

Title:

Study on VOCs detection of gas sensor based on multiple metal oxide semiconductors

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Abstract:

Gas sensors have become increasingly significant because of the rapid development in electronic devices that are applied in detecting noxious gases. It is very necessary to design new sensitive materials, and study systematically the internal relationship between sensing performances and the material nano-structure and components. Multiple metal oxides have attracted the noticeable attention because of variable cation valence states, abundant defects, and controllable nano-structure and surface morphology. The study synthesized different multiple metal oxides by various liquid-phase methods as the sensing materials to detect volatile organic compounds (VOCs). The gas-sensing performance and mechanism, and the effect of stoichiometric ratio regulation are deeply studied in a systematic way. This study provides a probable for the construction and design gas sensor based on multiple metal oxide semiconductor with remarkable gas sensing performance.