

Study on Complex Impedance Properties of Polyvinyl alcohol (PVA)-Bismuth ferrite (BiFeO_3)-Graphite Nanopowders (GNP) Composites

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Abstract

In this study, the composites comprising polyvinyl alcohol (PVA), bismuth ferrite (BFO) particles and graphite nanopowder were prepared by solution casting technique. The frequency dependence of impedance properties was analyzed by using an impedance analyzer in a frequency range from 10^2 - 10^6 Hz at room temperature. The real and imaginary parts of the impedance properties exhibited the semicircle in the complex planes. The complex impedance analysis of the PVA-BFO-GNP composites shows the presence of bulk and grain effect. The Nyquist plot suggested the presence of only bulk effects of the resultant composite systems.

Key words: Polyvinyl alcohol, Composites, Complex Impedance