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Nota di contenuto	Cover; Title Page; Copyright; Contents; Preface; List of Contributors; Chapter 1 Surface Modification of Nanomaterials for Application in Polymer Nanocomposites: An Overview; 1.1 Introduction; 1.2 Types of Nanomaterials; 1.2.1 Zero-Dimensional (0D) Nanomaterial; 1.2.2 One-Dimensional (1D) Nanomaterials; 1.2.3 Two-Dimensional (2D) Nanomaterials; 1.2.4 Three-Dimensional (3D) Nanomaterials; 1.3 Synthetic Methodologies of Nanomaterials; 1.4 Surface Modification of Nanomaterials and Their Advantages in Polymer Composites; 1.4.1 Silane Grafting; 1.4.2 Polymer Grafting 1.4.3 Surface Modification of Nanomaterials Using Surfactants1.5 Method for the Incorporation of Nanomaterials in a Polymer Matrix; 1.5.1 Sol-Gel Method; 1.5.2 Blending Method; 1.5.2.1 Solution Blending Method; 1.5.2.2 Melt Blending; 1.5.3 In Situ Polymerization; 1.6 Influence of Surface-Modified Nanomaterials on the Properties of Polymer Nanocomposites; 1.6.1 Thermal and Flame-Retardant Properties; 1.6.2 Mechanical Properties; 1.6.3 Electrical Properties; 1.7 Conclusion; Abbreviations; References; Chapter 2 Surface Modification of Boron Carbide for Improved Adhesion to an Epoxy Matrix 2.1 Introduction2.2 Powder Synthesis; 2.3 Ceramic Components; 2.4 Composites; 2.5 Native Surface Chemistry; 2.6 Silane Surface

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5.4.1 Modification by Coprecipitation from Homogeneous Solution

Sommario/riassunto

A review of the various methodologies for the surface treatment of different types of inorganic spherical and fibrous fillers, describing ball milling, cationic polymerization, vapor phase grafting, plasma treatment and UV irradiation in detail. In addition, the book connects the resulting composite properties to the modified filler surface properties, thus allowing for a purposeful, application-oriented composite design.