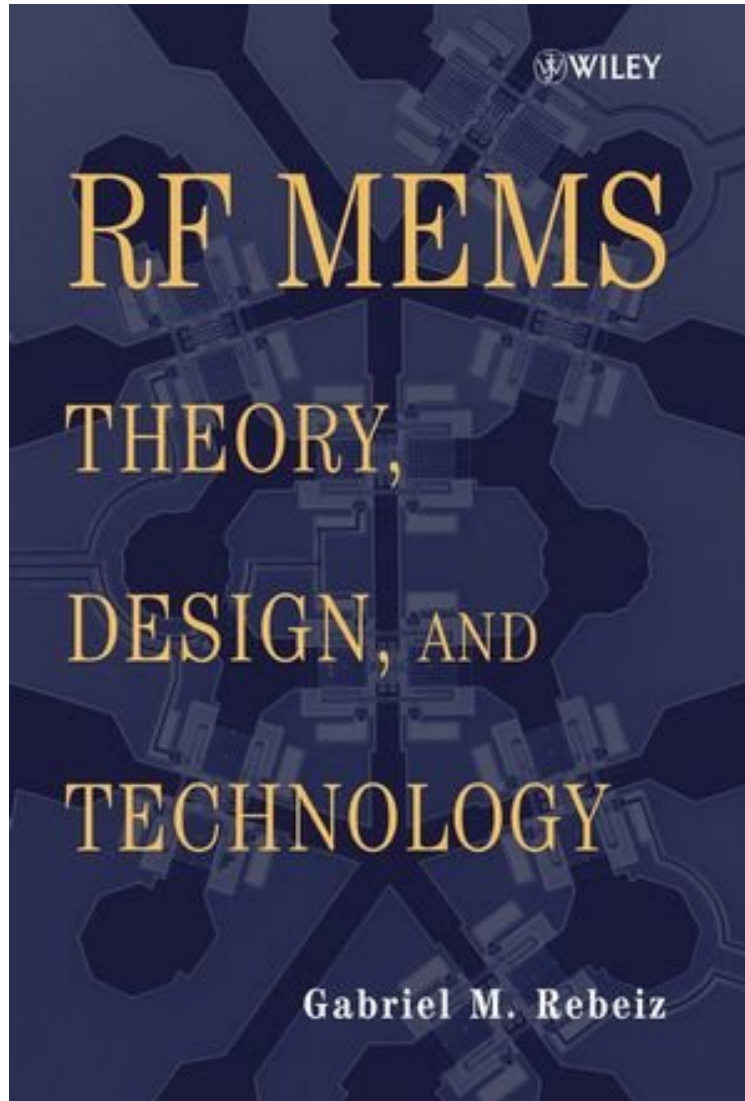


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## RF MEMS: Theory, Design, and Technology

*Gabriel M. Rebeiz*

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**Gabriel M. Rebeiz : RF MEMS: Theory, Design, and Technology** before purchasing it in order to gage whether or not it would be worth my time, and all praised RF MEMS: Theory, Design, and Technology:

0 of 0 people found the following review helpful. Very understandableBy CA momStarting from zero (ME by training), this book is very understandable seems thorough. I like the voice, too4 of 5 people found the following review helpful. The Best Book for RF MEMSBy A CustomerRF MEMS is a hot development area for wireless communications and radar systems, and this is by far the best book available. There are many unique features and

details that will be valuable for engineers, researchers, and students. The coverage is encyclopedic, authoritative, and deep, deep, deep. The first chapter is an overview of the current status of systems applications. Chapters 2 and 3 give an excellent analysis of the fundamental mechanical and electromagnetic properties of MEMS structures. Chapters 4 through 8 cover all aspects of switches. Many of the most promising applications are for switches, and Dr. Rebeiz' group at Michigan has been a world leader in this area. Phase shifters are discussed in Chapters 9 and 10. There is coverage for both switched-line phase shifters, and the newer distributed phase shifters. Chapter 11 is on MEMS varactors and tunable oscillators. Chapter 12 gives a good summary of current work in MEMS inductors. Chapter 13 gives information on recent research in reconfigurable networks, filters, and antennas. Chapter 14 is a careful analysis of phase noise in MEMS devices. Chapter 15 is a thoughtful discussion of the RF MEMS field and its prospects. Throughout the book, fabrication, packaging, and reliability issues are discussed in detail, and the different contributions of groups around the world are included. Each chapter includes an excellent set of references for investigating topics in more detail.

0 of 1 people found the following review helpful. RF MEMS is still a mystery to you? By A Customer As the authors, Gabriel M. Rebeiz and his students say, their book RF MEMS is really deep. It can be considered as a survey, as a library. So the novice in working with MEMS is protected from being hours in an official library getting an overview by inspecting lots of journals and reading lots of papers. The expert will get an excellent overview about still unsolved problems or difficulties as existing by end of 2002, which is one of the strengths of this book. It tells not only the nice things about this new technology, but it covers and mentions all the problems which still are unsolved, or just make the difference between using this technology for mass-production with respect to low cost and high-reliability, or sticking to some special solutions where price is no showstopper at all. There are plenty of tables, overviews, drawings, descriptions, variants in this book, and sometimes one gets the feeling of reading in an encyclopedia about RF MEMS. This book can be highly recommended to everybody who is engaged in this field: either because he (or she) is curious what RF MEMS is about, or if he (or she) is an expert in this field and wants to have a survey about competitors or open issues. Both can easily check if this new technology can help in solving their problems, or if somebody has already solved their problems. This book is definitely not as other ones: for my opinion it is worth each page of reading.

Ultras-small Radio Frequency and Micro-wave Microelectromechanical systems (RF MEMs), such as switches, varactors, and phase shifters, exhibit nearly zero power consumption or loss. For this reason, they are being developed intensively by corporations worldwide for use in telecommunications equipment. This book acquaints readers with the basics of RF MEMs and describes how to design practical circuits and devices with them. The author, an acknowledged expert in the field, presents a range of real-world applications and shares many valuable tricks of the trade.

"...an excellent book for graduate students or practicing engineers in the field of RF microwave technology who need to learn about the latest developments in the RF MEMS world." (IEEE Electrical Insulation Magazine, November/December 2004) "It provides the most comprehensive survey of this new and important technology." (Microwave Journal, January 2004) "...an invaluable addition to the research library, and highly recommended to all interested in this fascinating technology." (Microwaves RF, June 2003)

From the Back Cover Practical and theoretical coverage of RF MEMS for circuits and devices New RF and microwave frequency MEMS (microelectromechanical systems) have potentially enormous and widespread applications in the telecommunications industry. Components based on this technology such as switches, varactors, and phase shifters exhibit virtually no power consumption or loss, making them ideally suited for use in modern telecommunications and wireless devices. This book sets out the basics of RF MEMS and describes how to design practical devices and circuits. As well as covering fundamentals, Gabriel Rebeiz offers expert tips for designers and presents a range of real-world applications. Throughout, the author utilizes actual engineering examples to illustrate basic principles in theory and practice. Detailed discussion of cutting-edge fabrication and packaging techniques is provided. Suitable as a tutorial for electrical and computer engineering students, or as an up-to-date reference for practicing circuit designers, RF MEMS provides the most comprehensive available survey of this new and important technology.

About the Author GABRIEL M. REBEIZ received his PhD from the California Institute of Technology. He was the recipient of the National Science Foundation Presidential Young Investigator Award, and in 2000 was the corecipient of the IEEE Microwave Prize. A Fellow of the IEEE and a consultant to Rockwell, Samsung, Intel, Standard MEMS, and Agilent, he has published extensively in the field of microwave technology and in the area of RF MEMS. He was at the University of Michigan, Ann Arbor, and is now a Professor of Electrical and Computer Engineering at the University of California, San Diego.