
Fabrication of ZnO and carbon nanotube composites for gas sensor

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ZnO has been studied due to its chemical and thermal stability as a n-type semiconducting gas sensor. The ZnO have high sensitive to toxic and combustible gases. The single walled carbon nanotubes and ZnO composites were used for increasing surface area of ZnO. The single wall carbon nanotubes were synthesized on the silicon substrate which is covered by silicon dioxide by in-situ arc-discharge method. Zinc metal layer were deposited on the single wall carbon nanotubes by D.C. magnetron sputtering method. The oxidation of Zn metal was held at the oxygen gas ambients. The morphology of ZnO and single wall carbon nanotube composites were characterized by FESEM. The sensing property of ZnO and single wall carbon nanotube composites was measure at various gases, which were NO_x, NH₃, and H₂.