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Authors: Shuangming Wang, Jing Cao, Wen Cui, Longlong Fan, Xifei Li, Dejun Li



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Oxygen vacancies and grain boundaries potential barriers modulation facilitated formaldehyde gas sensing performances for In_2O_3 hierarchical architectures

Shuangming Wang^{a,b,*}, Jing Cao^{c,*}, Wen Cui^{a,b}, Longlong Fan^{a,b}, Xifei Li^{a,b} and Dejun Li^{a,b}

^aCollege of Physics & Materials Science, Tianjin Normal University, Tianjin 300387, People's Republic of China.

^bTianjin International Joint Research Centre of Surface Technology for Energy Storage Materials, Tianjin Normal University, Tianjin 300387, People's Republic of China.

^cSchool of Science, Tianjin Polytechnic University, Tianjin 300387, People's Republic of China.

* E-mail address: wangshuangming@mail.tjnu.edu.cn

* E-mail address: caojing@tjpu.edu.cn

Highlights

- Unique In_2O_3 architectures are fabricated by a rapid and facile route.
- Nanoparticles-assembled In_2O_3 architectures present hierarchical porous structure.
- Oxygen vacancies and potential barriers jointly enhance gas sensing performances.
- Gas diffusion, gas adsorption and electron transfer are effectively improved.
- In_2O_3 architectures based sensors show excellent formaldehyde sensing properties.

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