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Evaluation of Thermal and Mechanical properties of Styrene-Butadiene Rubber-nanocomposite by using Tin oxide as filler

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Abstract

The Copolymer SBR- nano tin oxide composite was synthesized by emulsion polymerization technique. The nanocomposite SBR- nano tin oxide composition was characterized by elemental analysis and FTIR spectroscopy. Non-isothermal thermogravimetric investigations have been completed to decide their method of deterioration and comparative thermal strength. The thermal decay conduct of composites was examined by utilizing thermogravimetric techniques in air climate at a warming rate of 10^0C min^{-1}. FC and SW strategies were utilized to ascertain the active parameters, for example, thermal activation energy (Ea) and the order of reaction (n). The energy of activation decided with the assistance of this technique was in great concurrence with one another.

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Keywords: SBR; Nanocomposite; Emulsion polymerization method; Nano tin oxide

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