

Electromagnetic interference shielding effectiveness of new conducting polymer composite.

ABSTRACT

Electrical conductivity and shielding effectiveness (SE) of conductive polymer composite of polypyrrole-chitosan (PPy-CHI) have been studied. It was shown that chitosan can improve electrical and thermal properties of polypyrrole. The applicability of PPy-CHI composite films to the electromagnetic wave shielding in the microwave frequency range from 8 to 12 GHz were investigated. The SE of the composite films had a strong dependence on chitosan content. The SE of the composite films was obtained by Simon formalism. Comparison of the experimental and theoretical values revealed good correspondence of the shielding of the composite films at high conductivity and frequency.

Keyword: Polypyrrole; Chitosan; Thermal diffu