1. Record Nr. UNINA9911022166403321

Autore	Khanna Virat
Titolo	Carbon-Based Nanocomposites for Sustainable Applications, Volume I : Fundamentals and Material Innovations / / edited by Virat Khanna
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2025
ISBN	9783031953064 9783031953057
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (421 pages)
Collana	Lecture Notes in Nanoscale Science and Technology, , 2195-2167 ; ; 38
Disciplina	530.41 620.115
Soggetti	Nanoscience Materials Carbon Chemistry Condensed matter Sustainability Fuel cells Renewable energy sources Nanophysics Carbon Materials Two-dimensional Materials Fuel Cells Renewable Energy
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1 Fabrication Techniques of Carbonaceous Nanomaterial Based Nanocomposites -- 2 Graphene-Based Nanocomposites -- 3 Carbon Nanotubes-Based Nanocomposites: Materials System, Applications and Processing -- 4 Carbon Nanofiber-Based Nanocomposites -- 5 Graphitic Carbon Nitride-Based Nanocomposites -- 6 Carbonized Biomass/Polymer Nanofibers for Sustainable Applications -- 7 Carbon-Based Nanocomposites for Lightweight Composites -- 8 Carbon Nanocomposites for Stealth Technology: Innovations and Perspectives

-- 9 Carbon-Based Nanocomposites for 3D Printing -- 10 Applications and Implications of Exploring Carbon-Based Nanocomposites in Sustainable Cities Development -- 11 Carbon-Based Nanocomposites for Wearable Electronics -- 12 The Future of Carbon-Based Nanocomposites in Sustainable Applications -- 13 Challenges and Limitations in the Application of Carbon-Based Nanocomposites.

Sommario/riassunto

This book presents readers with a comprehensive discussion on carbon-based nanocomposites and their critical role in addressing global sustainability challenges. By bridging the gap between materials science and real-world applications, this book serves as an invaluable resource for academic researchers, engineers, industry professionals, and advanced students in fields such as materials science, engineering, and environmental studies dealing with the unique properties of carbon-based nanomaterials. It provides a detailed view of carbon-based nanocomposites, offering both foundational knowledge and insights into cutting-edge applications that have the potential to drive sustainable progress in the coming years. This Volume One, the first of three, covers the fundamental properties of different types of carbon-based nanocomposites such as graphene, carbon nanotubes, and carbon fibers, as well as exploring various synthesis and characterization techniques. In addition, it describes innovative developments in carbon-based nanocomposites for various applications across renewable energy, environmental sustainability, and advanced manufacturing. .