Abstract

The present work aims at preparing glass-fiber reinforced epoxy resin composite modified with reactive end-capped carboxylic imide oligomer. The carboxylic imide 2,2-bis[4-(4-aminophenoxy)phenyl propane (CIBAPP) oligomer was synthesized via two-step polycondensation of 2,2-bis[4-(4-aminophenoxy)phenyl propane (BAPP) diamine and trimellitic anhydride (TMA), then the oligomer was characterized by FTIR spectrum and solubility test. The oligomer was used as a blending component for the modification of the epoxy resin system for fabricating glass-fiber reinforced laminate. The resultant composite had good properties such as the dielectric strength of 197kV/cm, volume resistance of 2.1×1015Ω•cm, longitudinal and transverse stress of 686MPa and 631MPa, respectively, water absorption rate of 0.18% and surface energy of 43.6mJ/m2 .