

1. Record Nr.	UNINA9911018647903321
Autore	Alguno Arnold C
Titolo	Gold Nanoparticles : Green Synthesis, Characterization, and Multifaceted Applications // by Arnold C. Alguno, Rey Y. Capangpangan, Gerard G. Dumancas, Arnold A. Lubguban, Roberto M. Malaluan, Rolan Brian P. Rivera
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2025
ISBN	981-9665-65-5
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (146 pages)
Collana	Engineering Materials, , 1868-1212
Altri autori (Persone)	CapangpanganRey Y DumancasGerard G LubgubanArnold A MalaluanRoberto M RiveraRolan Brian P
Disciplina	530.41 620.115
Soggetti	Nanoscience Nanoparticles Nanotechnology Materials Detectors Composite materials Nanophotonics Plasmonics Nanophysics Nanoengineering Sensors and biosensors Composites Nanophotonics and Plasmonics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1. Synthesis of Gold Nanoparticles -- Chapter 2. Characterization of Gold Nanoparticles -- Chapter 3. Green Synthesis

of AuNPs Using Plant Extracts -- Chapter 4. Green Synthesis Using Microorganisms -- Chapter 5. Properties of Gold Nanoparticles and Their Functionalization -- Chapter 6. Applications of Gold Nanoparticles -- Chapter 7. Challenges and Future Perspectives in Gold Nanoparticle Research -- Chapter 8. Challenges and Future Perspectives in Gold Nanoparticle Research -- Chapter 9. Challenges, Innovations, and Recommendations -- Chapter 10. Conclusion.

Sommario/riassunto

This book highlights an in-depth exploration of gold nanoparticles (AuNPs), emphasizing sustainable, "green" synthesis methods that address both scientific and environmental challenges. This comprehensive guide is designed for researchers, students, and professionals in nanotechnology, detailing the synthesis, characterization, and versatile applications of AuNPs across fields such as biomedicine, environmental science, agriculture, and industry. Key topics include innovative synthesis approaches, from chemical and physical to plant- and microorganism-based techniques, along with the advantages and challenges associated with eco-friendly production. The book also discusses the functionalization and customization of AuNPs to optimize their properties for specific applications, such as targeted therapies, pollutant removal, and biosensing. By promoting interdisciplinary approaches and standardized green protocols, this book aims to inspire further advancements in sustainable nanotechnology and offer impactful solutions for real-world challenges.
