

Detection of hazardous gas using nanostructured ZnO Thick Film

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Nanostructured ZnO powders were prepared using ultrasonic atomization technique. The powders were characterized using X-ray diffraction, scanning electron microscopy, transmission electron microscopy and elemental analysis using EDAX. It was observed from XRD and TEM that the powder consisted of nanocrystallites with sizes less than 20 nm. It was confirmed from TEM analysis that the crystallites were nearly spherical in shape. Furthermore this nanostructured ZnO powder is used to prepared thick films using screen-printing techniques. Thick film is used as sensor to test the conventional gas and simulant of highly toxic chemical warfare agents. The thick film detector gives maximum response to Ammonia and DMMP.