

عنوان مقاله:

On the effect of clay exfoliation on properties of high-density polyethylene/ montmorillonite composites

محل انتشار:

دوازدهمین سمینار بین المللی علوم و تکنولوژی پلیمر (سال: 1395)

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نویسندگان:

Mohammad Reza Jozaghkar - Iran Polymer and Petrochemical Institute

Hamid Reza Parsimehr - Iran Polymer and Petrochemical Institute

خلاصه مقاله:

In this study influence of clay exfoliation on the physical properties of montmorillonite/high-density polyethylene was investigated. The XRD result showed that clay platelet exfoliation in PE-g-MAN nanocomposites leads to significant reduction of degree of crystallinity and increasing in polymer crystallization rates. Studies of nonisothermal crystallization kinetics suggested that the exfoliated clay promotes heterogeneous nucleation and twodimensional crystallite growth. Nanocomposite system exhibits increase in the rheological properties and Young s modulus. Conversely, the nanoscale dimensions of the dispersed clay platelets in the nanocomposites led to significantly increased viscous and elastic properties and improved stiffness due to high surface area between the polymer matrix and the exfoliated clay, which resulted in enhanced phase adhesion

کلمات کلیدی:

nanocomposite- high density polyethylene- clay- crystallization behavior- rheological properties

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