

Название публикации:

Composite Materials Based on Polylactide and Poly-3-hydroxybutyrate "Green" Polymers

Авторы:

Tertyshnaya, YV [1] ; Podzorova, MV [2]

[1] Russian Acad Sci, Emanuel Inst Biochem Phys, Moscow 119334, Russia

[2] Plekhanov Russian Univ Econ, Moscow 115093, Russia

Сведения об издании:

RUSSIAN JOURNAL OF APPLIED CHEMISTRY

Том: 91 Выпуск: 3 Стр.: 417-423

DOI: 10.1134/S1070427218030126

Опубликовано: MAR 2018

Тип документа: Article

Аннотация:

Blends of polylactide with low-density polyethylene and of poly-3-hydroxybutyrate with synthetic ethylene-propylene rubber with the component weight ratios of 30 : 70, 50 : 50, and 70 : 30 were prepared and studied in comparison with the pure components. The thermal characteristics of these blends were determined by differential scanning calorimetry. The melting point of polyhydroxybutyrate and polylactide in the blends changes insignificantly, by 1-2A degrees C. The dependence of the morphology on the composition for both polymer systems was examined by scanning electron microscopy. The physicomechanical properties of the samples are determined by the major phase. The blends undergo biodegradation in soil at 20 +/- 3A degrees D<inverted exclamationation>. The process occurs faster for blends of polyhydroxybutyrate with ethylene-propylene rubber of all the compositions studied.

Ключевые слова:

Poly(lactic acid); blends; morphology; poly(3-hydroxybutyrate); biodegradation; degradation; films