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Novel Technologies for Microwave and Millimeter-Wave Applications Jean-Fu Kiang, 2014-01-15

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Infrared and Millimeter-wave Engineering Hal Buscher,1993

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Proceedings of the Augmented Visual Display (AVID) Research Workshop Mary K. Kaiser,1993

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Generation and Application of High Power Microwaves R.A Cairns,A.D.R. Phelps,2020-08-17

Written at the graduate level *Generation and Application of High Power Microwaves* discusses the basic physics of the generation of microwave and radiofrequency waves in the megawatt power range and the application of these ideas to a range of devices such as klystrons gyrotrons and free electron lasers The book also contains chapters covering the transmission of the power through waveguides and the problems associated with mode conversion in transmission lines The main application area covered is the heating and current drive in tokamaks and other devices for research into controlled nuclear fusion Other applications of high power microwave technology are not neglected and among those discussed are multiple charged ion and soft x ray sources electron spin resonance spectroscopy advanced materials processing millimeter wave radar and supercolliders

Soft Computing Methods for Microwave and Millimeter-Wave Design Problems Narendra Chauhan,Machavaram Kartikeyan,Ankush Mittal,2012-02-06 The growing commercial market of Microwave Millimeter wave industry over the past decade has led to the explosion of interests and opportunities for the design and development of microwave components The design of most microwave components requires the use of commercially

available electromagnetic EM simulation tools for their analysis In the design process the simulations are carried out by varying the design parameters until the desired response is obtained The optimization of design parameters by manual searching is a cumbersome and time consuming process Soft computing methods such as Genetic Algorithm GA Artificial Neural Network ANN and Fuzzy Logic FL have been widely used by EM researchers for microwave design since last decade The aim of these methods is to tolerate imprecision uncertainty and approximation to achieve robust and low cost solution in a small time frame Modeling and optimization are essential parts and powerful tools for the microwave millimeter wave design This book deals with the development and use of soft computing methods for tackling challenging design problems in the microwave millimeter wave domain The aim in the development of these methods is to obtain the design in small time frame while improving the accuracy of the design for a wide range of applications To achieve this goal a few diverse design problems of microwave field representing varied challenges in the design such as different microstrip antennas microwave filters a microstrip via and also some critical high power components such as nonlinear tapers and RF windows are considered as case study design problems Different design methodologies are developed for these applications The presents soft computing methods their review for microwave millimeter wave design problems and specific case study problems to infuse better insight and understanding of the subject

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International Journal of Infrared and Millimeter Waves ,2001 *Chinese Journal of Infrared and Millimeter Waves* ,1995 **Millimeter Wave Rectifying Antenna for Wireless Power Beaming Applications Operating in the W-band** Gil Yemini,2014 Millimeter Wave Wireless Communications Theodore S. Rappaport,Robert W. Heath Jr.,Robert C. Daniels,James N. Murdock,2015 The Definitive Comprehensive Guide to Cutting Edge Millimeter Wave Wireless Design This is a great book on mmWave systems that covers many aspects of the technology targeted for beginners all the way to the advanced users The authors are some of the most credible scholars I know of who are well respected by the industry I highly recommend studying this book in detail Ali Sadri Ph D Sr Director Intel Corporation MCG mmWave Standards and Advanced Technologies Millimeter wave mmWave is today s breakthrough frontier for emerging wireless mobile cellular networks wireless local area networks personal area networks and vehicular communications In the near future mmWave products systems theories and devices will come together to deliver mobile data rates thousands of times faster than today s existing cellular and WiFi networks In Millimeter Wave Wireless Communications four of the field s pioneers draw on their immense experience as researchers entrepreneurs inventors and consultants empowering engineers at all levels to succeed with mmWave They deliver exceptionally clear and useful guidance for newcomers as well as the first

complete desk reference for design experts The authors explain mmWave signal propagation mmWave circuit design antenna designs communication theory and current standards including IEEE 802 15 3c Wireless HD and ECMA WiMedia They cover comprehensive mmWave wireless design issues for 60 GHz and other mmWave bands from channel to antenna to receiver introducing emerging design techniques that will be invaluable for research engineers in both industry and academia Topics include Fundamentals communication theory channel propagation circuits antennas architectures capabilities and applications Digital communication baseband signal channel models modulation equalization error control coding multiple input multiple output MIMO principles and hardware architectures Radio wave propagation characteristics indoor and outdoor applications Antennas antenna arrays including on chip and in package antennas fabrication and packaging Analog circuit design mmWave transistors fabrication and transceiver design approaches Baseband circuit design multi gigabit per second high fidelity DAC and ADC converters Physical layer algorithmic choices design considerations and impairment solutions and how to overcome clipping quantization and nonlinearity Higher layer design beam adaptation protocols relaying multimedia transmission and multiband considerations 60 GHz standardization IEEE 802 15 3c for WPAN Wireless HD ECMA 387 IEEE 802 11ad Wireless Gigabit Alliance WiGig

Microwaves, Millimeter Wave and Terahertz Liquid Crystals Anyong Qing, Yizhe Zhao, Zhiyong Zhang, 2024-03-05 This book is the first ever monograph on nematic liquid crystals for microwaves millimeter waves and terahertz waves It presents the first hand independent studies on nematic liquid crystals for microwaves millimeter waves and terahertz waves This book opens with an introduction to generic liquid crystals and a retrospective review about nematic liquid crystals in microwaves millimeter waves and terahertz waves Attention is then focused on the latest in house progress on microwave millimeter wave and terahertz nematic liquid crystals Synthesis and characterization of novel nematic liquid crystals are first presented followed by indigenous technologies to manufacture functional nematic liquid crystal devices for microwaves millimeter waves and terahertz waves A few self developed representative advanced functional devices are shown to demonstrate the promising perspective of liquid crystals for not only microwaves millimeter waves and terahertz waves but also many other non display applications The presented studies will attract scientists engineers and students from various disciplines such as materials chemical electrical biological and biomedical engineering The book is intended for undergraduates graduates researchers professionals and industrial practitioners who are interested in developing novel liquid crystals and further extending liquid crystals beyond display

New Technical Books New York Public Library, 1985

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