

Effect of the Synthesis Method on Thermal Stabilities of Poly (N-Butyl Methacrylate-Co-Acrylic Acid)/ Bentonite Systems.

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Abstract:

Poly (n-butyl methacrylate) (PBMA) has been frequently used in many biomedical applications such as coatings, bone cements etc... Because of its low glass transition temperature (T_g), it was rarely homopolymerized but generally copolymerized with small amounts of other monomers that give rise to copolymers of higher T_g's.

This contribution focuses in its first part on the elaboration of hybrid materials following two different methods, the first is based on various poly (n-butyl methacrylate-co-acrylic acid) BMAA, prepared by bulk free radical polymerization and pure or organically modified Maghnia bentonite (originated from Algeria) via solution intercalation method and the second in situ bulk free radical polymerization.

The prepared hybrid materials were then characterized by FTIR spectroscopy, X-Ray Diffraction, TGA and DSC.

The effects of the synthesis method on thermal stability and the morphology of the elaborated materials were investigated. Some of the obtained results are presented in this communication.

Keywords: Insitu polymerization, n-butyl methacrylate, acrylic acid, bentonite, nanocomposites, intercalation, exfoliation.