

عنوان مقاله:

Enhanced structural, optical and antibacterial activities of Zn_2SnO_4 nanorods synthesized by Microwave assisted method

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خلاصه مقاله:

In this research, Zn_2SnO_4 nanorods were prepared and structural properties of the nanorods were characterized, developing of wide-range of the optical behavior of Zn_2SnO_4 nanorods and the antibacterial activity was also investigated using a microwave-assisted method. A zinc stannate (Zn_2SnO_4) nanorod was synthesized via facile microwave-assisted method using ammonia with cubic spinel structure. The crystallography and optical properties were studied using X-ray diffraction and photoluminescence spectroscopy. The morphology of the nanoparticles was observed using field emission scanning electron microscopy. The antibacterial effect of Zn_2SnO_4 nanoparticles tested against Gram-positive and Gram-negative pathogenic bacteria was investigated. The Zn_2SnO_4 nanorods showed the excellent antibacterial activity, the inhibition zone indicates the biocidal action of Zn_2SnO_4 nanorods. Here, we concluded that these materials were used as a bactericidal agent to prevent and control the spread and persistence of infectious diseases.

کلمات کلیدی:

Antibacterial activity, nanoparticles, Nanoarchitectonics, PL, Zinc Stannate

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