

# Polymer nanocomposites

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Polymer nanocomposites, Y. W. Mai, Institute of Materials, Minerals, and Mining, CRC Press, 2006, 1855739690, 9781855739697, 594 pages. Polymer nanocomposites are polymer matrices reinforced with nano-scale fillers. This new class of composite materials has shown enhanced optical, electrical and dielectric properties. This important book begins by examining the characteristics of the main types of polymer nanocomposites and then reviews their diverse applications. Part one focuses on polymer/nanoparticle composites, their synthesis, optical properties and electrical conductivity. Part two describes the electrical, dielectric and thermal behaviour of polymer/nanoplatelet composites, whilst polymer/nanotube composites are the subject of Part three. The processing and industrial applications of these nanocomposite materials are discussed in Part four, including uses in fuel cells, bioimaging and sensors as well as the manufacture and applications of electrospun polymer nanocomposite fibers, nanostructured transition metal oxides, clay nanofiller/epoxy nanocomposites, hybrid epoxy-silica-rubber nanocomposites and other rubber-based nanocomposites. Polymer nanocomposites: physical properties and applications is a valuable reference tool for both the research community and industry professionals wanting to learn about these materials and their applications in such areas as fuel cell, sensor and biomedical technology..

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Structure and Properties of Particulate-filled Polymer Composites The Fractal Analysis, G. V. Kozlov, Y. G. Yanovskii, Gennadii Efremovich Zaikov, Apr 1, 2010, , 282 pages. The interest in polymer composites research is due to their enlarged application. Filling with hard particles gives to polymers a number of desirable properties: increases ....

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Polymer Blends and Polymer Composites Proceedings of the International Workshop on Polymer Blends and Polymer Composites, 8th-11th July 1997, Sydney, Australia, Lin Ye, Y. W. Mai, 1998, Technology & Engineering, 230 pages. In recent years significant progress has been made in many areas of polymer blend and polymer matrix composite science and technology. This volume comprises a selection of ....

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Physical Properties and Applications of Polymer Nanocomposites Physical Properties and Applications, Sie Chin Tjong, Y. W. Mai, Oct 28, 2010, , 912 pages. Polymer nanocomposites are polymer matrices reinforced with nano-scale fillers. Understanding the physical properties of polymer nanocomposites is a key factor in gaining wider ....

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Science and technology of nanostructured materials , B. K. Rao, 2001, Technology & Engineering, 266 pages. This volume contains papers presented at the International Conference on Science and Technology of Nanostructured Materials held in India during 4 to 8 January 2001 which aimed ....

Particulate-Filled Polymer Composites , R. N. Rethon, Jan 1, 2003, Science, 544 pages. This is the second edition of this book. This book brings together many scientific and technical disciplines, including mineralogy, crystallography, precipitation, powder ....

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