High-Power Microwave Sources and Technologies
Robert J. Barker (Editor), Edl Schamiloglu (Editor)

DESCRIPTION

Electrical Engineering High-Power Microwave Sources and Technologies A volume in the IEEE Press Series on RF and Microwave Technology

Roger D. Pollard and Richard Booton, Series Editors

Written by a prolific group of leading researchers, High-Power Microwave Sources and Technologies focuses primarily on the high-power microwave (HPM) technology most appropriate for military applications. It highlights the advances achieved from 1995 to 2000 as the result of a US Department of Defense (DoD) funded, $15 million Multidisciplinary University Research Initiative (MURI) program. The grant created a synergy between researchers in the DoD laboratories and the academic community, and established links with the microwave vacuum electronics industry, which has led to unprecedented collaborations that transcend laboratory and disciplinary boundaries. This essential reference provides the history, state-of-the-art, and possible future of HPM source research and technologies. The first alternative to the multiplicity of detailed applications-based HPM books and journal articles, this book familiarizes the reader with recent advances in this rapidly changing field. It presents a compendium of valuable information on HPM sources, representing significant enabling technologies, including beam and rf control, cathodes, windows, and computational techniques. The era of utilizing computational techniques to electronically design an HPM source prior to actually building the hardware has arrived. Gain insight into proven techniques and solutions that will enhance your source design. High-Power Microwave Sources and Technologies is an invaluable resource to researchers active in the field, faculty, graduate and post-graduate students. Special Note: All royalties realized from the sale of this book will fund the future research and publications activities of graduate students in the HPM field.
ABOUT THE AUTHOR

About the Editors Robert J. Barker is the program manager for plasma physics at the US Air Force Office of Scientific Research (AFOSR) in Arlington, VA. His prior career as a computational plasma physicist took him from the US Naval Research Laboratory, Washington, DC, to the Mission Research Corporation, Washington, DC, where he worked on improvements to and applications of both the 2D Magic and 3D SOS plasma simulation codes. His current interests include microwave/millimeter-wave generation, pulsed power, medical/biological effects, electromagnetic/electrothermal launchers, air plasmas, charged particle beam generation & propagation, explosive power generation, and computational physics. Dr. Barker serves as a colonel in the US Air Force Reserves, assigned to the Directed Energy Directorate of the US Air Force Research Laboratory, Albuquerque, NM. In 1998 he was elected a Fellow of the Air Force Research Laboratory, Dr. Barker is a Fellow of the IEEE and a member of the American Physical Society.

Edl Schamiloglu is the Gardner-Zemke Professor of Electrical and Computer Engineering at the University of New Mexico, Albuquerque, where he also directs the Pulsed Power and Plasma Science Laboratory. He performs extensive work in the physics and technology of charged particle beam generation and propagation, high-power narrow band and ultra-wideband microwave sources, plasma physics and diagnostics, and electromagnetic wave propagation. Dr. Schamiloglu is the associate editor of the IEEE Transactions on Plasma Science. He is a senior member of the IEEE and an elected member of the IEEE Nuclear and Plasma Sciences Society's Administrative Committee (NPSS AdCom). Also, in 1991 Dr. Schamiloglu was a member of the Delphi/Minerva team that received the Sandia National Laboratories Research Excellence Award. Furthermore, he received the 1992 School of Engineering Research Excellence Award, and was recently awarded the title of Regents? Lecturer (1996?1999).

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