Influence of Carbon Black and Graphite Powder on Electrical Properties of Carbon Black/Epoxy and Graphite/Epoxy Composites

Martins, S. A. (1); Reis, J. M.L. (2); Costa Mattos, H. S. (2);
(1) UEZO; (2) UFF

Resumo:
There is a growing demand for polymeric composite materials, mainly, in Industrial applications. For instance, bipolar plates, for polymer electrolyte fuel cell, in automobile applications. This kind of composite can replace with lower cost and greater efficiency metallic component. The basic requirement is that the composite must possess adequate electrical and mechanical properties for the particular application. Electrical conductivity tests were performed in different composites. The goal of the present paper is to research and relate the Electrical properties of graphite/epoxy and Carbon black/epoxy composites with the weight percentages of graphite powder and carbon Black, for application as bipolar plates. This study has demonstrated the potential of the use of both composite, epoxy/graphite and Carbon Black composites and from the initial study was demonstrated that is possible to obtain a semiconductor behavior with these kind of composites.