P-3-411

PREPARATION, MECHANICAL PROPERTIES AND MOISTURE ABSORPTION OF URETHANE ACRYLATE RESIN/CLAY NANOCOMPOSITES

R. Gashtil [a], M. Esfandeh [a,*], S. M. Mirabedini[a], A. M. Rezadoust[a], M. Behzadnasab[a]

[a] *Composites Department, Iran Polymer and Petrochemical Institute, P. O. Box 14965/119, Tehran, Iran*

**Corresponding author: esfandeh@yahoo.co.uk*

Urethane-Acrylate resins (UAr) are among the thermoset resins which are widely used in fabrication of composites for various applications due to their low viscosity and high thermal resistance. In this work, nano composites based on Modar resin and nano clay were produced via sonication as well as hemogenizing as high shear mixers. The dispersion status of nano clay was studied by X-ray Diffraction (XRD). The results which were obtained from XRD were proved by evaluating the change in resin viscosity. XRD patterns revealed that intercalation and partially exfoliation structure was observed in the 5, 7 and 10 wt % nano clay composites, whereas fully exfoliation was achieved in the 0.5, 1.5 and 3 wt % nano clay composites. In addition the mechanical properties and water absorption of nano composites in samples with different clay concentration were investigated. The results showed an increase in tensile and flexural modulus with increase in clay lauding while water absorption was decrease.