Metasurface Technologies Pte Ltd

Advanced Fiber Sensing Technologies
Wireless Information and Power Transfer: A New Paradigm for Green Communications
III-Nitrides Light Emitting Diodes: Technology and Applications
Proceedings of 2021 Chinese Intelligent Automation Conference
Nanoscience and Technology
Lab-on-Fiber Technology
New Directions in Thin Film Nanophotonics
Proceedings of 2nd International Conference on Artificial Intelligence: Advances and Applications
Wireless Power Transfer
Portable Spectroscopy and Spectrometry, Applications
Dielectric Metamaterials
Handbook of Terahertz Technologies
Manipulation of Near Field Propagation and Far Field Radiation of Surface Plasmon Polariton
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Experimental Relations of Gold (and Other Metals) to Light
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Electrodynamics of Metamaterials
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Proceedings of the 11th National Technical Seminar on Unmanned System Technology 2019
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IOT with Smart Systems
Infrared and Terahertz Detectors, Third Edition
Novel Millimetre Wave Antennas for MIMO and 5G Applications
Proceedings of the 12th National Technical Seminar on Unmanned System Technology 2020
CIGOS 2021, Emerging Technologies and Applications for Green Infrastructure
Toroidal Metamaterials
Advances in Communication Systems and Networks
Advances in Smart Communication Technology and Information Processing
Advances in Electrical and Computer Technologies

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Advanced Fiber Sensing Technologies Springer Nature
Wireless power transfer (WPT) is a promising technology used to transfer electric energy from a transmitter to a receiver wirelessly without wires through various methods and technologies using time-varying electric, magnetic, or electromagnetic fields. It is an attractive solution for many industrial applications due to its many benefits over wired connections. This book discusses the theory and practical aspects of WPT technology.
Wireless Information and Power Transfer: A New Paradigm for Green Communications Morgan & Claypool Publishers
The merging of metasurface and holography brings about unprecedented opportunities for versatile manipulation of light in terms of both far-field wavefront and near-field profile. In this book, a brief evolving history from surface plasmon polariton holography to metamaterial holography and finally to metasurface holography is introduced at first. Basic physical mechanisms that govern the phase modulation rules behind metasurface holography design are discussed later. Next, extended functionalities such as arbitrary polarization holography, vectorial holography, full-color holography, and hybrid holography achieved in the metasurface platform are presented. Surface wave and metagrating holography that bridges the on-chip surface wave and free-space wave is also introduced. In the end, we envisage practical applications of high-fidelity 3D holographic display, high-secure encryption, and high capacity digital encoding and also indicate remaining challenges based on metasurface holography.
III-Nitrides Light Emitting Diodes: Technology and Applications Springer Nature
The most comprehensive resource available on the many applications of portable spectrometers, including material not found in any other published work Portable Spectroscopy and Spectrometry: Volume Two is an authoritative and up-to-date compendium of the diverse applications for portable spectrometers across numerous disciplines. Whereas Volume One focuses on the specific technologies of the portable spectrometers themselves, Volume Two explores the use of portable instruments in wide range of fields, including pharmaceutical development, clinical research, food analysis, forensic science, geology, astrobiology, cultural heritage and archaeology. Volume Two features contributions by a multidisciplinary team of experts with hands-on experience using portable instruments in their respective areas of expertise. Organized both by instrumentation type and by scientific or technical discipline, 21 detailed chapters cover various applications of portable ion mobility spectrometry (IMS), infrared and near-infrared (NIR) spectroscopy, Raman and x-ray fluorescence (XRF) spectroscopy, smartphone spectroscopy, and many others. Filling a significant gap in literature on the subject, the second volume of Portable Spectroscopy and Spectrometry: Features a significant amount of content published for the first time, or not available in existing literature Brings together work by authors with assorted backgrounds and fields of study Discusses the central role of applications in portable instrument development Covers the algorithms, calibrations, and libraries that are of critical importance to successful applications of portable instruments Includes chapters on portable spectroscopy applications in areas such as the military, agriculture and feed, hazardous materials (HazMat), art conservation, and environmental science Portable Spectroscopy and Spectrometry: Volume Two is an indispensable resource for developers of portable instruments in universities, research institutes, instrument companies, civilian and government purchasers, trainers, operators of portable instruments, and educators and students in portable spectroscopy courses.
Proceedings of 2021 Chinese Intelligent Automation Conference Springer Nature
This book provides comprehensive information on the history and status quo of a new research field, which we refer to as Engineering Optics 2.0. The content covers both the theoretical basis and the engineering aspects in connection with various applications. The field of Engineering Optics employs optical theories to practical applications in a broad range of areas. However, the foundation of traditional Engineering Optics was formed several hundred years ago, and the field has developed only very gradually. With technological innovations in both the fabrication and characterization of microstructures, the past few decades have witnessed many groundbreaking changes to the bases of optics, including the generalizing of refraction, reflection, diffraction, radiation and absorption theories. These new theories enable us to break through the barriers in traditional optical technologies, yielding revolutionary advances in traditional optical systems such as microscopes, telescopes and lithography systems.
Nanoscience and Technology Springer Nature
This book focuses on a research field that is rapidly emerging as one of the most promising ones for the global optics and photonics community: the “lab-on-fiber” technology. Inspired by the well-established "lab on-a-chip" concept, this new technology essentially envisages novel and highly functionalized devices completely integrated into a single optical fiber for both communication and sensing applications. Based on the R&D experience of some of the world's leading authorities in the fields of optics, photonics, nanotechnology, and material science, this book provides a broad and accurate description of the main developments and achievements in the lab-on-fiber technology roadmap, also highlighting the new perspectives and challenges to be faced. This book is essential for scientists interested in the cutting-edge fiber optic technology, but also for graduate students.
Lab-on-Fiber Technology BoD – Books on Demand
This book presents breakthroughs in the design of Wireless Energy Harvesting (WEH) networks. It bridges the gap between WEH through radio waves communications and power transfer, which have largely been designed separately. The authors present an overview of the RF-EHNs including system architecture and RF energy harvesting techniques and existing applications. They also cover the idea of WEH in novel discoveries of information, the theoretical bounds in WEH, wireless sensor networks, usage of modern channel coding together with WEH, energy efficient resource allocation mechanisms, distributed self-organized energy efficient designs, delay-energy trade-off, specific protocols for energy efficient communication designs, D2D communication and energy efficiency, cooperative wireless networks, and cognitive networks.
New Directions in Thin Film Nanophotonics Springer
This book comprises select proceedings of the International Conference on Advances in Electrical and Computer Technologies 2020 (ICAECT 2020). The papers presented in this book are peer-reviewed and cover latest research in electrical, electronics, communication and computer engineering. Topics covered include smart grids, soft computing techniques in power systems, smart energy management systems, power electronics, feedback control systems, biomedical engineering, geo informative systems, grid computing, data mining, image and signal processing, video processing, computer vision, pattern recognition, cloud computing, pervasive computing, intelligent systems, artificial intelligence, neural network and fuzzy logic, broad band communication, mobile and optical communication, network security, VLSI, embedded systems, optical networks and wireless communication. The volume can be useful for students and researchers working in the different overlapping areas of electrical, electronics and communication engineering.
Proceedings of 2nd International Conference on Artificial Intelligence: Advances and Applications Cambridge University Press
This book presents novel and fundamental aspects of metamaterials, which have been overlooked in most previous publications, including chirality, non-reciprocity, and the Dirac-cone formation. It also describes the cutting-edge achievements of experimental studies in the last several years: the development of high-regularity metasurfaces in optical frequencies, high-performance components in the terahertz range, and active, chiral, nonlinear and non-reciprocal metamaterials in the microwave range. Presented here are unique features such as tunable metamaterials based on the

discharge plasma, selective thermal emission from plasmonic metasurfaces, and the classical analogue of the electromagnetically induced transparency. These most advanced research achievements are explained in understandable terms by experts in each topic. The descriptions with many practical examples facilitate learning, and not only researchers and experts in this field but also graduate students can read the book without difficulty. The reader finds how these new concepts and new developments are being utilized for practical applications.

Springer

This new edition of Infrared and Terahertz Detectors provides a comprehensive overview of infrared and terahertz detector technology, from fundamental science to materials and fabrication techniques. It contains a complete overhaul of the contents including several new chapters and a new section on terahertz detectors and systems. It includes a new tutorial introduction to technical aspects that are fundamental for basic understanding. The other dedicated sections focus on thermal detectors, photon detectors, and focal plane arrays.

Wireless Power Transfer Springer

This book includes research papers from the 11th National Technical Symposium on Unmanned System Technology. Covering a number of topics, including intelligent robotics, novel sensor technology, control algorithms, acoustics signal processing, imaging techniques, biomimetic robots, green energy sources, and underwater communication backbones and protocols, it will appeal to researchers developing marine technology solutions and policy-makers interested in technologies to facilitate the exploration of coastal and oceanic regions.

Portable Spectroscopy and Spectrometry, Applications Springer Nature

This book mainly focuses on the study of steering electromagnetic fields in near-field and far-field contexts involving plasmonic structures. It also offers a new approach to achieving full control of optical polarizations and potentially boosting the development in photonic information processing. A new in-plane phase modulation method is proposed and described, by means of which a series of optical beams were realized with nanostructures in metal surfaces, such as a plasmonic Airy beam, broad band focusing beam, and demultiplexing, collimated beam, as well as an optical orbital angular momentum (OAM) beam. Further, the book presents a plasmonic polarization generator, which can reconfigure an input polarization to all kinds of states simultaneously.

Dielectric Metamaterials Springer Nature

This conference proceeding is a collection of the papers accepted by the CENet2021 – the 11th International Conference on Computer Engineering and Networks held on October 21-25, 2021 in Hechi, China. The topics focus but are not limited to Internet of Things and Smart Systems, Artificial Intelligence and Applications, Communication System Detection, Analysis and Application, and Medical Engineering and Information Systems. Each part can be used as an excellent reference by industry practitioners, university faculties, research fellows and undergraduates as well as graduate students who need to build a knowledge base of the most current advances and state-of-practice in the topics covered by this conference proceedings. This will enable them to produce, maintain, and manage systems with high levels of trustworthiness and complexity.

Handbook of Terahertz Technologies Springer Nature

The book provides an overview of III-nitride-material-based light-emitting diode (LED) technology, from the basic material physics to the latest advances in the field, such as homoepitaxy and heteroepitaxy of the materials on different substrates. It also includes the latest advances in the field, such as approaches to improve quantum efficiency and reliability as well as novel structured LEDs. It explores the concept of material growth, chip structure, packaging, reliability and application of LEDs. With spectra coverage from ultraviolet (UV) to entire visible light wavelength, the III-nitride-material-based LEDs have a broad application potential, and are not just limited to illumination. These novel applications, such as health & medical, visible light communications, fishery and horticulture, are also discussed in the book.

Manipulation of Near Field Propagation and Far Field Radiation of Surface Plasmon Polariton Springer

This book comprises the proceedings of the 12th National Technical Symposium on Unmanned System Technology 2020 (NUSYS'20) held on October 27–28, 2020. It covers a number of topics, including intelligent robotics, novel sensor technology, control algorithms, acoustics signal processing, imaging techniques, biomimetic robots, green energy sources, and underwater communication backbones and protocols, and it appeals to researchers developing marine technology solutions and policy-makers interested in technologies to facilitate the exploration of coastal and oceanic regions.

Optical and Wireless Technologies Springer Science & Business Media

The emerging field of semiconductor quantum optics combines semiconductor physics and quantum optics, with the aim of developing quantum devices with unprecedented performance. In this book researchers and graduate students alike will reach a new level of understanding to begin conducting state-of-the-art investigations. The book combines theoretical methods from quantum optics and solid-state physics to give a consistent microscopic description of light-matter- and many-body-interaction effects in low-dimensional semiconductor nanostructures. It develops the systematic theory needed to treat semiconductor quantum-optical effects, such as strong light-matter coupling, light-matter entanglement, squeezing, as well as quantum-optical semiconductor spectroscopy. Detailed derivations of key equations help readers learn the techniques and nearly 300 exercises help test their understanding of the materials covered. The book is accompanied by a website hosted by the authors, containing further discussions on topical issues, latest trends and publications on the field. The link can be found at www.cambridge.org/9780521875097.

Nonlocal Continuum Field Theories Woodhead Publishing

This book gathers papers addressing state-of-the-art research in all areas of information and communication technologies and their applications in intelligent computing, cloud storage, data mining and software analysis. It presents the outcomes of the Fifth International Conference on Information and Communication Technology for Intelligent Systems (ICTIS 2021), held in Ahmedabad, India. The book is divided into two volumes. It discusses the fundamentals of various data analysis techniques and algorithms, making it a valuable resource for researchers and practitioners alike.

Catenary Optics Springer Nature

This book is a compilation of research work in the interdisciplinary areas of electronics, communication, and computing. This book is specifically targeted at students, research scholars and academicians. The book covers the different approaches and techniques for specific applications, such as particle-swarm optimization, Otsu's function and harmony search optimization algorithm, triple gate silicon on insulator (SOI)MOSFET, micro-Raman and Fourier Transform Infrared Spectroscopy (FTIR) analysis, high-k dielectric gate oxide, spectrum sensing in cognitive radio, microstrip antenna, Ground-penetrating radar (GPR) with conducting surfaces, and digital image forgery detection. The contents of the book will be useful to academic and professional researchers alike.

Semiconductor Quantum Optics Springer

This book provides an overview of the use of toroidal moments. This includes methods of excitation, numerical analysis, and experimental measurements of associating structures. Special emphasis is placed on understanding the fundamental physics, characteristics, and real-world applications of toroidal multipoles. This book also covers a variety of both planar and 3D meta-atom and metamolecule schemes capable to sustain toroidal moments across a wide range of spectrum. It discusses the implementation of innovative approaches, for exploring the spectral features and excitation methodologies, predicting the properties of the correlating metasystems in their excited states. An applicable text for undergraduate, graduate, and postgraduate students, this book is also of interest to researchers, theorizers, and experimentalists working in optical physics, photonics, and nanotechnology.

Advanced Informatics for Computing Research Springer Nature

This book presents the selected peer-reviewed papers from the International Conference on Communication Systems and Networks (ComNet) 2019. Highlighting the latest findings, ideas, developments and applications in all areas of advanced communication systems and networking, it covers a variety of topics, including next-generation wireless technologies such as 5G, new hardware platforms, antenna design, applications of artificial intelligence (AI), signal processing and optimization techniques. Given its scope, this book can be useful for beginners, researchers and professionals working in wireless communication and networks, and other allied fields.

Experimental Relations of Gold (and Other Metals) to Light Springer Nature

Local electromagnetic field fluctuations and related enhancement of nonlinear phenomena in metal-dielectric composites near the percolation threshold (percolation composites) have recently become an area of active study, because of the many fundamental problems involved and the high potential for various applications. It has been recognized recently that local field fluctuations can be especially large in the optical and infrared spectral ranges due to the surface plasmon resonance in metallic granules and their clusters. The strong fluctuations of the local electric and magnetic fields result in the enhancement of various optical effects: anomalous absorption, Rayleigh and Raman scattering, generation of the higher harmonic, Kerr nonlinearity, etc. Nonlinear percolation composites are potentially of great practical importance as media with intensity-dependent dielectric functions and, in particular, as nonlinear filters and optical bistable elements. The optical response of nonlinear composites can be tuned, for example, by controlling the volume fraction and morphology of constituents. This book presents a new theory of electromagnetic field distribution and nonlinear optical processes in metal-dielectric composites. The new approach is based on a percolation theory and the fact that the problem of optical excitations in percolation composites mathematically maps the Anderson transition problem in quantum mechanics. The theory predicts localization of the excitations (surface plasmons) in percolation composites and describes in detail the localization pattern that allows one to obtain relatively simple expressions for the enhancement of linear and nonlinear optical responses. Thistheory is supported by recent near-field experiments where the surface plasmon localization has been directly observed in the percolating composites in optical and microwave bands.