

Showcasing research from Professor Lihua Huo and Yingming Xu's laboratory, College of Chemistry, Chemical Engineering and Materials, University of Heilongjiang, Harbin, China.

In situ construction of AFe_2O_4/Fe_2O_3 (A = Cd, Ca, Zn) array structures for selective detection of VOCs

In this work, a novel AFe_2O_4/Fe_2O_3 (A = Cd, Ca, Zn) array material is developed as an integrated gas sensor to selectively identify single or mixed VOC gases (ethanol, triethanolamine, and acetone). The establishment of the built-in electric field leads to electron redistribution and effectively promotes interfacial charge transfer, improving the gas-sensing performance of the material. Different spinels can regulate the heterogeneous interface state and the adsorption of gas molecules, and improve the selectivity of materials. This work presents a general strategy for constructing Fe-based spinel array structures and detecting mixed VOCs.



