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Zinc Oxide Thin Films Deposition by Spray Pyrolysis

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Abstract : Semiconductor photocatalysts such as ZnO has attracted much attention in recent years due to their various applications for the degradation of organic pollutants in water, air and in dye sensitized photovoltaic solar cell. In the present work, ZnO thin films were prepared by ultrasonic spray pyrolysis by using different precursors namely: Acetate, chloride and zinc nitrate in order to investigate their influence on ZnO photocatalytic activity. The films crystalline structure was studied by mean of X-ray diffraction measurements (XRD) and the films surface morphology by Scanning Electron Microscopy (SEM). The films optical properties were studied by mean of UV–visible spectroscopy. The prepared films were tested for the degradation of the red reactive dye largely used in textile industry. As a result, we found that the zinc nitrate is the best precursor to prepare ZnO thin films suitable for a good photocatalytic activity.

Keywords : precursor, thins films, spray pyrolysis, zinc oxide
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