

A short review on the effect of surfactants on the mechanico-thermal properties of polymer nanocomposites

ABSTRACT

The recent growth of nanotechnology consciousness has enhanced the attention of researchers on the utilization of polymer nanocomposites. Nanocomposites have widely been made by using synthetic, natural, biosynthetic, and synthetic biodegradable polymers with nanofillers. Nanofillers are normally modified with surfactants for increasing the mechanico-thermal properties of the nanocomposites. In this short review, two types of polymer nanocomposites modified by surfactants are classified, specifically surfactant-modified inorganic nanofiller/polymer nanocomposites and surfactant-modified organic nanofiller/polymer nanocomposites. Moreover, three types of surfactants, specifically non-ionic, anionic, and cationic surfactants that are frequently used to modify the nanofillers of polymer nanocomposites are also described. The effect of surfactants on mechanico-thermal properties of the nanocomposites is shortly reviewed. This review will capture the interest of polymer composite researchers and encourage the further enhancement of new theories in this research field.

Keyword: Surfactant; Mechanico-thermal; Polymer; Nanocomposites