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Synthesis and characterization of tin oxide nanostructures for gas sensing applications

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Abstract :

Tin oxide (SnO_2) is an important wide-bandgap (3.6 eV) n-type semiconductor with a rutile structure which has received a great deal of attention over the past few years due to its high transparency in the visible part of the spectrum, structural and chemical stability. It has been investigated for advanced functional use such as solid state gas sensors, transparent conductors, oxidation catalysts and optoelectronic devices. In this work we report on the successful formation of SnO_2 nanostructures by using the Chemical vapour deposition process. As synthesized SnO_2 samples were characterized using scanning electron microscopy (SEM), X-ray powder diffraction (XRD), and nitrogen adsorption analysis (BET). X-ray analysis of the tin oxide nanomaterial showed a highly, pure crystalline material

Award :

yes

Level :

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Paper :

no

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