Nanocomposites and nanomaterials
ZINC OXIDE FILMS PREPARED BY SPRAY PYROLYSIS AND CHEMICAL METHOD

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Abstract.
Zinc oxide films were synthesis by hydrothermal method using from Zn(OH 3) +HMTA [1]. The layers were grown on glass and (001) Si substrates at temperature 70-90 o C. The layers obtained were 100 -500 nm thick depending on a time and rate of growing. The structure of the layers on glass were investigated using optical microscopy . The layers grown on Si substrate were studied by scanning electron microscopy. The composition of the layers was measured by EDX method on Teskan Vega 3 electron microscopy. Band gap measurements were carried out on UV-3100 spectrometer. The absorption spectra exhibit very clear absorption edge. Calculated from these spectra forbidden band is 3.28 eV . All pure ZnO layers had a high electrical resistivity . The samples show long-time fotoresponse on UV radiation. The room-temperature photoluminescence exhibits near-band-edge (3.2 eV) emission . A tentative deposition of layers with Cr doping will be presented .

1. Mingzhi Jiao, Duc Hoa Nguyen, Van Duy Nguyen, Van Hieu Nguyen, Klas Hjort and Hugo Nguyen **. Controlled Synthesis and Understanding of Growth Mechanism – Parameters for Atmospheric Pressure Hydrothermal Synthesis of Ultrathin Secondary ZnO Nanowires** // Journal of Scientific Research and Reports, ISSN: 2320-0227,Vol.: 9, Issue.: 5