

Sustainable Green Nanomaterials

Synthesis, Characterization, and Engineering Applications

Green nanomaterials are in great demand as natural substitutes to conventional chemical-based, eco-toxic materials in fabricating numerous eco-friendly products that are biodegradable and biocompatible and eco-benign for a plethora of applications in biomedicine, textiles, agriculture, and many other industries. This new book, Sustainable Green Nanomaterials: Synthesis, Characterization, and Engineering Applications, presents an overview of fabrication, testing, and utility of green nanomaterials in sustainable agriculture, smart drug delivery, wastewater treatment, and healthcare. The first section of the book is devoted to the synthesis, characterization, and general applications of green nanomaterials, looking specifically at electrospun polymer nanofibers and carbon quantum dots. The book goes on to introduce applications of green nanomaterials, such as green polymeric nanocomposites, green nanocarriers, etc., in crucial areas such as agriculture, healthcare, and wastewater treatment. It also looks at the use of artificial intelligence and machine learning for removal of heavy metals from water using green nanomaterials. A section is devoted to the applications of green nanomaterials in drug delivery for targeted drug delivery. It also considers the use of nanotools for delivery of anticancer drugs. This volume will be a valuable resource for academicians, research scholars, and others in the scientific community who are investing their time and energy in designing and developing novel, state-of-the-art and sustainable nanomaterials in tandem with meeting the objectives of sustainable development goals.

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