

## عنوان مقاله:

Fast UV detection by Cu-doped ZnO nanorod arrays chemically deposited on PET substrate

## محل انتشار:

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## نویسنده:

Reza Shabannia - Department of Physics, College of Science, Babol Noshirvani University of Technology, Babol, Iran

## خلاصه مقاله:

Well-aligned Cu-doped ZnO nanorods were successfully synthesized on polyethylene terephthalate (PET) substrate using chemical bath deposition method. The structural and optical properties of Cu-doped ZnO nanorods were investigated using X-ray diffraction (XRD), field-emission scanning electron microscopy (FESEM), energy dispersive X-ray spectroscopy (EDX) and photoluminescence (PL) spectroscopy. A metal-semiconductor-metal (MSM) UV photodetector was successfully fabricated using high-quality Cu-doped ZnO nanorods. The dark current and photocurrent of the MSM photodetector based on Cu doped ZnO nanorods were  $20.5$  and  $2.22$  at bias voltage of  $5$  V, respectively. Under bias voltage of  $5$  V, the responsivity of the UV photodetector was. The calculated photosensitivity of the UV photodetector was  $107.4$  at bias voltage of  $5$  V. The fast response time ( $191$  ms) and recovery time ( $261$  ms) of the fabricated UV photodetectors were achieved in UV turn-on/off switching measurements.

## کلمات کلیدی:

Chemical Bath Deposition, Crystal Structure, Cu-doped ZnO nanorods, Polyethylene terephthalate, UV photodetector

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1460396>

