Название публикации:

Thermooxidation and Biodegradation of Nonwoven Biopolymer Fibrous Materials

Авторы:

Chizhov, A.S.a, Ol'khov, A.A.b,c, Monakhova, T.V.c, Shibryaeva, L.S.c, Iordanskii, A.L.d

a. Moscow Technological University, Moscow, Russian Federation
b. Plekhanov Russian University of Economics, Moscow, Russian Federation
c. Emanuel Institute of Biochemical Physics, Moscow, Russian Federation
d. Semenov Institute of Chemical Physics, Moscow, Russian Federation

Сведения об издании:

Polymer Science - Series D
Volume 11, Issue 3, 1 July 2018, Pages 339-343

Аннотация:

This paper studies water absorption and processes of thermooxidative destruction and biodegradation of film and nonwoven fibrous materials based on the natural polymers polylactide and polyhydroxybutyrate. Nonwoven fibrous materials were obtained by electrospinning, and film fibrous materials were obtained by watering onto the glass surface. It was determined that fibrous materials have high water absorption and a high oxidation rate in comparison with film materials, which significantly accelerates (by about five times) the processes of biodegradation under environmental conditions. Fibrous nonwoven material from biodegradable polymers is an important development as a disposable soil mulching material and a covering material that has a service life of less than 1.5 months under natural conditions.

Ключевые слова:

Biodegradation, covering material, electrospinning, mulching, nonwoven fibrous material, polyhydroxybutyrate, polylactide, thermooxidation, Biodegradable polymers, Biodegradation, Biological materials, Electrospinning, Natural polymers, Nonwoven fabrics, Polyesters, Thermooxidation, Water absorption, Covering material, Fibrous material, mulching, Poly lactide, Polyhydroxybutyrate, Weaving