1.	Record Nr.	UNINA9910555277903321
	Titolo	Fundamentals of terahertz devices and applications / / editor, Dimitris Pavlidis
	Pubbl/distr/stampa	Hoboken, NJ : , : John Wiley & Sons, Incorporated, , [2021] ©2021
	ISBN	1-119-46073-5 1-119-46074-3 1-119-46072-7
	Descrizione fisica	1 online resource (579 pages)
	Disciplina	621.38133
	Soggetti	Terahertz technology Electronic books.
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	Cover -- Title Page -- Copyright Page -- Contents -- About the Editor -- List of Contributors -- About the Companion Website -- Chapter 1 Introduction to THz Technologies -- Chapter 2 Integrated Silicon Lens Antennas at Submillimeter-wave Frequencies -- 2.1 Introduction -- 2.2 Elliptical Lens Antennas -- 2.2.1 Elliptical Lens Synthesis -- 2.2.2 Radiation of Elliptical Lenses -- 2.2.2.1 Transmission Function T(Q) -- 2.2.2.2 Spreading Factor S(Q) -- 2.2.2.3 Equivalent Current Distribution and Far-field Calculation -- 2.2.2.4 Lens Reflection Efficiency -- 2.3 Extended Semi-hemispherical Lens Antennas -- 2.3.1 Radiation of Extended Semi-hemispherical Lenses -- 2.4 Shallow Lenses Excited by Leaky Wave/Fabry-Perot Feeds -- 2.4.1 Analysis of the Leaky-wave Propagation Constant -- 2.4.2 Primary Fields Radiated by a Leaky-wave Antenna Feed on an Infinite Medium -- 2.4.3 Shallow-lens Geometry Optimization -- 2.5 Fly-eye Antenna Array -- 2.5.1 Silicon DRIE Micromachining Process at Submillimeter-wave Frequencies -- 2.5.1.1 Fabrication of Silicon Lenses Using DRIE -- 2.5.1.2 Surface Accuracy -- 2.5.2 Examples of Fabricated Antennas -- Exercises -- Exercise 1: Derivation of the Transmission Coefficients and Lens Critical Angle -- Exercise 2 -- Exercise 3 -- References -- Chapter 3 Photoconductive

Sommario/riassunto

"The book will address fundamentals of THz devices and their applications. THz technology relates to applications that span in frequency from a few hundred GHz to more than 1000 GHz. They require devices for signal generation, detection and treatment the characteristics of which have been reported in various publications but their in-depth understanding is often lacking or requires the consultation of multiple references. It is the purpose of this book to address the above topics in a way that both the beginner and advanced reader can obtain a better understanding of device operation and use" -- Provided by publisher