ADVANCED DESIGN TECHNIQUES AND REALIZATIONS OF MICROWAVE AND RF FILTERS
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Being asked to review the manuscript of Advanced Design Techniques and Realizations of Microwave and RF filters was an honor. The title truly represents the book’s focus and its contents.

Filters are the most important passive components used in RF and microwave subsystems and instruments to obtain a precise frequency response. In the early years of filter development, significant progress was made in waveguide and planar TEM filters. During the past two decades, filter technology has advanced in the area of emerging applications for both military and commercial markets. Several major developmental categories in filter technology are included: performance improvement, development of CAD tools, full-wave analysis, new structures and configurations, and advanced materials and associated technologies. Advanced materials/technologies such as high-temperature superconductor substrates, micromachining, multilayer monolithic, low-temperature co-fired ceramic, and liquid-crystal polymer are commonly used in the development of advanced filters. Some recent applications of filters include dual-band communication, such as wireless local area networks and ultrawideband communication and imaging.

This book treats the subject to meet the needs for advanced filter design based on planar and waveguide structures that can satisfy the ever-increasing demand for design accuracy, reliability, fast development times, and cost-effective solutions. The topics discussed include analyses, design, modeling, fabrication, and practical considerations for both ladder and bridged filters. Modern design techniques are discussed for a wide variety of microwave filters, including comprehensive analyses and modeling of structures. These topics are self-contained, with practical aspects addressed in detail. Extensive design information in the form of equations, tables, graphs, and solved examples are included. To aid in solving filter-related design problems from specifications to realization of the end-product, the book provides a unique integration of theory and practical aspects of filters. Simple design equations and numerous practical examples are included which simplify the concepts of advanced filter design. With emphasis on theory,