1. Record Nr. UNINA9910502632603321

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Titolo	Wearable Antennas and Body Centric Communication : Present and Future / / by Shiban Kishen Koul, Richa Bharadwaj
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2021
ISBN	981-16-3973-6
Edizione	[1st ed. 2021.]
Descrizione fisica	1 online resource (336 pages)
Collana	Lecture Notes in Electrical Engineering, , 1876-1119 ; ; 787
Disciplina	621.384135
Soggetti	Biomedical engineering Building materials Biophysics Nanoscience Signal processing Nanotechnology Computational intelligence Biomedical Engineering and Bioengineering Wood, fabric, and textiles Nanoscale Biophysics Signal, Speech and Image Processing Nanoengineering Computational Intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction to Body Centric Wireless Communication -- On-Body Radio Propagation: UWB and mmW Technologies -- Indoor Off-Body and Body-to-Body Communication: UWB and mmW Technologies -- Flexible and Textile Antennas for Body-Centric Applications -- Implantable Antennas for WBANs -- Body Centric Localization and Tracking Using Compact Wearable Antennas -- Wearable Technology for Human Activity Monitoring and Recognition -- UWB and 60 GHz Radar Technology for Vital Sign Monitoring, Activity Classification and Detection -- UWB Radar Technology for Imaging Applications -- Emerging Technologies and Future Aspects.

Sommario/riassunto

This book presents state-of-the-art technologies, trends and applications with a focus on the healthcare domain for ultra-wideband (3.1–10.6 GHz) and 60 GHz (57–66 GHz) wireless communication systems. Due to various key features such as miniaturized antenna design, low power, high data rate, less effects on the human body, relatively less crowded spectrum, these technologies are becoming popular in various fields of biomedical applications and day-to-day life. The book highlights various aspects of these technologies related to body-centric communication, including antenna design requirements, channel modeling and characterization for WBANs, current fabrication and antenna design strategies for textile, flexible and implanted antennas. Apart from the general requirements and study related to these frequency bands, various application specific topics such as localization and tracking, physical activity recognition and assessment, vital sign monitoring and medical imaging are covered indetail. The book concludes with the glimpses of future aspects of the UWB and 60 GHz technology which includes IoT for healthcare and smart living, novel antenna materials and application of machine learning algorithms for overall performance enhancement.