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	Autore	WHEELER, Kathleen
	Titolo	Sources, processes and methods in Coleridge's Biographia Literaria / Kathleen M. Wheeler
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2.	Record Nr.	UNINA9911031572403321
	Autore	Srivastav Alok Kumar
	Titolo	Nanobiotechnology : AI and IoT Applications and Emerging Implications // by Dr. Alok Kumar Srivastav, Dr. Priyanka Das
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	Altri autori (Persone)	DasPriyanka
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	Nota di contenuto	Chapter 1: Introduction to Nano-Biotechnology -- Chapter 2: Types of Nanomaterials and Their Properties -- Chapter 3: Cellular

Nanostructures and Biomolecular Motors -- Chapter 4: Synthesis of Nanomaterials -- Chapter 5: Characterization of Nanomaterials -- Chapter 6: Thin Films and Colloidal Nanostructures -- Chapter 7: Self-Assembly and Nanovesicles -- Chapter 8: Nanoparticles for Drug Delivery -- Chapter 9: Nanoparticles for Diagnostics and Imaging -- Chapter 10: Nanobiocatalysts and Their Applications -- Chapter 11: Environmental and Health Impacts of Nanomaterials -- Chapter 12: Ecotoxicology and Life Cycle Assessment -- Chapter 13: Nanomaterials in Catalysis -- Chapter 14: Nanotechnology in Medicine -- Chapter 15: Nanotechnology in Food Science -- Chapter 16: Nanotechnology for Water Remediation and Purification -- Chapter 17: MEMS and NEMS Based on Nanomaterials -- Chapter 18: Safety and Regulation of Nanomaterials -- Chapter 19: Genotoxicity and Cytotoxicity of Nanomaterials -- Chapter 20: Future Directions in Nano-Biotechnology.

Sommario/riassunto

Explore the integration of nanotechnology with artificial intelligence (AI) and the Internet of Things (IoT), focusing on advancements, applications, and future prospects in the field. This book highlights the fusion of cutting-edge technologies with biological and nanomaterials, emphasizing their role in transforming industries such as medicine, environmental science, and manufacturing. This book delves into the fundamentals of Nano-Biotechnology, starting with its historical evolution and foundational concepts. It explores the various types of nanomaterials, such as quantum dots, polymeric nanoparticles, and metal nanoparticles, detailing their properties and applications in fields such as drug delivery, diagnostics, and catalysis. Cellular nanostructures, biomolecular motors, and bio-inspired nanostructures are discussed, alongside methods for nanomaterial synthesis, including physical, chemical, and biological approaches. A focus on AI and IoT integration is woven throughout, highlighting their roles in optimizing nanomaterial properties, synthesis processes, and applications. The book further explores nanomaterial characterization techniques, nanomedicine, water remediation, MEMS/NEMS, and nanocatalysis, while also addressing crucial topics such as environmental impact, ecotoxicology, and regulatory frameworks. Each chapter presents advanced technological insights, from nanobiocatalysts to thin films and self-assembled nanostructures, all within the context of AI and IoT-driven advancements. You will gain a deep understanding of the interdisciplinary nature of Nano-Biotechnology, the implications of AI and IoT integration, and the ethical, environmental, and societal considerations shaping the future of this rapidly evolving field. The book offers valuable perspectives on emerging trends and equips readers with insights necessary for both academic and practical applications of Nano-Biotechnology. You Will Understand the key concepts, classification, properties, and applications of various nanomaterials in fields like medicine, diagnostics, and catalysis Gain insights into the physical, chemical, and biological methods of nanomaterial synthesis as well as advanced techniques Discover how Nano-Biotechnology is being applied to multiple sectors and MEMS/NEMS systems, and learn about the challenges and future trends.
