1. Record Nr. UNINA9910523006503321 Autore Ahmadivand Arash Titolo Toroidal metamaterials: fundamentals, devices, and applications // Arash Ahmadivand, Burak Gerislioglu, Zeinab Ramezani Pubbl/distr/stampa Cham, Switzerland: ,: Springer, , [2021] ©2021 **ISBN** 3-030-58288-4 Edizione [1st ed. 2021.] Descrizione fisica 1 online resource (X, 142 p. 33 illus., 29 illus. in color.) Collana **Engineering materials** Disciplina 620.11 Soggetti Metamaterials Toroidal magnetic circuits Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Chapter 1 - Introduction and Overview -- Chapter 2 - Classical Nota di contenuto Electromagnetics -- Chapter 3 - Expansion of Electromagnetic Multipoles -- Chapter 4 - Physical Mechanism Behind the Toroidal Multipoles -- Chapter 5 - Toroidal Excitations in Metamaterials --Chapter 6 - Toroidal Metadevices. . This book provides an overview of the use of toroidal moments. This Sommario/riassunto includes methods of excitation, numerical analysis, and experimental measurements of associating structures. Special emphasis is placed on understanding the fundamental physics, characteristics, and real-world applications of toroidal multipoles. This book also covers a variety of both planar and 3D meta-atom and metamolecule schemes capable to sustain toroidal moments across a wide range of spectrum. It discusses the implementation of innovative approaches, for exploring the spectral features and excitation methodologies, predicting the properties of the correlating metasystems in their excited states. An applicable text for undergraduate, graduate, and postgraduate students, this book is also

of interest to researchers, theorizers, and experimentalists working in

optical physics, photonics, and nanotechnology.