

عنوان مقاله:

An illustration of photocatalytic properties of ZnO nanorods array films

محل انتشار:

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خلاصه مقاله:

ZnO nanorods array films were coated on a glass template through a two-step chemical process. First, a sol-gel spin coating method was used to produce a ZnO seed layer and after that, the ZnO nanorods arrays were grown on it through a low temperature aqueous method. Synthesized films were studied by scanning electron microscope (SEM) and X-ray diffractometer (XRD). X-ray diffraction results showed single crystalline wurtzite with a c-axis preferential (002) orientation. The deposited ZnO layers had c-axis orientation, and showed a sharp X-ray diffraction peak at $2\theta=34.4^\circ$ degrees, corresponding to the (002) of hexagonal ZnO crystal. The SEM images showed vertical orientation of rods, and the diameters of rods were under 100 nm. The photocatalytic degradation of XG6 azo dye in aqueous solutions was examined with a combination of ZnO nanorods array film as a photocatalyst and UV light. Results showed that the films are effective in decolorization of dye.

کلمات کلیدی:

Photocatalytic degradation, Zinc oxide, Nanorods, UV light

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