Record Nr. UNINA9910254191803321 Autore Narayan Shiv Titolo Frequency Selective Surfaces based High Performance Microstrip Antenna / / by Shiv Narayan, B. Sangeetha, Rakesh Mohan Jha Singapore:,: Springer Singapore:,: Imprint: Springer,, 2016 Pubbl/distr/stampa **ISBN** 981-287-775-4 [1st ed. 2016.] Edizione Descrizione fisica 1 online resource (62 p.) Collana SpringerBriefs in Computational Electromagnetics, , 2365-6239 Disciplina 621.3824 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 -- Characteristics of FSS Structures -- Microstrip Antenna over FSS based High Impedance Ground Plane -- Microstrip Antenna Loaded with FSS based Superstarte -- Summary. This book focuses on performance enhancement of printed antennas Sommario/riassunto using frequency selective surfaces (FSS) technology. The growing demand of stealth technology in strategic areas requires highperformance low-RCS (radar cross section) antennas. Such requirements may be accomplished by incorporating FSS into the antenna structure either in its ground plane or as the superstrate, due to the filter characteristics of FSS structure. In view of this, a novel approach based on FSS technology is presented in this book to enhance the performance of printed antennas including out-of-band structural RCS reduction. In this endeavor, the EM design of microstrip patch antennas (MPA) loaded with FSS-based (i) high impedance surface (HIS) ground plane, and (ii) the superstrates are discussed in detail. The EM analysis of proposed FSS-based antenna structures have been carried

out using transmission line analogy, in combination with the reciprocity

theorem. Further, various types of novel FSS structures are considered in designing the HIS ground plane and superstrate for enhancing the MPA bandwidth and directivity. The EM design and performance analyses of FSS-based antennas are explained here with the appropriate expressions and illustrations.