

# Guest Editors' Overview

THE 1998 International Microwave Symposium (IMS), together with the Radio Frequency Integrated Circuits (RFIC) Symposium and Automatic RF Techniques Group (ARTG) Meeting in Baltimore, MD, resulted in a record number of paper presentations, record attendance, and the submission of 131 expanded IMS papers and 21 RFIC papers for publication in the Special Symposium Issue of the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES. Of these, 47 IMS papers and nine RFIC papers were accepted for this TRANSACTIONS, with an acceptance ratio of 36%. In addition, this TRANSACTIONS also includes one paper from ARFTG, selected with editorial assistance from John Sevic. The Guest Editors of this Special Issue issue made a great effort to include as many high-quality papers as possible. However, due to tight publication schedule, only papers requiring minimal revisions could be included in this TRANSACTIONS. We advised the authors of a number of excellent papers which required more extensive revisions to resubmit for a subsequent issue of this TRANSACTIONS. We hope to see many of these papers published in the future.

This Special Issue covers a broad range of subjects, with most recent theoretical and applied work with topics capturing the theme "Progress Through Microwaves." Readers may enjoy the historical perspective prepared by Geoffrey Hyde, which describes some of the many important contributions made by engineers in the Baltimore-Washington, DC area. The Guest Editors have placed the selected papers under six wide-ranging topics, representative of the diversity of interests that fall within the international microwave community. The international nature of the symposium is well represented by approximately 60% contributions by authors outside the

U.S. The emphasis of the RFIC papers is on the circuits and systems for wireless applications. Using various available CMOS and gallium arsenide (GaAs) technologies, the papers present component and subsystem designs for mixers, low-noise amplifiers, RF front-end filters, high-frequency modulators, tunable capacitors, phase splitters, etc.

We would like to thank all the authors for their contributions. We especially thank all the reviewers. Many reviewers were asked to provide expert advice on one or more papers, and they had a difficult challenge in responding to the tight deadlines. We would also like to acknowledge the help of Roger Kaul and other members of the program committee for their help. In addition, we would like to offer a special thanks to Jeannie Pugh and Danielle Herrmann, The Johns Hopkins University, Baltimore, MD, for their invaluable help in dealing with the manuscripts, and Mary Hoff, COMSAT Laboratories, Clarksburg, MD, for providing administrative support.

CHARLES R. WESTGATE, *Guest Editor, IMS*  
Whiting School of Engineering  
The Johns Hopkins University  
Baltimore, MD 21218-2681 USA

RAMESH K. GUPTA, *Guest Editor, IMS*  
COMSAT Laboratories  
Clarksburg, MD 20871 USA

SAYFE KIAEI, *Guest Editor, RFIC*  
Wireless Technology Center  
Broadband Products Operations  
Motorola Inc.  
Austin, TX 78721 USA

Publisher Item Identifier S 0018-9480(98)09652-5.



**Charles R. Westgate** (M'67-SM'74) received the B.E.E. degree from Rensselaer Polytechnic Institute, Troy, NY, in 1962, and the M.A. and Ph.D. degrees from Princeton University, Princeton, NJ, in 1964 and 1966, respectively.

Since 1966, he has been on the faculty of The Johns Hopkins University, Baltimore, MD, where he holds the W. B. Kouwenhoven Chair of Electrical Engineering. He also holds a joint appointment of Principal Professional Staff of the Applied Physics Laboratory. He has held numerous academic posts, including Associate Dean and Interim Dean of Engineering, and currently directs the very large part-time masters degree program in engineering at Johns Hopkins. He has supervised over 30 doctoral dissertations, many in the microwave area. He has been a consultant to numerous industrial firms and government agencies. His research interests are in microwave and high-speed circuits and devices.



**Ramesh K. Gupta** (S'77–M'80–SM'86) received the B.Sc. (with honors) in electronics and communications engineering from Punjab University, Chandigarh, India, in 1974, the M.Sc. and Ph.D. degrees in electrical engineering from the University of Alberta, Edmonton, AB, Canada, in 1976 and 1980, respectively, and the MBA degree from the Wharton School of Business, University of Pennsylvania, Philadelphia, in 1989.

In 1980, he joined COMSAT Laboratories, Clarksburg, MD, where he is Managing Director of the RF and Satellite Technologies Group. He has contributed to the application of hybrid microwave integrated circuit (MIC) and GaAs monolithic-microwave integrated-circuit (MMIC) technology in advanced satellite subsystems, such as wide-band microwave switch matrix (MSM) arrays, a 120-Mbit/s CQPSK on-board modem, and active beam-forming networks for single- and multibeam *Ku*-band phased-array antennas, as well as space qualification of GaAs MMIC hardware. He also contributed to the spacecraft and ground network development for the INTELSAT and Inmarsat satellite programs. Recently, he directed

the development of ground segment consisting of Hub equipment and satellite mobile terminals for INSAT Mobile Satellite Services (MSS). The equipment was successfully installed and field tested in Bangalore, India, in February 1998. He has also offered courses on strategic management and technology planning at the University of Maryland at College Park. He has authored or co-authored over 60 papers on solid-state devices and circuits, GaAs MMIC's, advanced microwave subsystems, and satellite systems. He contributed a chapter on satellite communications to the *Gallium Arsenide Applications Handbook, Volume I*, I. Bahl and D. Fisher, Eds. (New York: Academic, 1995). He also holds four patents.

Dr. Gupta has served as vice-chairman (1987–1988) and chairman (1988–1989) of the Washington, DC/Northern Virginia Chapter of the IEEE Microwave Theory and Techniques Society (MTT-S). He serves on the IEEE MTT-S Technical Subcommittee on Wireless Communications and IMS Technical Program Committee (TPC). He was a Punjab University Merit Scholar (1970–1974), and was awarded the Alberta Government Telephones Centennial Fellowship (1976–1979) for graduate research in telecommunications. In 1992, he was a co-recipient of the Best paper Award at the 9th International Conference on Digital Satellite Communications, Copenhagen, Denmark. He received the 1994 COMSAT Laboratories Research Award for development of beam-forming technology using GaAs MMIC's for *Ku*-band multibeam phased-array antennas.

**Sayfe Kiaei** (S'86–M'87–SM'93) received the Ph.D. degree from Washington State University, Pullman, in 1987.

From 1985 to 1986, he was with Boeing Research and Technology Center. Since 1993, he has been with Motorola Inc., Wireless Technology Center and Broadband Products Division, Austin, TX. Prior to joining Motorola Inc., he was an Associate Professor with the Department of Electrical Engineering, Oregon State University (1987–1993), and Associate Director of the NSF Center for the Design of mixed-mode analog/Digital IC's (CDADIC) (1988–1997). His current research activities includes design of high-performance mixed-signal integrated circuits (IC's), systems, and circuits for communication applications, and digital signal processing (DSP). He has authored several book chapters and over 30 papers in the fields of wireless communications, DSP, and mixed-signal CMOS IC's.

Dr. Kiaei was the associate editor of IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS (1993–1996). He is the general co-chair of the International Symposium on Low-Power Electronics, RFIC Symposium Steering Committee member and publicity chair, and a member of the Technical Program Committee of a number of conferences. He was the recipient of the IEEE Circuits and Systems Society Darling Best Paper Award in 1994, and was the recipient of the Loyd–Carter Award for the best teacher in the College Of Engineering, Oregon State University, Corvallis, in 1992.