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Synthesis and characterization of silver nanoparticles from *Penicillium sps.*

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Abstract

Among the different methods employed for synthesis of nanoparticles, the biological method is most favourable and well established. Fungi provide many advantages in this context. In this study, extracellular synthesis of silver nanoparticles from *Penicillium sps.* was carried out. Nanoparticles were produced due to reduction of silver ions from silver nitrate, the formation of which was monitored by UV-visible spectrophotometry. The optimization of the biosynthesis procedure with respect to substrate concentration, pH, and salinity were carried out. The size distribution was determined using zetasizer Nano S90 and the dimensions were observed to be around 75nm by AFM and morphology was characterized by SEM. Then the synthesized silver nanoparticles are subjected to XRD analysis. The efficiency of activity of antibiotics is increased by several folds by conjugating the AgNPs with the different types of antibiotics by using zone of inhibition method.

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Preparation and Characterization of Electroless Ni-P-W Coated NanoCenosphere /ABS composite for EMI shielding Application

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Abstract

Due to consistent development of various types of communication technologies and the unfavourable impacts of electromagnetic radiations on the human body and electronic gadgets, it is necessary to decrease the Electromagnetic Interference (EMI) and its effect on therapeutic instrumental assembly and electronic equipment. In the present study, Electroless Ni-P-W Coated Nano Cenosphere (CNC)/Acrylonitrile butadiene styrene (ABS) polymer Composites have been proposed for their EMI shielding Effectiveness. The Process involves making the polymer composite conductive by uniformly dispersing Ni-P-W CNC in the polymer matrix and to increase wave absorption by incorporating sheet of the polymer-based composite in the device thereby increasing EMI shielding effectiveness. In the present study the EDX (Energy dispersive X-Ray) examination confirmed the presence of Ni-P-W on the coated NanoCenosphere. This was further, proved through Phase investigation by XRD (X-Ray Diffractometer).

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