

1. Record Nr.	UNINA9911006578703321
Titolo	Thermally stable and flame retardant polymer nanocomposites // edited by Vikas Mittal
Pubbl/distr/stampa	Cambridge ; ; New York, : Cambridge University Press, 2011
ISBN	1-139-11051-9 1-139-12445-5 1-107-21377-0 1-283-29594-6 1-139-12278-9 9786613295941 1-139-11704-1 1-139-12770-5 1-139-11268-6 0-511-84241-4 1-139-11487-5
Descrizione fisica	1 online resource (xviii, 387 pages) : digital, PDF file(s)
Classificazione	TEC021000
Disciplina	677/.689
Soggetti	Fire resistant polymers Nanocomposites (Materials)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 05 Oct 2015).
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Part I. Thermal Stability: 1. Polymer nanocomposites: layered silicates, surface modifications and thermal stability / V. Mittal -- 2. Mechanism of thermal degradation of layered silicates modified with ammonium and other thermally stable salts / K. Pielichowski, A. Leszczynska and J. Njuguna -- 3. Thermal stability of PS nanocomposites from improved thermally stable organoclays / Musa R. Kamal and Jorge Uribe-Calderon -- 4. PET nanocomposites using nanoclays modified with thermally stable surfactants / Evangelos Manias, Matthew J. Heidecker, Hiroyoshi Nakajima, Marius C. Costache and Charles A. Wilkie -- 5. Thermally stable polyimide/BAPS modified clay nanocomposites / Joshua U. Otaigbe and Vladimir E. Yudin -- 6. Clays modified with thermally

stable ionic liquids with applications in polyolefin and polylactic acid nanocomposites / Marino Xanthos and Jin Uk Ha -- Part II. Flame Retardancy: 7. Introduction to flame retardancy of polymer clay nanocomposites / Tie Lan and Gunter Beyer -- 8. Flame retardant nanocomposites with polymer blends / J. Zhang, M.A. Delichatsios, A. Fina, G. Camino, F. Samyn, S. Bourbigot and S. Nazare -- 9. Flame retardancy of polyamide/clay nanocomposites / Yuan Hu, Lei Song and Qilong Tai -- 10. Self-extinguishing polymer clay nanocomposites / Miriam H. Rafailovich and Seongchan Pack -- 11. Flame retardant polymer nanocomposites with fullerenes as filler / Zhengping Fang and Pingan Song -- 12. Flame retardant polymer nanocomposites with alumina as filler / Jose-Marie Lopez Cuesta and Abdelghani Laachachi -- 13. Polymer/layered double hydroxide flame retardant nanocomposites / Baojun Qu and Longzhen Qiu -- 14. Flame retardant SBS-clay nanocomposites / Mauro Comes-Franchini, Massimo Messori, Guido Ori and Cristina Siligardi.

Sommario/riassunto

Polymer nanocomposites have revolutionised material performance, most notably in the plastics, automotive and aerospace industries. However, in order to be commercially viable, many of these materials must withstand high temperatures. In this book, leaders in the field outline the mechanisms behind the generation of suitable polymer systems, pulling together recent research to provide a unified and up-to-date assessment of recent technological advancements. The text is divided into two clear sections, introducing the reader to the two most important requirements for this material type: thermal stability and flame retardancy. Special attention is paid to practical examples, walking the reader through the numerous commercial applications of thermally stable and flame retardant nanocomposites. With a strong focus on placing theory within commercial context, this unique volume will appeal to practitioners as well as researchers.
