1. Record Nr. UNINA9911021965103321

Autore	Gupta Nikhil
Titolo	Architected Metamaterials: Design Principles and Properties / / by Nikhil Gupta, Caleb Beckwith
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2025
ISBN	3-031-98330-0
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (144 pages)
Collana	Physics and Astronomy Series
Altri autori (Persone)	BeckwithCaleb
Disciplina	620.11295
Soggetti	Metamaterials Production engineering Mechanical engineering Magnetic materials Thermal Process Engineering Mechanical Engineering Mechanical Process Engineering Magnetic Materials
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Metamaterials: Introduction -- Mechanical Property Manipulation -- Energy Manipulation -- Wave Manipulation -- Bridging the Bandgap: Design and Manufacturing of Metamaterials -- Current Limitations and Future directions -- Concluding remarks.
Sommario/riassunto	This book demonstrates the variety of metamaterials in presented in the scholarly, research literature—their compositions, manufacturing methods, and applications. It reviews critical work appearing in over 400 papers published within the last five years discussing these materials. This volume summarizes the main findings of this topic for a graduate level beginners in the field of mechanical engineering, materials science, manufacturing engineering and electrical engineering. Describes how 3D printing has enabled fabrication of metamaterial and analyze the future trends; Summarizes findings of 400+ journal papers published in the past 5 years to find common trends; Explains principles of metamaterial interaction with mechanical, optical, thermal and electromagnetic stimuli.