1. Record Nr. UNINA9910254190703321

Autore	Choudhury Balamati
Titolo	PBG based Terahertz Antenna for Aerospace Applications / / by Balamati Choudhury, Bhavani Danana, Rakesh Mohan Jha
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2016
ISBN	981-287-802-5
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (68 p.)
Collana	SpringerBriefs in Computational Electromagnetics, , 2365-6239
Disciplina	629.4743
Soggetti	Microwaves Optical engineering Mathematical physics Electrical engineering Microwaves, RF and Optical Engineering Theoretical, Mathematical and Computational Physics Communications Engineering, Networks
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Introduction -- Challenges -- Trends in THz Space Communication System -- Developments in Terahertz Devices -- Terahertz Antenna Design -- Conclusion -- Appendix A.1: Models of PBG based Microstrip Patch Antenna -- Appendix A.2: Feeding types of Microstrip Patch Antennas -- Appendix A.3: Multiobjective Particles Swarm Optimization.
Sommario/riassunto	This book focuses on high-gain antennas in the terahertz spectrum and their optimization. The terahertz spectrum is an unallocated EM spectrum, which is being explored for a number of applications, especially to meet increasing demands of high data rates for wireless space communications. Space communication systems using the terahertz spectrum can resolve the problems of limited bandwidth of present wireless communications without radio-frequency interference. This book describes design of such high-gain antennas and their performance enhancement using photonic band gap (PBG) substrates. Further, optimization of antenna models using evolutionary algorithm based computational engine has been included. The optimized high-

performance compact antenna may be used for various wireless applications, such as inter-orbital communications and on-vehicle satellite communications.