

Degradation of the Mechanical Properties of the Polypropylene Talc Nanocomposite in Chemical Environment

Authors : Ahmed Ouadah Bouakkaz, Mohamed Elmeguenni, Bel Abbas Bachir Bouiadjra, Mohamed Belhouari, Abdulmohsen Albedah

Abstract : In this study, the effect of the chemical environment on the mechanical properties of the polypropylene-talc composite was analyzed. The talc proportion was varied in order to highlight the combined effects of time of immersion in the chemical environment 'benzene' and talc concentration on the mechanical properties of the composite. Tensile test was carried out to evaluate the mechanical properties of PP-talc composite and to analyze the effect of the immersion time on the variation of these properties. The obtained results show that increasing the time of immersion has a very negative effect on the mechanical strength of the PP-talc composite, but this effect can be significantly reduced by the augmentation of the talc proportion.

Keywords : polypropylene (PP), talc, nanocomposite, degradation

Conference Title : ICERDC 2017 : International Conference on Earthquake Resistant Design and Construction

Conference Location : Barcelona, Spain

Conference Dates : December 14-15, 2017