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Nota di contenuto	Carbon-based smart nanomaterials -- Graphene-based nanomaterial: Synthesis, characterization and applications -- Synthesis, characterization and applications of Carbon nanotubes -- Functionalization of carbonbased nanoparticles for various application -- Smart carbon nanomaterials and their effect on the antioxidant system of plants -- Role of carbon nanomaterials in prevention of Plant disease -- Current status of Nanocarbon Fertilizer in agriculture production -- Recent Research on use of carbon nanomaterials in plant’s Growth and development -- Role of carbon nanotubes as sorbent for herbicide sensing and remediation -- Role of Carbon nanotubes for herbicide detection and remediation -- Carbon nanotube interactions with rhizosphere microbial communities -- Drug Delivery Using Carbon Nanomaterials -- Biomedical applications of 1D and 2D carbon nanomaterials -- Recent update of Graphene Nanomaterials for Biomedical Applications -- Application of carbon nanomaterials for Drug and gene delivery potentials -- Functionalization of Carbon

Nanodots and their Applications in Biomedicine -- Functionalized carbon nanotubes' biomedical applications and toxicological implications -- Role of Carbon nanomaterial in air pollution remediation -- Carbon nanomaterial for oil spill clean-up -- Removal of heavy metal from water using graphene/ activated graphene -- Environmental toxicity of engineered carbon nanoparticles -- Role of carbon nanomaterials in energy generation, storage and conversion.

Sommario/riassunto

Carbon nanomaterials have several applications, which is driving up scientific research into them. The book showcases the most recent advancements and research discoveries rather than just providing an overview. Each chapter offers authoritative insights into the ever-changing field of carbon-based nanomaterials, as written by top authorities in their respective domains. The book stands out for its persistent focus on real-world application. It is devoted to practical applications and is divided into four sections. The intriguing promise of carbon nanomaterials, their synthesis, and their possible uses set the stage for the adventure. Subsequently, the emphasis shifts to agriculture, where nanomaterials have been shown to improve plant health, fend against illnesses, promote growth and development, and even help detect and remove herbicides. The biomedical part explores the potential toxicological ramifications of these materials while introducing the reader to their ground-breaking role in drug delivery, tissue engineering, and the fight against fungal diseases. Overall, the book provides valuable insights and serves as a comprehensive resource for researchers and scientists across various interdisciplinary subjects.