Abstract

Iron-Epoxy composite samples were prepared by added different weight percentages (0, 5, 10, 15, and 20 wt %) from Iron particles in the range of (30-40μm) as a particle size. The contents were mixed carefully, and placed a circular dies with a diameter of 2.5 cm. Different mechanical tests (Shore D Hardness, Tensile strength, and Impact strength) were carried out for all samples. The samples were immersed in water for ten weeks, and after two weeks the samples were take-out and drying to conducting all mechanical tests were repeated for all samples. The hardness values increased when the Iron particle concentration increased while the Impact strength is not affected by the increasing of Iron particles concentration. The tensile strength results reveal that the tensile strength and the strain values of composite samples decreases when the Iron particles concentration increase. After conducted immersion processes the results of hardness are reduced wears the results of tensile strength and the impact strength are increased.