

Guest Editors' Overview

THE excellent technical program of 413 papers presented at the 1997 International Microwave Symposium (IMS), as described in this issue by K. C. Gupta, resulted in a record number of 147 papers being submitted for the Special Symposium Issue of the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES. In addition to the papers from IMS, seven RFIC papers, and five ARFTG papers (an innovation this year) were submitted. Instructions from the Transactions Editor were to select a total of 45–50 papers. The excellent quality of most of the submitted papers has made selection of the papers to be published in this Special Issue very difficult. The final selection was a total of 49 papers, consisting of 44 IMS papers, four RFIC papers, and one ARFTG paper, for an overall acceptance rate of 32%.

This Special Issue illustrates the continuing resurgence of the microwave industry that was observed in 1996. While outstanding papers were written in other areas, the increasing commercial applications trend continues, principally in the "wireless" area. The papers selected represent a healthy balance between theory, technology, and applications, and also a balance between papers from the U.S. and other countries.

Publisher Item Identifier S 0018-9480(97)08917-5.



Richard C. Booton, Jr. (S'48–A'49–M'55–F'69–LF'92) was born in Texas. He received the B.S. degree in electrical engineering and the M.S. degree in mathematics from Texas A&M University, College Station, in 1948, and the Sc.D. degree in electrical engineering from the Massachusetts Institute of Technology (MIT), Cambridge, in 1952.

He was a Faculty Member of MIT until 1957, and while there his research interests were time-varying and nonlinear systems. From 1957 to 1988, he was with TRW, where he participated in projects for missile guidance, space communication, telephone switching, and microelectronic and microwave/millimeter technology. He served as Chief Scientist of the Electronic Systems Group. Upon retirement from TRW, he taught for two years at the University of California at Los Angeles (UCLA), and directed the Center for High Frequency Electronics. In 1990, he moved to the University of Colorado at Boulder, where he served as the Director of the Center for Microwave/Millimeter-Wave Computer-Aided Design and taught electromagnetic courses. He is currently retired and resides in Boulder, CO. He has authored

Computational Methods for Electromagnetics and Microwaves (New York: Wiley).

Dr. Booton's IEEE activities include service on the Board of Governors of the Aerospace and Electronic Systems Society, chairman of the LA Chapter on Circuit Theory, Chairman of the Development Committee of the LA Council, chairman of the LA South Bay Section, and technical chairman and board member of WINCON. He served on the AIAA Communications Committee and was general chairman and program chairman for several AIAA Communication Satellite Conferences. He was the recipient of the Browder J. Thompson Memorial Prize and the IEEE Centennial Medal.

The selection process depends, of course, on the service of many reviewers. We wish to thank all the reviewers for their assistance on a very tight time schedule, especially those who responded to a last-minute plea for assistance.

The IMS Guest Editor would like to thank Dr. Claude Weil, General Chairman of the 1997 IMS, for the opportunity to be involved, and also to express his appreciation to Dr. Kuldip C. Gupta and Helen Frey for their assistance. This issue would not have been possible without Helen.

RICHARD C. BOOTON, JR., *Guest Editor for IMS*
Boulder, CO 80302 USA

FAZAL ALI, *Guest Editor for RFIC*
Nokia Mobile Phones
San Diego, CA 92121 USA

ROGER B. MARKS, *Guest Editor for ARFTG*
National Institute of Standards and Technology
Boulder, CO 80303 USA



Fazal Ali (S'82–M'83–SM'90) received the B.S. in physics and applied mathematics, B.S.E.S. and M.S.E.E. degrees from Washington University, Seattle, and is currently working toward the Ph.D. degree.

He has been involved in the design and development of RF and Microwave IC's for the last 14 years. In 1996, he joined Nokia Mobile Phones, San Diego, CA, where he is currently a Manager of RF technology, leading the effort of 3-V RF engine development. Prior to joining Nokia, he worked at Westinghouse, Pacific Monolithics, and Avantek(HP) in various technical and management roles. His RF/microwave IC design and product development background using MESFET, PHEMT, and HBT technologies include gain blocks, LNA's, power amplifiers, phase shifters, switches, attenuators, frequency converters (up/down/image-reject), oscillators, multifunction transceivers, and MMIC-based sub-systems covering a wide frequency range from 500 MHz to 40 GHz. He has also served as Principal Investigator and Program Manager on several R&D projects. From 1986 to 1991, he introduced and taught the first graduate course

in GaAs MMIC design as an Adjunct Professor at the University of California at Berkeley and Santa Clara University. He has authored or co-authored over 60 technical publications, five invited presentations, and edited and co-authored three books on GaAs IC technology: *HEMTs and HBTs: Devices, Fabrication and Circuits* (Norwood, MA: Artech House, 1991), *Advanced GaAs MMIC Technology* (London, U.K.: MEPL, 1989), and *Microwave and Millimeter-Wave Heterostructure Transistors and Their Applications* (Norwood, MA: Artech House, 1989). He holds five U.S. patents and 15 disclosures in IC design techniques.

Mr. Ali is a member of Eta Kappa Nu and Omicron Delta Kappa. He serves on the editorial review board of the IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES and IEEE MICROWAVE AND GUIDED WAVE LETTERS. He serves on the Technical Program Committee of the IEEE International Microwave Symposium, RFIC, and GaAs IC Symposia. He is presently the chairman of the MTT-6 Technical Committee on Microwave and Millimeter-Wave Integrated Circuits of the MTT-S-ADCOM. He was the recipient of the 1993 Westinghouse Corporate Signature Award of Excellence for contributions to HBT power amplifiers, the 1994 Award of Excellence for contributions to control circuits, and several special performance awards.



Roger B. Marks (S'86–M'87–SM'91) received the A.B. degree in physics from Princeton University, Princeton, NJ, in 1980, and the Ph.D. degree in applied physics from Yale University, New Haven, CT, in 1988.

Following a Post-Doctoral appointment at the Delft University of Technology, The Netherlands, he joined the Electromagnetics Fields Division, National Institute of Standards and Technology (NIST), Boulder, CO. He has investigated the electrical characterization of high-speed microelectronic circuits and MMIC's, developing fundamental theory and calibration methods, including the multiline TRL method. He has authored over 60 technical publications,

Dr. Marks founded and chairs the IEEE Working Group on Network Parameters, and chairs the MTT-S Standards Coordinating Committee. He was vice-chair of the 1997 IEEE MTT-S International Microwave Symposium. Since 1994, he has served as technical chair on the Executive Committee of the Automatic RF Techniques Group (ARFTG), and chaired the 49th ARFTG Conference. He founded the IEEE Wireless Communications Conference and chaired

it from 1996 to 1998. He has served on numerous program committees and in professional societies. In 1996, he was chosen to attend the highly selective Frontiers of Engineering program of the National Academy of Engineering. He was the recipient of the 1988 Harding Bliss Prize for Excellence in Engineering and Applied Science, the 1994 ARFTG Automated Measurements Technology Award, the 1995 IEEE Morris E. Leeds Award, as well as the U.S. Department of Commerce Silver and Bronze Medals and several best paper awards.

List of Reviewers for Special Issue

S. Adam	B. El-Sharawy	R. J. King	A. Rosen
M. Afsar	M. Faber	R. Kneer	G. Roussy
K. Agarwal	A. Fathy	J. J. Komiak	P. Russer
G. D. Alley	M. Fennelly	C. P. Kong	G. Saulich
K. Anemogiannis	A. Ferraro	C. Kudsia	B. Schiek
W. J. Anklam	S. J. Fiedzuszko	H. J. Kuno	M. Schindler
F. Arndt	G. Franceschetti	L. Kushner	J. Schoenberg
P. Asbeck	Z. Galani	M. Lahdes	F. Schwering
A. Atia	C. Gee	P. Lampariello	F. Sechi
N. F. Audeh	G. Ghione	J. Laskar	A. J. Seeds
I. J. Bahl	J. Goel	R. Levy	A. Sharma
A. J. Bahr	M. Golio	G.-C. Liang	W. A. Shiroma
J. W. Bandler	M. W. Goodwin	L. Liu	B. Sigmon
R. Bansal	A. Gopinath	K. Lu	Z. Skvor
Z. Bardai	A. Gronefeld	W. G. Lyons	P. Smith
J. Barr	M. Guglielmi	S. A. Maas	C. M. Snowden
H. C. Bell	P. Guillon	C. Mahle	R. Snyder
A. Beyer	M. S. Gupta	D. Malocha	M. Solomon
M. E. Bialkowski	W. K. Gwarek	R. Marks	R. Sorrentino
C. Bianchi	D. Halchin	L. Martens	B. E. Spielman
R. Biernacki	R. Ham	M. Matloubian	J. Steel
R. C. Booton	V. F. Hanna	G. Matthaei	S. Stitzer
R. E. Brown	E. H. Hara	D. S. Matthews	P. Straecker
M. Bujatti	M. Harris	S. R. Mazumder	M. Stuchly
S. Bundy	J. Heaton	B. McAvoy	F. Sullivan
C. Buntschuh	W. Heinrich	D. N. McQuiddy	D. Swanson
E. Camargo	G. Heiter	D. Meharry	J. Swift
S. Camnitz	P. Herczfeld	J. Mink	E. Switzer
A. Cangellaris	T. E. Hodgetts	K. Mizuno	O. S. A. Tang
J. W. Carlin	W. J. R. Hoefer	M. Mongiardo	W.-C. Tang
C. T. M. Chang	R. K. Hoffmann	H. Morkner	J. Taub
K. Chang	G. Hopkins	K. Naishadham	K. Tomiyasu
S. L. Chuang	M. C. Horton	C. Nguyen	V. Tripathi
E. Cohen	C. Huang	T. Nishikawa	A. Truitt
M. Cohn	H. A. Hung	Z. Nosal	R. Vahldieck
J. A. Cook	J. Hwang	A. Oliner	A. Vander Vorst
R. K. Cooper	K. Ikoss-Antastasiou	A. Omar	J. Verspect
S. Cripps	R. Inkol	J. Owens	D. Wait
H. M. Cronson	T. Itoh	R. Parry	K.-C. Wang
W. Curtice	C. M. Jackson	J. Pavio	R. J. Wenzel
N. Das	D. Jager	B. Perlman	S. Wetenkamp
L. E. Davis	R. H. Jansen	J. Pierro	R. Wiegel
J. W. Dees	A. Jelenski	J. Pistrowski	A. E. Williams
J. E. Degenford	W. T. Joines	R. D. Pollard	D. F. Williams
E. Denlinger	J. S. Joshi	S. Pritchett	J. Wiltse
N. Dietrich	R. Kagiwada	R. Ranson	K. Wong
R. Dixit	S. Kaiser	C.-L. Ren	K. Wu
A. R. Djordovic	M. Kanda	E. Rezek	H.-Y. D. Yang
D. Dodson	A. Katz	G. P. Riblet	T. Yoneyama
L. P. Dunleavy	S. Kenney	A. N. Riddle	R. York
V. Dunn	R. H. Kern	V. Rizzoli	K. A. Zaki
S. El-Ghazaly	A. P. S. Khanna	R. R. Romanofsky	X. Zhang