

1. Record Nr.	UNINA9911020474703321
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Titolo	Two-Dimensional Nanomaterials Based Polymer Nanocomposites : Processing, Properties and Applications
Pubbl/distr/stampa	Newark : , : John Wiley & Sons, Incorporated, , 2024 ©2024
ISBN	9781119905110 1119905117 9781119905103 1119905109
Edizione	[1st ed.]
Descrizione fisica	1 online resource (828 pages)
Altri autori (Persone)	DeshmukhKalim HussainChaudhery Mustansar
Disciplina	620.115
Soggetti	Nanostructured materials Nanotechnology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Cover -- Series Page -- Title Page -- Copyright Page -- Contents -- Preface -- Part 1: Classifications, Synthesis Methods and Surface Modification of Two Dimensional Nanomaterials -- Chapter 1 Introduction to Two-Dimensional Nanomaterials: Discovery, Types and Classifications, Structure, Unique Properties, and Applications -- 1.1 Introduction -- 1.2 Types of Two-Dimensional (2D) Nanomaterials or Particles -- 1.2.1 Layered van der Waals Solids -- 1.2.2 Layered Ionic Solids -- 1.2.3 Surface-Assisted Non-Layered Solids -- 1.3 Examples of Two-Dimensional (2D) Nanomaterials -- 1.3.1 Graphene -- 1.3.2 Hexagonal Boron Nitride (h-BN) -- 1.3.3 Transition Metal Dichalcogenides (TMDCs) -- 1.3.4 Transition Metal Oxides (TMOs) -- 1.3.5 Black Phosphorus -- 1.3.6 Graphitic Carbon Nitride -- 1.3.7 MXenes -- 1.3.8 Silicene and Germanene -- 1.3.9 Metal–Organic Frameworks (MOFs) -- 1.3.10 Covalent Organic Frameworks -- 1.3.11 Layered Double Hydroxides -- 1.3.12 Layered Nanoclays -- 1.4 Structural Modifications in 2D Nanomaterials -- 1.4.1 Defects -- 1.4.1.1

Sommario/riassunto

This book, edited by Mayank Pandey, Kalim Deshmukh, and Chaudhery Mustansar Hussain, provides a comprehensive exploration of polymer processing, properties, and applications. It delves into the synthesis methods and surface modification of two-dimensional nanomaterials, examining their unique structures and diverse applications. The text covers various types of 2D nanomaterials, including graphene, hexagonal boron nitride, and transition metal compounds, among others. It addresses their electrical, thermal, mechanical, and optical properties, as well as their potential applications in fields such as energy storage, biomedical engineering, and environmental sensing. The book is intended for researchers, scientists, and advanced students interested in materials science and nanotechnology.
