

Processing of Polymer-based Nanocomposites: Introduction

A brief overview of layered silicates and polymer/layered silicate nanocomposite formation

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ABSTRACT:

Layered silicate-containing polymer nanocomposites attract great interest in today's advanced composite materials research because it is possible to achieve impressive property improvements when compared with neat polymers or conventional filler-filled composites. In its pristine form layered silicate is hydrophilic and not compatible with hydrophobic polymer matrices. To make layered silicate compatible with hydrophobic polymer matrix, one must convert hydrophilic surface to an organophilic one. This chapter briefly summarizes the structure and properties of pristine and organically modified layered silicates. This chapter also provides overview of layered silicate-containing polymer nanocomposites formation.