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Ethanol gas sensing using a networked PbO-decorated SnO_2 nanowires

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ABSTRACT

PbO-decorated SnO_2 nanowires (NWs) were synthesized using a two-step process consisting of thermal evaporation of Sn powders in an oxygen atmosphere and solvothermal decoration of the SnO_2 NWs with PbO nanoparticles. Chemiresistive gas sensors were fabricated by deposition of the synthesized PbO-decorated SnO_2 NWs onto interdigitated electrodes. The pristine and PbO-decorated SnO_2 NW sensors exhibited responses of 24.0 and 60.0 to 200-ppm ethanol at 300°C, respectively, suggesting that the response of the SnO_2 NWs is significantly improved by decorating them with PbO nanoparticles. This result also suggests

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