以熔融插層法製備PMMA/蒙脫土奈米複合材料

In this research, an inorgainic-organic nanocomposite material(montmorillonite -PMMA) was prepared by melt intercalation method using a mixer. Montmorillonite was cation exchanged with intercalation agents (i.e, octadecylammonium or 11-aminoundecanoic acid) to form expanded montmorillonite which was then melt intercalated by PMMA in different process conditions, such as, mixing temperature, montmorillonite -PMMA ratio, and mixing time. The loadings of the clay were 1, 5 and 9wt﹪. Expansion of the inter-lamellar space by both intercalation agent and PMMA will be examined by XRD and TEM. The results indicated a maximum increase from 1.42nm before intercalation to 4.09nm in the composite occurring at montmorillonite (OA):PMMA = 5:95. In addition, tests will be carried out about the thermal property. For example, the thermal decomposites temperature of the nanocomposites were measured with TGA.