

**ELECTRICAL AND SHIELDING PROPERTIES OF CONDUCTIVE POLYMER
COMPOSITE MATRIX WITH CHITOSAN**

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ABSTRACT

The polypyrrole-chitosan (PPy-CHI) composite films formed by electrochemical polymerization were studied by electrical and mechanical techniques. The electromagnetic interference shielding effectiveness (EMI SE) at the frequencies range from 8-12 GHz was also studied. It is shown by electrical conductivity measurement and DMA (dynamic mechanical analysis) that the enhanced conductivity and mechanical properties of the prepared films are due to the presence of CHI in the composite film. Most of the composite films had more than 98% shielding of electromagnetic energy. The EMI SE shown through reflection and absorption increased with the increase in conductivity and relative shielding efficiency by reflection and absorption can be easily controlled by the electrical conductivity.

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