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Omnidirectional Slots Antenna Antenna Engineering Antenna Optimization and Design Based on Binary Coding Wideband, Multiband, and Smart Antenna Systems Planar Antennas HCTL Open International Journal of Technology Innovations and Research (IJTIR) Proceedings of International conference on Antenna Technologies Antenna Systems HCTL Open International Journal of Technology Innovations and Research (IJTIR) Electromagnetic Waves and Antennas for Biomedical Applications Smart Antennas, Electromagnetic Interference and Microwave Antennas for Wireless Communications Printed Antennas Emerging Innovations in Microwave and Antenna Engineering Antenna Theory and Microstrip Antennas Circularly Polarized Antennas HCTL Open International Journal of Technology Innovations and Research (IJTIR) Antenna Architectures for Future Wireless Devices Non-Redundant Near-Field to Far-Field Transformation Techniques Microstrip Antenna Design for Wireless Applications Microstrip Antennas Digital Convergence in Antenna Design Antenna Design for Narrowband IoT: Design, Analysis, and Applications Dielectric Resonator Antennas Wideband, Multiband, and handbook of nonprescription

2023-02-04

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Smart Reconfigurable Antennas for Modern Wireless Communications Band-Notch Characteristics in Ultra-Wideband Antennas Proceedings of the Sixth International Symposium on Dielectric Materials and Applications (ISyDMA'6) Antennas Practical Antenna Design for Wireless Products Multi-Antenna Synthetic Aperture Radar Multifunctional MIMO Antennas: Fundamentals and Application Multifunctional and Multiband Planar Antennas for Emerging Wireless Applications Dynamics of Meteor Outbursts and Satellite Mitigation Strategies Multi-Mode Resonant Antennas Next-Generation Antennas IMDC-SDSP 2020 Antenna and Sensor Technologies in Modern Medical Applications DESIGN OF TRI-BAND L SHAPED PARASITIC PATCH ANTENNA Robotic Process Automation MIMO Antennas for Wireless Communication Antennas and Wave Propagation

## **Omnidirectional Slots Antenna**

### 2020-12-03

omnidirectional antenna with high gain low profile vertical polarization even cp polarization is very difficult to design although it is from the dipole in this book a novel idea that the running wave in the coaxial wire is disturbed by the orthogonal slot array on the cylindrical metal shell is introduced which radiates the cp wave in omni direction when feeding on two ends of the coaxial wire respectively there will appear left hand circularly polarized lhcp omnidirectional radiation or right hand circularly polarized rhcp omnidirectional radiation by introducing the t shaped feed structure the coaxial wire with slot array can conveniently produce the lhcp and rhcp radiation diversity with one end feeding in the further combining with the directional antenna it will generate the pattern diversity in the half sphere space the antenna of the coaxial wire with slot array can further transform into conical cp beam antenna if the coaxial wire becomes into a conical frustum by introducing the pin diode into the slot the antenna of the coaxial wire with slot array can radiate the reconfigurable directional beam by switching the states of the pin diodes by introducing a novel switchable microwave circuit the omnidirectional directional pattern switchable antenna can be realized easily this book proposes a continues method to develop the potentialities of the omnidirectional antenna and the readers can study the method or ideas of the

omnidirectional slots antenna even graft the cp or diversity methods to other antennae

### **Antenna Engineering**

2017-03-27

the book deals with theoretical and experimental research of antennas the presentation is based on the electromagnetic theory it begins with the theory of thin antennas thin antennas represent one of the main types of radiators thus the theory of thin antennas is the basis of the antennas analysis special attention is paid to the integral equation of leontovich levin for a current along a straight thin walled metal cylinder which is equivalent to the equation of hallen with a precise kernel together with the analysis of various types of antennas the book deals with the problems of synthesis including the creation a wide band radiator by means of determining of the types and the magnitudes of concentrated loads which are connected along a linear radiator and create in a given frequency band high electrical performance problems of antenna engineering are discussed in the second half of the book including the results of application of a compensation method for the protection of humans against irradiation and structural features of ship antennas

## Antenna Optimization and Design Based on Binary Coding

2022-01-11

this book investigates in detail the antenna optimization method with binary coding and their applications to antenna design it introduces the binary coding principle and optimization method the method of binary coding corresponding to geometry structure in further the designs by binary coding optimization method of following items are introduced including multi frequency antenna based on binary coding low profile rfid tag antenna on metal wideband directional antenna with low profile mmwave antenna and uwb antenna additionally improved hexagon unit to antenna optimization by binary coding method is given and a new method of antenna design based on optimization of linear motion trajectory is presented in the end this book proposes an automatic optimization method of meshed antenna based on binary coding reduce the artificial a priori influence and find the best antenna the book is intended for undergraduate and graduate students who are interested in antenna technology researchers investigating high performance antenna and antenna design engineers working on new antenna and the applications

### Wideband, Multiband, and Smart Antenna Systems

### 2021-09-21

this book provides current r d trends and novel approaches in design and analysis of broadband multiband and smart antennas for 5g and b5g mobile and wireless applications as well as the identification of integration techniques of these antennas in a diverse range of devices the book presents theoretical and experimental approaches to help the reader in understanding the unique design issues and more advanced research moreover the book includes chapters on the fundamentals of antenna theory the book is pertinent to professionals and researchers working in the field of antenna engineering it is written for graduate students researchers academics and industry practitioners who want to improve their understanding in the current research trends in design analysis of broadband multiband and smart antennas for wireless applications

### **Planar Antennas**

2021-10-21

this comprehensive reference text discusses fundamental concepts applications design

techniques and challenges in the field of planar antennas the text focuses on recent advances in the field of planar antenna design and their applications in various fields of research including space communication mobile communication wireless communication and wearable applications this resource presents planar antenna design concepts methods and techniques to enhance the performance parameters and applications for iots and device to device communication the latest techniques used in antenna design including their structures defected ground mimo and fractal design are discussed comprehensively the text will be useful for senior undergraduate students graduate students and academic researchers in fields including electrical engineering electronics and communication engineering

## HCTL Open International Journal of Technology Innovations and Research (IJTIR)

### 2013-07-31

hctl open international journal of technology innovations and research ijtir issn online 2321 1814 is an international open access peer reviewed online journal devoted to various disciplines of science and technology hctl open ijtir is a bi monthly journal published by hctl open publications solutions india and hybrid computing technology labs india get more information at ijtir hctl org

## **Proceedings of International conference on Antenna Technologies**

2005

this book offers an up to date and comprehensive review of modern antenna systems and their applications in the fields of contemporary wireless systems it constitutes a useful resource of new material including stochastic versus ray tracing wireless channel modeling for 5g and v2x applications and implantable devices chapters discuss modern metalens antennas in microwaves terahertz and optical domain moreover the book presents new material on antenna arrays for 5g massive mimo beamforming finally it discusses new methods devices and technologies to enhance the performance of antenna systems

### Antenna Systems

2022-04-28

hctl open international journal of technology innovations and research ijtir issn online 2321 1814 is an international open access peer reviewed online journal devoted to various disciplines of science and technology hctl open ijtir is a bi monthly journal published by hctl open publications solutions india and hybrid computing technology labs india get more information at ijtir hctl org

## HCTL Open International Journal of Technology Innovations and Research (IJTIR)

2013-07-05

this book discusses electromagnetic waves and antennas used as diagnostic tools and therapeutic techniques for applications in cancer detection stroke event detection gi diagnostics and cardiovascular risk predictions it discusses electromagnetic devices wireless implants and in vitro and in vivo testing

## **Electromagnetic Waves and Antennas for Biomedical Applications**

2021-12-20

this book covers all areas of smart antennas electromagnetic interference and microwave antennas for wireless communications smart antennas or adaptive antennas are multi antenna components on one or both sides of a radio communication connection combined with advanced signal processing algorithms they ve evolved into a critical technology for third generation and beyond mobile communication systems to meet their lofty capacity and performance targets it seems that a significant capacity gain is achievable particularly if they are employed on both sides of the connection there are several essential characteristics of these systems that need scientific and technical investigation included in the book are beamforming massive mimo network mimo mmwave transmission compressive sensing mimo radar sensor networks vehicle to vehicle communication location and machine learning

## Smart Antennas, Electromagnetic Interference and Microwave Antennas for Wireless Communications

2023-02-17

printed antennas have become an integral part of next generation wireless communications and have been found to be commonly used to improve system capacity data rate reliability etc this book covers theory design techniques and the chronological regression of the printed antennas for various applications this book will provide readers with the basic conceptual knowledge about antennas along with advanced techniques for antenna design it covers a variety of analytical techniques and their cad applications and discusses new applications of printed antenna technology such as sensing the authors also present special reconfigurable antennas such as me dipole polarization feeding and dgs the book will be useful to students as an introduction to design and applications of antennas additionally experienced researchers in this field will find this book a ready reference and benefit from the techniques of research in printed antennas included in this book following are some of the salient features of this book covers a variety of analytical techniques and their cad applications discusses new applications of printed antenna technology such as sensing examines the state of design techniques of printed antenna presents special reconfigurable antennas such as me dipole polarization feeding and dgs

## **Printed Antennas**

### 2020-11-22

continuing advancements in electronics creates the possibility of communicating with more people at greater distances such an evolution calls for more efficient techniques and designs in radio communications emerging innovations in microwave and antenna engineering provides innovative insights into theoretical studies on propagation and microwave design of passive and active devices the content within this publication is separated into three sections the design of antennas the design of the antennas for the rfid system and the design of a new structure of microwave amplifier highlighting topics including additive manufacturing technology design application and performance characteristics it is designed for engineers electricians researchers students and professionals and covers topics centered on modern antenna and microwave circuits design and theory

## **Emerging Innovations in Microwave and Antenna Engineering**

### 2018-10-12

antenna theory and microstrip antennas offers a uniquely balanced analysis of antenna fundamentals and microstrip antennas concise and readable it provides theoretical background application materials and details of recent progress exploring several effective design approaches this book covers a wide scope making it an ideal hands on resource for professionals seeking a refresher in the fundamentals it also provides the basic grounding in antenna essentials that is required for those new to the field the book s primary focus is on introducing practical techniques that will enable users to make optimal use of powerful commercial software packages and computational electromagnetics used in full wave analysis and antenna design going beyond particular numerical computations to teach broader concepts the author systematically presents the all important spectral domain approach to analyzing microstrip structures including antennas in addition to a discussion of near field measurement and the high frequency method this book also covers elementary linear sources including huygen s planar element and analysis and synthesis of the discrete and continuous arrays formed by these elementary sources the digital beam forming antenna and smart antenna cavity mode theory and related issues including the design of irregularly shaped patches and the analysis of mutual coupling based on much of the author s own internationally published research and honed by his years of teaching experience this text is designed to bring students engineers and technicians up to speed as efficiently as possible this text purposefully emphasizes principles and includes carefully selected sample problems to ease the process of understanding the often intimidating area of antenna technology paying close attention to this text you will be able to confid

## **Antenna Theory and Microstrip Antennas**

### 2017-12-19

this book presents a comprehensive insight into the design techniques for different types of cp antenna elements and arrays in this book the authors address a broad range of topics on

circularly polarized cp antennas firstly it introduces to the reader basic principles design techniques and characteristics of various types of cp antennas such as cp patch antennas cp helix antennas quadrifilar helix antennas qha printed quadrifilar helix antennas pgha spiral antenna cp slot antennas cp dielectric resonator antennas loop antennas crossed dipoles monopoles and cp horns advanced designs such as small size cp antennas broadband wideband and ultra wideband cp antennas are also discussed as well as multi band cp antennas and dual cp antennas the design and analysis of different types of cp array antennas such as broadband cp patch arrays dual band cp arrays cp printed slot arrays single band and multi band cp reflectarrays high gain cp waveguide slot antennas cp dielectric resonator antenna arrays cp active arrays millimetre waveband cp arrays in Itcc and cp arrays with electronically beam switching or beam steering capabilities are described in detail case studies are provided to illustrate the design and implementation of cp antennas in practical scenarios such as dual band global navigation satellite systems gnss receivers satellite communication mobile terminals at the s band radio frequency identification rfid readers at 2 4 ghz and ka band high speed satellite communication applications it also includes the detailed designs for a wideband logarithmic spiral antenna that can operate from 3 4 7 7 ghz in addition the book offers a detailed review of the recent developments of different types of cp antennas and arrays presents comprehensive discussions of design techniques for different types of cp antennas small size cp antennas broadband cp antennas multi band cp antennas and cp arrays covers a wide range of antenna technologies such as

microstrip antennas helix quadrifilar helix antenna printed quadrifilar helix antenna dielectric resonator antennas printed slots spiral antennas monopoles waveguide slot arrays reflectarrays active arrays millimetre wave arrays in ltcc electronically beam switching arrays and electronically beam steerable arrays reviews recent developments in different types of cp antennas and arrays reported by industries researchers and academics worldwide includes numerous case studies to demonstrate how to design and implement different cp antennas in practical scenarios provides both an introduction for students in the field and an in depth reference for antenna rf engineers who work on the development of cp antennas circularly polarized antennas will be an invaluable guide for researchers in r d organizations system engineers antenna telecom space and satellite postgraduates studying the subjects of antenna and propagation electromagnetics rf microwave millimetre wave systems satellite communications and so on technical managers and professionals in the areas of antennas and propagation

## **Circularly Polarized Antennas**

2014-02-03

hctl open international journal of technology innovations and research ijtir issn online 2321 1814 is an international open access peer reviewed online journal devoted to various disciplines of science and technology hctl open ijtir is a bi monthly journal published by hctl open publications solutions india and hybrid computing technology labs india get more information at ijtir hctl org

## HCTL Open International Journal of Technology Innovations and Research (IJTIR)

### 2013-03-31

this book presents the design requirements of antenna integration for modern commercial devices such as smartphones dongles and access points practical use case scenarios of smartphone and the design process of the antenna system for the same are highlighted the feasibility of scaling up sub 6ghz to mmwave antennas is also discussed in detail followed by a plethora of design examples which could be panel mounted to modern day commercial smartphones the unique requirement of gain switchability is introduced with feasible practical antenna designs high efficiency antennas for 5g base stations is introduced along with a design example on planar all metallic antenna beam switchability requirement for base station is illustrated with a couple of compact antenna system examples variety of feeding techniques for mmwave antennas is elaborated in this book finally low cost antenna designs for future wireless devices are illustrated

### **Antenna Architectures for Future Wireless Devices**

### 2022-01-03

this book outlines the role of the near field to far field nf ff transformations in the framework of em measurements their development and the current state of art the classical nf ff transformation techniques without and with probe compensation are summarized

## Non-Redundant Near-Field to Far-Field Transformation Techniques

### 2022-12-23

covers latest design and design parameters in the field of microstrip antenna discusses design of wearable antennas in detail presents design of conformal and miniaturized antenna structures for various applications covers methods and techniques for the enhancement of the performance parameters of the microstrip antenna discusses latest techniques in the field of microstrip antennas and it s applications

### **Microstrip Antenna Design for Wireless Applications**

### 2021-11-29

the progress in modern tiny multifunctional wireless devices has dramatically increased the demand for microstrip antennas in recent years furthermore in the last few years such microstrip antennas found numerous applications in both the military and the commercial sectors therefore microstrip patch antenna has become a major focus to the researchers in the field of antenna engineering in this book some recent advances in microstrip antennas are presented this book contains mainly three sections in the first section some new approaches to modern analytical techniques rather than the conventional cavity model transmission line model or spectral domain analysis have been discussed in the second section of the book a light has been showered on some new techniques for bandwidth enhancement of microstrip radiators in the last section of the book the recent trends in microstrip antenna research have been showcased some newfangled application oriented approach to this field is vividly discussed the books main objective is to facilitate the microstrip antenna researchers for exploring the subject in more vibrant manner and also to revolutionize wireless communications a sufficient number of topics have been covered some for the first time in a research handbook i hope that the book will surely be beneficial for scientists practicing engineers and researchers working in the field of microstrip antennas

### **Microstrip Antennas**

### 2017-11-15

digital convergence in antenna design the latest addition to this series presents high quality original research contributions on analytical and practical models and ideas in the field of antennas including a thorough look at rf techniques like antennas rfid and filters with special emphasis on real time applications like e health radar and mobile and satellite communications this book is intended to disseminate recent trends in antenna designs for real time applications that leverage digital convergence the book intends to report the latest research findings as well as the state of the art rf techniques related to antennas rfid filters etc with special emphasis on real time applications like e health radar and mobile and satellite communications the book can be used as a reference for researchers who want to explore the convergence of ai ml dl big data and iot in the areas of antenna and advanced communication technologies for real time applications these real time applications can include e healthcare intelligent transportation aerospace retail manufacturing industrial plants and defense products where communications play a major role

### **Digital Convergence in Antenna Design**

#### 2024-04-02

in internet of things iot applications wireless connectivity is a key factor particularly those that need to be in transition or where wired communication is not effective or practicable for top notch connectivity of the narrowband iot nb iot standard the 900mhz frequency is generally used by most of the vendors the radiation guality not only depends on the antenna geometry but on immediate surroundings additionally the iot product itself and the user of the product can strongly affect the resulting radiation pattern and other characteristics of the antenna on the other hand a suitable antenna should also have high efficiency and adequate bandwidth covering the desired frequency range to take these effects into consideration the whole iot product must be included in the antenna simulations antenna design for narrowband iot design analysis and applications provides the antenna design concept for narrowband internet of things applications performs a detailed analysis of the antenna and discusses the various antenna design concepts and structures covering a range of topics such as antenna design and antenna measurement systems this book is ideal for industry professionals research scholars academicians professors and students

## Antenna Design for Narrowband IoT: Design, Analysis, and Applications

2022-03-11

this book focuses on the understanding of the cylindrical dielectric resonator antennas cdra the book introduces the fundamentals of dra cdra identifying the modes in a cdra excitation techniques and recent advancements pertaining to the research of the cdras the latest trends in the field are discussed including wide bandwidth of operation high gain modal stability mode and impedance matching techniques circularly polarized cdras beam forming and mimo applications for modern wireless systems the experimental validation testing fabrication methods and machining to achieve cylindrical and its reformed shapes are also presented

## **Dielectric Resonator Antennas**

2021-11-30

modern society thrives on communication that is instant and available at all times a constant

exchange of information that encompasses everything from video streaming to gps navigation experts even suggest that in the near future everything from our cars to our kitchen appliances will be connected to the internet a feat that would not be possible without advanced wireless technology wideband multiband and smart reconfigurable antennas for modern wireless communications showcases current trends and novel approaches in the design and analysis of the antennas that make wireless applications possible while also identifying unique integration opportunities for antennas and wireless applications to work together by featuring both theoretical and experimental approaches to integration this book highlights specific design issues to assist a wide range of readers including students researchers academics and industry practitioners this publication features chapters on a broad scope of topics including algorithms and antenna optimization wireless infrastructure development wireless applications of intelligent algorithms antenna architecture and antenna reconfiguration techniques

## Wideband, Multiband, and Smart Reconfigurable Antennas for Modern Wireless Communications

2015-08-26

this book comprehensively reviews ultra wideband uwb and uwb multi input multi output

mimo antennas with band notched characteristics with a focus on interference cancellation functionality the book is organized into seven chapters that cover single band dual band and multi band notched uwb antennas followed by band notched characteristics in uwb mimo antennas further it explains the mechanism of reconfigurability and tunability in band notched uwb antennas including advanced applications of uwb systems overall it covers different techniques of canceling the electromagnetic interference in uwb in a concise volume features provides a comprehensive presentation of avoiding interference in uwb systems reviews state of the art literature related to uwb antennas filtennas and various reconfigurable technologies explains different techniques for producing band notch characteristics in uwb systems includes discussion on historical perspectives of uwb technology consolidates different research activities carried out on the electromagnetic interference cancellation techniques in the uwb communication systems band notch characteristics in ultra wideband antennas is aimed at researchers and graduate students in electrical and antenna engineering taimoor khan has been an assistant professor at the department of electronics and communication engineering national institute of technology silchar since 2014 in addition to this dr khan has also worked as a visiting assistant professor at asian institute of technology bangkok thailand during september december 2016 his active research interests include printed microwave circuits electromagnetic bandgap structures ultra wideband antennas dielectric resonator antennas ambient microwave energy harvesting and artificial intelligence paradigms in electromagnetics dr khan has successfully guided

three ph d theses and is supervising six ph d students he has published over 75 research articles in well indexed journals and in world renowned conference proceedings currently he is executing three funded research projects including two international collaborative sparc and vaira research projects in september 2020 dr khan has been awarded a prestigious national iete prof svc aiya memorial award for the year 2020 yahia m m antar has been a professor at the department of electrical and computer engineering royal military college of canada since 1990 he served as the chair of cnc ursi from 1999 to 2008 commission b from 1993 to 1999 and has a cross appointment at gueen s university in kingston he has authored and co authored over 250 journal papers several books and chapters in books over 500 refereed conference papers holds several patents has chaired several national and international conferences and has given plenary talks at many conferences dr antar is a fellow of the engineering institute of canada the electromagnetic academy and an international union of radio science ursi he was elected by the ursi to the board as the vice president in 2008 and in 2014 and to the ieee ap adcom in 2009 in 2011 he was appointed as a member of the canadian defence advisory board dab of the canadian department of national defence he serves as an associate editor for many ieee and iet journals and as an ieee aps distinguished lecturer presently he is working as president elect for ieee antenna and propagation society for the year 2020

## Band-Notch Characteristics in Ultra-Wideband Antennas

2021-06-08

this book addresses to the materials scientists physicists chemists biologists and electrical engineers engaged in fundamental and applied research or technical investigations on such materials the goal of the international symposium on dielectric materials and applications conference series is to provide an innovative platform for key researchers scientists from all over the world to exchange ideas and to hold wide ranging discussions on recent developments in dielectric materials and their new and emerging applications the aim of isydma meeting is to provide an international forum for the discussion of current research on high k dielectric electrical insulation dielectric phenomena and topics related to emerging applications

## Proceedings of the Sixth International Symposium on

### **Dielectric Materials and Applications (ISyDMA'6)**

### 2022-09-25

the book comprises a new method of solving the integral equation of leontovich the most rigorous and most effective equation for the current in thin linear antennas the book describes the features of the new method in its application in various types of antennas it considers new ways of analyzing antennas in particular in the calculation of an antenna gain based on main radiation patterns and the calculation of the directional characteristics of radiators with known distribution of current amplitude the method of electrostatic analogy proposed by the author provides the base for comparison of electromagnetic fields of high frequency currents and electrostatic charges located on linear conductors to improve the directional characteristics of log periodic and director type antennas a new approach to the analysis of the electrical characteristics of a microstrip antenna which allows expansion of its operation range is substantiated and developed new results of antenna synthesis are obtained the second part of the book is devoted to specific types of antennas the author had a significant role in their creation particular attention is given to ship antennas for different frequency ranges the book is intended for professionals working in electrodynamics and those working on development placement and exploitation of antennas it will be useful for lecturers university level professors teachers students of radio engineering and researchers

working in various fields of radio electronics and interested in an in depth study of theoretical problems and designs f antennas it can also be used for short university courses

### **Antennas**

### 2021-04-02

this comprehensive resource covers both antenna fundamentals and practical implementation strategies presenting antenna design with optimum performance in actual products and systems the book helps readers bridge the gap between electromagnetic theory and its application in the design of practical antennas in real products practical implementation strategies in products and systems will be addressed in order to design antennas in the context of actual product environments including pcb layout component placement and casing design practical design examples on wearable electronic products are presented with a systematic approach to designing antennas for actual products the book introduces antenna fundamentals to provide the basic concepts and necessary mathematics on electromagnetic analysis followed by advanced antenna elements the concept of electromagnetic simulation is presented the advantages and disadvantages of different numerical methods in antenna modeling are also discussed several commercial antenna design and simulation tools are introduced allowing hands on practice of antenna modeling

### **Practical Antenna Design for Wireless Products**

### 2019-07-31

synthetic aperture radar sar is a well known remote sensing technique but conventional single antenna sar is inherently limited by the minimum antenna area constraint although there are still technical issues to overcome multi antenna sar offers many benefits from improved system gain to increased degrees of freedom and system flexibility multi antenna synthetic aperture radar explores the potential and challenges of using multi antenna sar in microwave remote sensing applications these applications include high resolution imaging wide swath remote sensing ground moving target indication and 3 d imaging the book pays particular attention to the signal processing aspects of various multi antenna sar from a top level system perspective explore recent extensions of synthetic aperture radar systems the backbone of the book is a series of innovative microwave remote sensing approaches developed by the author centered around multi antenna sar imaging these approaches address specific challenges and potential problems in future microwave remote sensing chapters examine single input multiple output simo multi antenna sar including azimuth and elevation multi antenna sar and multiple input multiple output mimo sar the book details the corresponding system scheme signal models time phase spatial synchronization methods and high precision imaging algorithms it also investigates their potential applications introductory tutorials and novel approaches in multi antenna sar imaging rigorous and self contained this is a unique reference for researchers and industry professionals working with microwave remote sensing sar imaging and radar signal processing in addition to novel approaches the book also presents tutorials that serve as an introduction to multi antenna sar imaging for those who are new to the field

## Multi-Antenna Synthetic Aperture Radar

### 2017-07-12

this book presents a comprehensive approach to antenna designs for various applications including 5g communication the internet of things iot and wearable devices it discusses models designs and developments of mimo antennas antenna performance measurement 5g communication challenges and opportunities and mimo antennas for Ite ism applications it covers important topics including mmwave antennas antenna arrays for mimo applications reconfigurable band notched mimo antennas multiband mimo antennas wideband mimo antennas and fractal based compact multiband hybrid antennas features discusses antenna design optimization techniques in detail covers mimo antenna performance measurement multiband mimo antennas and wideband mimo antennas discusses modeling simulation and specific absorption rate sar analysis of antennas provides applications including radio frequency identification rfid wearable antennas and antennas for iot multifunctional mimo antennas fundamentals and application is useful for undergraduate and graduate students and academic researchers in areas including electrical engineering electronics and communication engineering

# Multifunctional MIMO Antennas: Fundamentals and Application

### 2022-05-19

this work focuses on designing multiband printed single multiple input multiple output mimo cp antennas for wlan v2x and nr sub 6ghz 5g applications it also delves into the design and implementation of a four port mimo antenna for wireless applications addressing theoretical foundations and challenges additionally the book explores critical aspects of software defined radios sdr including modulation signal processing radio systems tx rx blocks sdr enabled phased arrays and beam hopping techniques with relevance to 5g 6g and iot applications features explores advancements in planar monopole antennas including bandwidth enhancement techniques analyzes innovative antenna design structures like miniaturized and conformal monopole antennas and discusses modeling and implementation spotlights wlan and wi fi 6 6e antenna design for next gen laptops with practical insights addresses the use of triple band antenna arrays for mimo applications in laptops focuses on planar antenna advancements for diverse wireless bands and applications explores multiband printed single mimo cp antennas for wlan v2x and nr sub 6ghz 5g covers the design and implementation of a four port mimo antenna for wireless applications including theoretical foundations and challenges explores sdr modulation signal processing radio systems tx rx blocks sdr enabled phased arrays and beam hopping techniques for 5g 6g and iot applications this book is aimed at graduate students and researchers in electrical and electronic engineering antennas and wireless communication systems

## Multifunctional and Multiband Planar Antennas for Emerging Wireless Applications

2023-12-19

the potential threat posed by leonid meteroids to orbiting spacecraft over the next several years calls for new dynamic mitigation strategies to assist the satellite community in reducing the danger to its vehicles this book offers deliberate dynamic mitigation strategies to complement the traditional shielding strategies providing mission operators additional

ways to decrease the danger five different attitude control and orbit maneuvering options are examined in detail the information is presented in algorithmic form to allow technically competent but meteoroid inexperienced operators to easily understand the phenomena assess the danger and implement procedures although general in scope the book emphasizes the leonid meteor events of the 1998 2002 timeframe

## **Dynamics of Meteor Outbursts and Satellite Mitigation Strategies**

1999

this title provides a unique theoretical framework for multi mode resonant antennas and different approaches to their implementation with an emphasis on mode gauge functionality a new concept for a clear identification and flexible control of all usable resonant modes in multi mode resonant antenna design the book commences by advancing a generalized odd even mode theory as a general theoretical framework for resonant elementary antennas offering new insights into the classical problem of coupling effects between antenna and transmission lines and helping reveal the operation mechanism of elementary antennas under multi mode resonance then the concept of mode gauge is developed and employed for wideband elementary antenna design by simultaneously exciting and tuning multiple resonant modes within a single radiator apart from theoretical explorations the authors also provide analysis of up to date implementation of multi mode resonant elementary antennas with different functionalities including wideband antennas circularly polarized antennas multiband antennas frequency scanning antennas and low profile antennas academics students and professional engineers at all levels will greatly benefit from the book and will be provided with historical background state of the art methodology useful design tools and multiple applications of multi mode resonant antennas

## **Multi-Mode Resonant Antennas**

### 2022-05-18

next generation antennas advances and challenges the first book in this exciting new series written and edited by a group of international experts in the field this exciting new volume covers the latest advances and challenges in the next generation of antennas antenna design and wireless communication has recently witnessed their fastest growth period ever in history and these trends are likely to continue for the foreseeable future due to recent advances in industrial applications as well as antenna wireless communication and 5g technology we are witnessing a variety of developing and expanding new technologies compact and low cost antennas are increasing the demand for ultra wide bandwidth in next generation 5g wireless communication systems and the internet of things iot enabling the next generation of high frequency communication various methods have been introduced to achieve reliable high data rate communication links and enhance the directivity of planar antennas 5g technology can be used in many applications such as in smart city applications and in smartphones this technology can satisfy the fast rise in user and traffic capacity in mobile broadband communications therefore different planar antennas with intelligent beamforming capability play an important role in these areas the purpose of this book is to present the advanced technology developments and challenges in antennas for next generation antenna communication systems this book covers advances in next generation antenna design and application domain in all related areas it is a detailed overview of cutting edge developments and other emerging topics and their applications in all areas of engineering that have achieved great accuracy and performance with the help of the advancement and challenges in next generation antennas this outstanding new volume covers all the latest developments and future aspects of antenna communication is concisely written lucid and comprehensive practical application based with many informative graphics and schematics will help students researchers as well as systems designers to understand fundamental antenna design and wireless communication compares different approaches in antenna design

### **Next-Generation Antennas**

### 2021-07-19

imdc sdsp conference offers an exceptional platform and opportunity for practitioners industry experts technocrats academics information scientists innovators postgraduate students and research scholars to share their experiences for the advancement of knowledge and obtain critical feedback on their work the timing of this conference coincides with the rise of big data artificial intelligence powered applications cognitive communications green energy adaptive control and mobile robotics towards maintaining the sustainable development and smart planning and management of the future technologies it is aimed at the knowledge generated from the integration of the different data sources related to a number of active real time applications in supporting the smart planning and enhance and sustain a healthy environment the conference also covers the rise of the digital health well being home care and patient centred era for the benefit of patients and healthcare providers in addition to how supporting the development of a platform of smart dynamic health systems and self management

### **IMDC-SDSP 2020**

#### 2020-09-09

a guide to the theory and recent development in the medical use of antenna technology antenna and sensor technologies in modern medical applications offers a comprehensive review of the theoretical background design and the latest developments in the application of antenna technology written by two experts in the field the book presents the most recent research in the burgeoning field of wireless medical telemetry and sensing that covers both wearable and implantable antenna and sensor technologies the authors review the integrated devices that include various types of sensors wired within a wearable garment that can be paired with external devices the text covers important developments in sensor integrated clothing that are synonymous with athletic apparel with built in electronics information on implantable devices is also covered the book explores technologies that utilize both inductive coupling and far field propagation these include minimally invasive microwave ablation antennas wireless targeted drug delivery and much more this important book covers recent developments in wireless medical telemetry reviews the theory and design of in vitro in vivo testing explores emerging technologies in 2d and 3d printing of antenna sensor fabrication includes a chapter with an annotated list of the most comprehensive and important references in the field written for students of engineering and antenna and sensor

engineers antenna and sensor technologies in modern medical applications is an essential guide to understanding human body interaction with antennas and sensors

## Antenna and Sensor Technologies in Modern Medical Applications

2021-02-25

robotic process automation presenting the latest technologies and practices in this ever changing field this groundbreaking new volume covers the theoretical challenges and practical solutions for using robotics across a variety of industries encompassing many disciplines including mathematics computer science electrical engineering information technology mechatronics electronics bioengineering and command and software engineering robotics is the study of creating devices that can take the place of people and mimic their behaviors mechanical engineering electrical engineering information engineering mechatronics electronics bioengineering computer engineering control engineering software engineering mathematics and other subjects are all included in robotics robots can be employed in a variety of scenarios and for a variety of objectives but many are now being used in hazardous areas such as radioactive material inspection bomb detection and deactivation manufacturing operations or in conditions where humans are unable to live e g in space underwater in high heat and clean up and containment of hazardous materials and radiation walking lifting speaking cognition and any other human activity are all attempted by robots many of today s robots are influenced by nature making bio inspired robotics a growing area defusing explosives seeking survivors in unstable ruins and investigating mines and shipwrecks are just a few of the activities that robots are designed to undertake this groundbreaking new volume presents a robotic process automation rpa software technique that makes it simple to create deploy and manage software robots that mimic human movements while dealing with digital systems and software software robots can interpret what s on a screen type the correct keystrokes traverse systems locate and extract data and do a wide variety of predetermined operations much like people software robots can do it quicker and more reliably than humans without having to stand up and stretch or take a coffee break

## DESIGN OF TRI-BAND L SHAPED PARASITIC PATCH ANTENNA

2023-08-09

the desired objective of this book is to investigate diversity and mutual coupling effects on mimo antenna designs for wlan wimax lte applications controlled with diversity and ground

modification techniques including equivalent circuit diagrams diversity techniques in mimo antennas leading to the performance improvement ratings are demonstrated and deliberated the book contributes towards the development of 2 1 vswr mimo antennas with diversity techniques for indoor outdoor applications for high data rate qos and snr the improved mimo antenna structures are investigated and presented in this book including part of massive mimo to provide the important aspects of emerging technology aimed at researchers professionals and graduate students in electrical engineering electromagnetics communications and signal processing including antenna theory and design smart antennas communication systems this book investigates real time mimo antenna designs for wlan wimax Ite applications covers effects of ecc meg tarc and equivalent circuit addresses the coupling and diversity aspects of antenna design problem for mimo systems focus on the mimo antenna designs for the real time applications exclusive chapter on 5g massive mimo along with case studies throughout the book

## **Robotic Process Automation**

### 2020-12-15

antennas and wave propagation is written for the first course on the same the book begins with an introduction that discusses the fundamental concepts notations representation and principles that govern the field of antennas a separate chapter on mathematical preliminaries is discussed followed by chapters on every aspect of antennas from maxwell s equations to antenna array analysis antenna array synthesis antenna measurements and wave propagation

### **MIMO Antennas for Wireless Communication**

2006

### **Antennas and Wave Propagation**

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