

ABSTRACT

Title of the Thesis: “Development and Characterization of some nanocomposites for Applications in various Electrical, Optical, Electro-magnetic and Fields pertaining to Electronic Industry”

(A) Proposed Area/Theme of Research:

In this study we have focused for the development and characterization of some nanocomposite materials with improved electrical properties. Nanocomposites are prepared by doping several nanometals in the polymer matrix. A series of characterization techniques have been employed to those nanocomposites for investigating the enhancements of various electrical properties in terms their extensive application in electronic industry to mitigate the global crisis of energy harvesting and storage devices.

(B) Statement of Purpose Regarding Research Objective:

In order to strengthen the future sustainability towards energy crunch, emphasis has been given to develop new materials having a superior capability of energy storage and have wide application in electronic industry.

In this work, we have made our exploration for preparing metal (Cu, Co, Cr, Mn, etc.) oxide based nanocomposites through cost effective, simple and modified chemical synthesis procedure. The characterization and measurements of these materials have been performed using various physical techniques to confirm their enhanced capability in terms of electrical properties with the objective for its wide range application in charge storage device, dielectric applications as separators, electromagnetic interference shielding and other applications pertaining to electronic industry.

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