

Название публикации:

Oxidation of polypropylene-graphite nanocomposites (Book Chapter)

Авторы:

Monakhovaa, T.V.a, Nedorezova, P.M.b, Pol'Shchikov, S.V.b, Popova, A.A.c, Margolin, A.L.a, Gorenberg, A.Y.b

- a) Institute of Biochemical Physics, Russian Academy of Sciences, Moscow, Russian Federation
- b) Semenov Institute of Chemical Physics, Russian Academy of Sciences, Moscow, Russian Federation
- c) Plekhanov Russian University of Economics, Moscow, Russian Federation

Наименование журнала:

Physical Chemistry for the Chemical and Biochemical Sciences
30 March 2016, Pages 145-157

Аннотация:

The reactivity of isotactic polypropylene (PP)-fine-grained graphite nanocomposites in the reactions of thermooxidation and chemiluminescence is studied. It is demonstrated that, even at low (less than 1%) concentrations, graphite retards the oxidation of polypropylene and speeds up the termination of PP peroxy macroradicals. It has been concluded that the mechanism of the protective action of graphite in the oxidation of PP involves inhibition due to the interaction of graphite nanoparticles with peroxy PP macroradicals. The average size of the reactive graphite particles was estimated from kinetic data on the reaction of graphite with radicals. © 2016 by Apple Academic Press, Inc.

Ключевые слова:

Decay of radicals, Fullerene, Graphene, Graphite, Nanocomposite, Oxidation, Polypropylene