene oxidation, *Applied Catalysis A, General* <https://doi.org/10.1016/j.apcata.2017.11.003>

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Fabrication of mesoporous Co_3O_4 oxides by acid treatment and their catalytic performances for toluene oxidation

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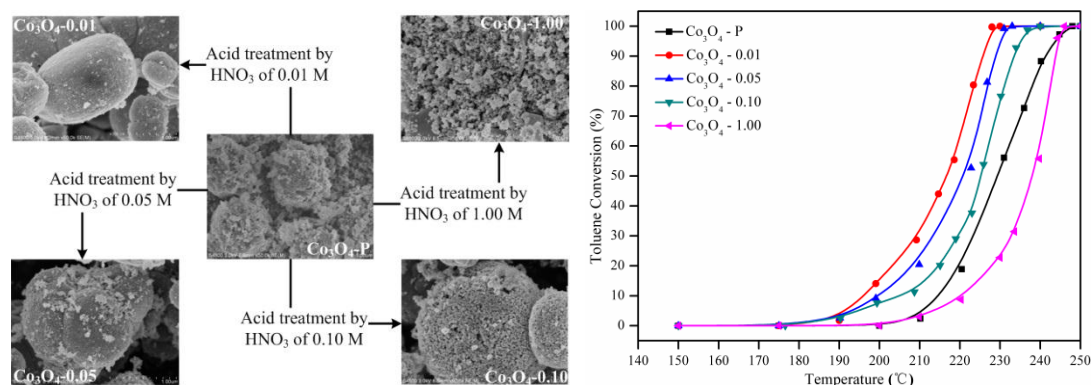
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Graphical Abstract



Highlights

- Mesoporous Co_3O_4 were prepared by precipitation with subsequent acid treatment.
- The diluted acid treatment significantly enhanced the catalytic activity of Co_3O_4 .
- The specific surface area plays a vital role in the reaction.
- Surface acidity, $\text{Co}^{2+}/\text{Co}^{3+}$ and O_{ads} species were also key parameters in the reaction.

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