FUNCTIONALIZATION OF INTERCALED MONTMORILLONITE: SYNTHESIS AND CHARACTERIZATION OF NANOCOMPOSITE MATERIALS

B. Djellouli, A. Melouki and D. Benachour

Institut de chimie Industrielle, Université de Sétif, 19000, Sétif, Algérie
E-mail: Chimie@Elhidhab.Cerist.Dz

ABSTRACT

One of the major interest of micelle-templated silica (MTS) concerns the excellent properties as support of considerably different catalytic functions. The functionalization of MTS materials by silanation of their surface by grafting catalytic phases provide new opportunities in investigation in the field of new materials.

In the present work, polystyrene-clay mineral nanocomposites were prepared by direct polymerization onto basal space of intercaled montmorillonite and grafted by 3-(trimethyloxysilyl)propylmethacrylate (TMSPM). The predominant syndiotactic polystyrene samples obtained, are used in the assignment of stereochemical structure of polymer. The assignment was carried out using ^{13}C NMR.

The modification of these nanocomposite materials by thermal treatment preserves the structural properties of interlayers montmorillonite. It is shown that the control of the molecular weight of the encapsulated polymer offer a specific textural properties.