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Effective hydrogen gas sensor based on NiO@rGO nanocomposite

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Highlights

- NiO@rGO nanocomposite consisting of NiO NPs uniformly anchored on rGO is developed.
- The preparation method involves freeze-drying followed by heat treatment.
- NiO@rGO sensor shows high response and selectivity to H₂ at low working temperature.
- High performance is ascribed to the electron transfer between NiO NPs and rGO.

Abstract: A NiO@rGO nanocomposite is prepared by a freeze-drying method combined with heat treatment. The morphology and structure are analyzed through X-ray diffraction, scanning electron microscopy, transmission electron microscopy, Raman spectra, and X-ray photoelectron spectroscopy. The results clearly show that NiO nanoparticles are uniformly anchored on the

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