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Simple post-synthesis of mesoporous p-type Co_3O_4 nanochains for enhanced H_2S gas sensing performance

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Highlights

- ► Facile method has employed to prepare mesoporous Co_3O_4 nanochains with high specific surface area.
- ► The Co_3O_4 nanochains has highly sensitive and selective toward H_2S gas with rapid response.
- ► Such a potential gas sensing strategy can be easily extended to other metal oxides.

Abstract: In this paper, cobalt carbonate hydroxide ($\text{Co}(\text{CO}_3)_{0.5}(\text{OH})\cdot 0.11\text{H}_2\text{O}$) nanowires were successfully fabricated by a simple hydrothermal route without using surfactants and by subsequent heat treatment in air at 600 °C for 5 h to obtain mesoporous Co_3O_4 nanochains. As-synthesized nanochains with length of several micrometers consisted of well-linked Co_3O_4 nanoparticles with an average size of 50 nm. The sensor based on mesoporous Co_3O_4

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