

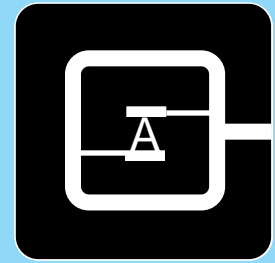
IEEE

CIRCUITS AND SYSTEMS

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SEPTEMBER

JUNE

MARCH

IEEE Circuits and Systems Society Newsletter

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J. Abraham, 1997 *ICCD General Chairman*
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B.R. Chawla, 1998 *DAC General Chairperson*
P. Thajchayapong, 1998
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A FEW CIRCUITOUS THOUGHTS...

The Circuits and Systems Society was honored recently when two of its past officers won election to high office in the Institute of Electrical and Electronics Engineers. Chosen by the membership for President-Elect was Kenneth Laker. Ken will spend calendar year 1998 in this position, and then will accede to the IEEE Presidency in 1999. At the same time, Michael Lightner won the election for Division 1 Director. The division for circuits and devices, Division 1 is a core constituency for our IEEE, and Mike will join Ken in steering the futures of the Institute as we near the end of the second millenium. Congratulations and best wishes to these CAS people as they move up to address the larger questions of our parent organization! We include in this issue brief biographies for Ken and Mike, as well as election statements.

It is always a profound reflection when we look at the extent of our volunteer participation in Society activities. For example, I can look back to the time when I was editor of an IEEE transactions. Well, let me assure you that the incoming manuscripts arrive both fast and furiously, and cover a broad spectrum of ideas and results. From time to time, there were piles of envelopes on the floor; and we had to work steadily for days to enter them and sort them out for reviews. In those times, it was absolutely crucial to know that the associate editors were out there and were ready to help. Although the editor has a key position of centrality, and although such a position consumes a large amount of time and energy, I have always thought that the associate editors were the persons who really provided technical maturity and impetus for the overall operation. Speaking for myself, I was most thankful that they were there for me. I am sure also that Edgar Sánchez-Sinencio is thankful as well; and he has taken the time to gather biographical information and pictures for his current associates. Eric Kuehner, who works here

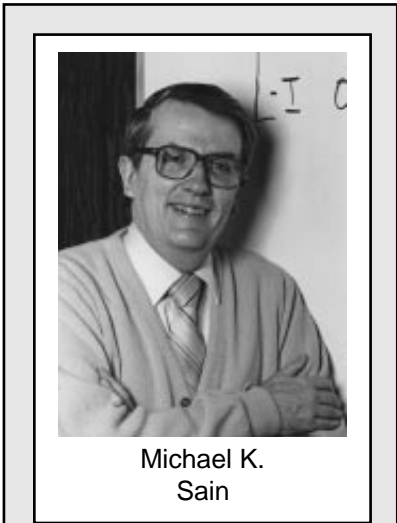
in our office on the layout and other aspects of the Newsletter, has displayed these for your reading pleasure as part of a very innovative theme based upon a roll of film.

A theme of the Newsletter has been to provide focus on people and what they have done, are doing, and hope to do. We do this in addition to supplying certain factual information which all of us need to know. I have found over the years that many readers devote a great deal of attention to our biographies. One person, not too long ago, told me that this was the first thing which was examined in every issue. It is a large task to read all the biographies, and to select and lay out until everything fits into the space provided. Moreover, it is not an easy matter to find themes for such layouts. I am thankful to Eric for his many good jobs on this task!

Conferences continue to multiply. We have a page in this issue on the subject of two first-time meetings. At the same time we continue to try to present synopses of the information for certain of the regular CAS conferences. There are more such conferences than we could ever include in the Newsletter, I think. Fortunately, not all of them seek such inclusion; so we are in stable equilibrium. In principle, we are here to publicize all conferences for which the Circuits and Systems Society is an official participant. The CAS can be officially involved in two or three ways. One example is financial participation, which is called sponsorship. If your conference would like to explore official involvement of the CAS, then the

thing to do is to contact the Vice President for Conferences.

It is that time of year when the officers are elected. These elections are carried out by the Board of Governors. We list the results elsewhere in this issue. Moreover, five new members of the Board have been elected, or perhaps re-elected. We give our thanks to those who, having served, are stepping down; and we congratulate those who will lead us in 1998.



Michael K.
Sain

“A theme of the Newsletter has been to provide focus on people and what they have done, are doing, and hope to do.”

NAMES IN THE NEWS

CAS Members Honored with IEEE Positions

The Circuits and Systems Society is proud that “one of their own” has been elected as the president-elect of the IEEE. Kenneth R. Laker has been announced as the winner of the annual IEEE election, becoming president-elect in 1998 and, therefore, president of the IEEE in 1999.

Dr. Laker received the B.E. degree in electrical engineering from Manhattan College, and the M.S. and Ph.D. degrees from New York University. From 1973–77, he served as a USAF officer at the Air Force Cambridge Research Labs. In 1977 he joined AT&T Bell Labs, where he conducted and managed R&D. He joined Bellcore as district manager in 1983; and was appointed to the University of Pennsylvania faculty in 1984, as professor and chair of the Electrical Engineering Department. He served as department chair until July, 1992. In 1990 he was appointed the Alfred Fitler Moore Professor of Electrical Engineering.

Dr. Laker was president of the CAS Society in 1984 and chair of the IEEE Philadelphia Section in 1994. He served on the IEEE Board of Directors from 1992–95, as director of Division I, Circuits and Devices, 1992 and 1993, and vice president of Educational Activities in 1994 and 1995.

His statement as a candidate was:

“My uniquely broad IEEE service, which includes society president, section chair, division director, and vice president educational activities, has prepared me well to lead the Institute. Being that my career has been divided between industry and academe, I am tuned into the needs of members in both communities, and to those of students. As IEEE president I will work to my full capacity to enhance the value of IEEE membership globally by focusing on the following:

The greatest value that IEEE membership can return to members and their employers is career vitality. I will be unwavering in leading the charge to provide members with the most relevant and accessible professional development resources.

IEEE, through its publications and standards, has been a major catalyst in advancing the electronic information revolution. My goal will be that IEEE be the most innovative user of information technologies and thus align its practice with its new slogan, ‘NETWORKING THE WORLD.’

The cost and value of student IEEE membership, and retention of students as full members is central to the vitality of IEEE. I will seek opportunities like the IEEE/Sloan Career Education Project to increase the impact IEEE has on their transition from student to working professional.

The public image of engineers, and the value society gives to engineering accomplishments, are concerns of IEEE members. Partnering with other associations, I will work to realize a pre-college outreach program that advances science/math education while developing a lasting respect for engineering contributions among young people.”

We congratulate Professor Laker and wish him well in his new role.



Kenneth R.
Laker

IEEE President-Elect



Michael
Lightner

IEEE Director Division I

Nominated by Division I, Michael Lightner, the CAS past president, was elected as the 1998–99 Division Delegate/Division Director for IEEE Division I, Circuits and Devices in the annual IEEE elections. Professor Lightner received the BSEE (high honors) and MSEE from the University of Florida in 1972 and 1974, respectively, and the Ph.D. in electrical engineering from Carnegie-Mellon University in 1979. He worked for AT&T Bell Labs, was on the faculty of the University of Illinois, 1979–80, and joined the University of Colorado in 1981, where he is professor of electrical and computer engineering. He has won two College teaching awards and the College service award. He was a recipient of a NSF Presidential Young Investigator Award. His research has focused on computer-aided design with interests in simulation, optimization, statistical design, synthe-

sis and formal verification.

Lightner’s candidate statement was:

“The fundamental purpose of our societies is technical interchange which occurs through our journals, conferences, workshops, lectures, short courses, chapter meetings and other regional activities. I applaud and will vigorously continue the efforts begun by current division director Mike Adler in supporting and expanding the work of our division in Regions 8, 9, and 10. To this end I will work to develop partnering between our division societies and the many national technical societies to which our members belong.

My second focus will be on our technical products and services. We need to critically evaluate how well these are serving the broad needs of our members. Throughout the division we serve a portion of our members quite well with technical journals and conferences. However, most of our members don’t go to our conferences and many don’t read most of our journals. We must utilize modern communication and computing infrastructure to bring our services to more members and to develop additional services which are of broad interest, economically viable and technically sound.”

ELECTION RESULTS

New CAS BOG and Officers Announced

As you know, a ballot for the election of five members to the IEEE Circuits and Systems Society Board of Governors was issued on August 8, 1997. The votes have been counted, and the following candidates have been elected to serve for a three-year term beginning January 1, 1998.

William Black is an associate professor in the Department of Electrical and Computer Engineering at Iowa State University in Ames, Iowa. Prior to joining Iowa State, and since 1978, he performed contract analog and mixed-signal integrated circuit product design for numerous firms including: Endosonics Corp., National Semiconductor, and Nonvolatile Electronics Inc. He has also held adjunct or visiting faculty positions at the University of Minnesota from 1993–1995, Mankato State University in 1992 and the Swiss Federal Institute of Technology during 1986–1987. His research and professional interests include analog integrated circuit design, memory design, biomedical electronics and networking circuits.

He received the B.A. degree in physics from Lawrence University, Appleton, Wisconsin, in 1975, and the M.S. and Ph.D. degrees in electrical engineering from the University of California, Berkeley, in 1977 and 1980, respectively.

Robert J. Marks II is professor and graduate program coordinator in the Department of Electrical Engineering at the University of Washington, Seattle. Prof. Marks was awarded the Outstanding Branch Councilor Award in 1982 by IEEE and, in 1984, was presented with an IEEE Centennial Medal. He was named a Distinguished Young Alumnus of Rose-Hulman Institute of Technology in 1992 and, in 1993, was inducted into the Texas Tech Electrical Engineering Academy.

Dr. Marks was chair of IEEE Neural Networks Committee in 1989 and served as the first president of the IEEE Neural Networks Council from 1990–1991. In 1992 he was given the honorary title of Charter President. Dr. Marks was named an IEEE Distinguished Lecturer in 1992. Prof. Marks is the editor-in-chief of the *IEEE Transactions on Neural Networks* and serves as an associate editor of the *IEEE*

Transactions on Fuzzy Systems.

Josef A. Nossek received the Dipl.-Ing. and Dr. degrees, both in electrical engineering, from the Technical University of Vienna, Austria, in 1974 and 1980, respectively.

In 1974 he joined SIEMENS AG, Munich, Germany, where he was engaged in the design of passive and active filters for communication systems. In 1978 he became a supervisor, in 1980 head of a group of laboratories concerned with the design of monolithic filters (analog and digital) and electromechanical and microwave filters. Since 1982 he has been head of a group of laboratories designing digital radio systems within the Transmission Systems Department.

From 1987–1989 he was head of the Radio Systems Design Department, where he was instrumental in introducing high speed VLSI signal processing into digital microwave radio. Since April 1989 he is professor for circuit theory and design at the Technical University of Munich. In 1988 he received the ITG prize. He has been a member of numerous organizing and program committees and is a member of editorial boards of several scientific journals.

Wayne Wolf is an associate professor of electrical engineering at Princeton University. Before joining Princeton, he was with AT&T Bell Laboratories, Murray Hill, New Jersey. He received the B.S., M.S., and Ph.D. degrees in electrical engineering from Stanford University in 1980, 1981, and 1984, respectively. His research interests include computer-aided design of VLSI and embedded computing systems, video signal processors, and video libraries. Wolf was program chair of ICCD'95 and general chair of ICCD'96.

Ellen Yoffa is currently senior manager of computer-aided design and verification at the IBM T.J. Watson Research Center in Yorktown Heights, New York, managing a spectrum of activities from circuits to systems. She was general chair of the 1997 Design Automation Conference and was technical program chair for two years. She serves on the editorial advisory board of *IEEE Spectrum*. She received the B.S. and Ph.D. degrees in physics at the Massachusetts Institute of Technology.

CAS Officers Election Results

The votes have been counted for the election of officers to the Board of Governors of the IEEE Circuits and Systems Society, and the following candidates have been elected to serve for a one-year term beginning January 1, 1998.

President-Elect

George S. Moschytz

Vice President-Conferences

Bing J. Sheu

Vice President-Administration

K. T. Thulasiraman

Vice President-Publications

Yih-Fang Huang

Vice President-Technical Activities

Magdy Bayoumi

Vice President-Region 8

Anthony C. Davies

Vice President-Region 9

Jose Silva-Martinez

Vice President-Region 10

Graham R. Hellestrand

We wish the newly elected officers success and thank all candidates for their willingness to serve and for permitting their names to be included on the ballot.

—Mary Ward-Callan
Managing Director
IEEE Technical Activities

FELLOW PROFILES-1997



Larry Richard
Carley



Maciej J.
Ogorzalek



José E.
da Franca

L. Richard Carley

For contributions to the design of analog integrated circuits and to computer-aided analog design.

L. Richard Carley received the S.B. from the Massachusetts Institute of Technology in 1975, the M.S. in 1978, and the Ph.D. in 1984. He was awarded the Guillemin Prize for best undergraduate thesis in the EE Department. In 1984 he joined Carnegie Mellon University and in 1992 he was promoted to the rank of full professor of electrical and computer engineering.

Dr. Carley's research interests include the development of CAD tools to support analog circuit design, the design of high performance analog/digital signal processing ICs, and the design of integrated microelectromechanical systems (MEMS). Since joining Carnegie Mellon, he has been granted eight patents and authored or co-

authored over 120 technical papers. He is a member of program committees of the Custom IC Conference (CICC), The Magnetic Recording Conference (TMRC), and the International Symposium on Low Power Electronics Design (ISLPED). He has served as an associate editor for the *IEEE Transactions on Circuits and Systems* and on the editorial board of the *Analog Signal Processing* journal.

Dr. Carley received a National Science Foundation Presidential Young Investigator Award in 1985, a Best Technical Paper Award at the 1987 DAC, a Distinguished Paper Mention at the 1991 ICCAD, and a Best Panel Award at the 1993 International Solid-State Circuits Conference.

Maciej J. Ogorzalek

For contributions to the theory, analysis, and control of nonlinear dynamic systems and chaotic phenomena.

Maciej Ogorzalek received the M.Sc. degree in 1979, the Ph.D. degree in 1987, and Habilitation degree in 1992, all from the University of Mining and Metallurgy, Kraków, Poland where he is currently employed as professor of electrical engineering in the Department of Electrical Engineering.

His research and teaching interests include circuit theory with an emphasis on nonlinear and dynamic circuits, complex phenomena and chaos, neural networks, nonlinear signal analysis and processing, chaos applications, biomedical signal analysis and applications.

He has held several visiting positions and between 1981–1986 served as consultant for the

Center for Clinical Chemistry, Kraków's hospital. Dr Ogorzalek has been the principal investigator/head of the projects funded by the National Committee for Scientific Research (KBN) and by the Polish Ministry of National Education.

Dr. Ogorzalek has organized special sessions and has been on technical committees of numerous IEEE conferences. He is chairman of the Technical Committee on Nonlinear Circuits and Systems, served as associate editor for *IEEE Transactions on Circuits and Systems Part I*, 1993–1995, and is currently associate editor for the *Journal of the Franklin Institute* and secretary of the editorial board for the *Quarterly of Electrical Engineering* (in Polish - *Elektrotechnika*).

José E. da Franca

For contributions to analog multirate signal processing and engineering education.

José E. da Franca graduated from Instituto Superior Técnico (IST) of the Universidade Técnica de Lisboa, Portugal, in 1978. He received the Ph.D. in 1985 at Imperial College of Science and Technology, London, and in 1992 obtained the degree of *Agregado*, again from IST. He has been with the Department of Electrical and Computer Engineering of IST since 1978.

In 1987 he founded the Integrated Circuits and Systems Group and in 1994 the IST Center of Microsystems, of which he is a director. His research interests are in the areas of integrated circuit design, signal processing, and computer-aided design of analog-digital circuits and systems, where he has published three co-edited books, seven chapters in three research books,

nearly sixty journal papers and over one hundred and fifty conference papers. He is a member of the editorial board of the Kluwer *Journal on Analog Integrated Circuits and Signal Processing*, associate editor of the *IEEE Transactions on Circuits and Systems—I*, serves in the technical program committee of several international conferences and is the general chair of the 1998 IEEE International Conference on Electronics, Circuits and Systems. He has represented the Portuguese Ministry of Defense in the European EUCLID program in science and technology for defense and is a regular consultant to the European Commission for the strategic ESPRIT program. In 1997 he was elected to serve a 3-year term on the Board of Governors of the IEEE CAS Society.

IEEE CAS MEMBERS

Mohammed Ismail

For contributions to analog VLSI circuits and signal processing.

Mohammed Ismail received the B.S. and M.S. degrees in electronics and telecommunications engineering from Cairo University in 1974 and 1978, and the Ph.D. in electrical engineering from the University of Manitoba in 1983.

He is a professor with the Department of Electrical Engineering, The Ohio State University. He has held several positions previously in both industry and academia and has served as a corporate consultant to nearly 20 companies in the United States and abroad. He has authored many publications on VLSI circuit design and signal processing, has coedited and coauthored several books, and has been awarded several patents in the area of analog VLSI. His current interests include low-voltage/low-power VLSI circuits, statistical computer-aided design and optimization, and VLSI information processing.

Dr. Ismail has been the recipient of several awards including the IEEE 1984 Outstanding Teacher Award, the NSF Presidential Young Investigator Award in 1985, the OSU Lumley Research Award in 1993 and 1997, the SRC Inventor Recognition Awards in 1992 and 1993, and a Fulbright Award in 1995. He is the founder of the *International Journal of Analog Integrated Circuits and Signal Processing* and serves as the journal's editor-in-chief (North America). He has served the IEEE in many editorial and administrative capacities, including general chair of the 29th MWSCAS, the CAS editor of the IEEE Circuits and Devices Magazine and associate editor of several IEEE transactions. He cofounded Micrys, Inc. (formerly ChipWorks, Inc.), a commercial VLSI design company specialized in analog and mixed-signal ASIC's.

Kou-Hu Tzou

For contributions and leadership to the technology of progressive image transmission and video compression technology.

Kou-Hu Tzou is a senior manager at Hyundai Network Systems, where he is responsible for digital video and networking product development. He received the B.S. degree in communication engineering from National Chiao-Tung University, Taiwan, in 1975, and the M.S. and D.Sc. degrees both in E.E. from Washington University in 1980 and 1983, respectively. He was a senior scientist and department manager from 1991 to 1996 at COMSAT Laboratories, where he conducted research in the area of video coding and transmission for satellite applications. Prior to joining COMSAT, Dr. Tzou was a member of technical staff at Bellcore from 1987 to

1991, where he conducted researches in the area of HDTV coding. He was with GTE Laboratories from 1983 to 1987 as a principal investigator.

Dr. Tzou serves as associate editor of the *IEEE CAS Transactions on Video Technology*. He also served as a guest editor for *Optical Engineering Journal* special issues on visual communications and image processing regularly. He is a recipient of 1993 IEEE Video Technology Transactions Best Paper Award. In his spare time, he teaches short courses on digital video coding and transmission. He has published two book chapters and 60 technical papers in various conferences and journals and has been awarded seven US patents.

Edward J. Delp

For contributions to image compression and processing.

Edward J. Delp received the B.S.E.E. (cum laude) and M.S. degrees from the University of Cincinnati, and the Ph.D. degree from Purdue University. From 1980–1984, Dr. Delp was with the Department of Electrical and Computer Engineering at the University of Michigan, Ann Arbor, Michigan. Since August 1984, he has been with the School of Electrical Engineering at Purdue University where he is professor of electrical engineering.

His research interests include image and video compression, medical imaging, parallel processing, multimedia systems, ill-posed inverse problems in computational vision, nonlinear filtering using mathematical morphology,

communication and information theory.

Dr. Delp was the general co-chair of the 1997 Visual Communications and Image Processing Conference (VCIP) and program chair of the IEEE Signal Processing Society Ninth IMDSP Workshop held in March 1996. In late 1995 he was elected vice-chair of the IMDSP Technical Committee of the IEEE Signal Processing Society.

He was an associate editor of the *IEEE Transactions on Pattern Analysis and Machine Intelligence* and since 1992 has been a member of the editorial board of the journal *Pattern Recognition*. Since the fall of 1994, Dr. Delp is associate editor of the *Journal of Electronic Imaging* and the *IEEE Transactions on Image Processing*.



Mohammed
Ismail



Kou-Hu
Tzou



Edward J.
Delp

CAS TRANSACTIONS NEWS

Edgar Sánchez-Sinencio
'Develops'
New Associate Editors
for TCAS—II



Mihai Banu



Franco Maloberti



Geert A. DeVeirman



Bram Nauta

Edgar Sánchez-Sinencio has announced the associate editors for the *IEEE Transactions on Circuits and Systems—II: Analog and Digital Signal Processing*. They are presented below by area.

Analog Circuits Signal Processing

Mihai Banu received the B.S., M.S., and Ph.D. degrees in electrical engineering from Columbia University, New York, in 1979, 1980, and 1984. Since 1984 he has been with Bell Laboratories, Lucent Technologies, in Murray Hill, New Jersey.

Currently, he is head of the Silicon Circuits Research Department. His contributions include work on MOSFET-C filters, balanced operational amplifiers, high-speed oscillators, wide-band HBT circuits, clock recovery circuits, and wireless RF ICs. He holds several patents, and received the 1987 IEEE Darlington Award.

Franco Maloberti received the Laurea Degree in physics (summa cum laude) from the University of Parma in 1968. He joined the University of L'Aquila, then the University of Pavia. He is currently professor of microelectronics at the University of Pavia, and is also head of the Micro Integrated Systems Group. Dr. Maloberti has written more than 180 published papers, two books and holds 14 patents (two pending). His professional expertise is in the design, analysis and characterization of integrated circuits and analog digital applications, mainly in the areas of switched capacitor circuits, data converters, interfaces for telecommunication and sensor systems, and CAD for analog and mixed A-D design.

Geert A. DeVeirman received the electrical engineering degree from the Catholic University of Leuven, Belgium, in 1984 and the Ph.D. degree from the University of Minnesota, Minneapolis, in 1988. Upon graduation he joined Silicon Systems, Inc., in Tustin, California, where he is currently a senior principal engineer and group leader responsible for the design of high-performance mixed-signal BiCMOS IC's for magnetic storage applications. Dr. DeVeirman has published several papers and holds three U.S. patents in this area.

Bram Nauta was born in Hengelo, The Netherlands, in 1964. He received the M.Sc. degree (cum laude) in electrical engineering

from the University of Twente, Enschede, The Netherlands, in 1987. In 1991 he received the Ph.D. degree from the same university in the subject of analog CMOS filters for very high frequencies.

In 1990 he co-founded Chiptronix Consultancy and gave several courses on analog CMOS design in the industry. In 1991, he joined the Mixed-Signal Circuits and Systems Department of Philips Research where he is currently responsible for research on "Analog Key Modules".

Fritz Kub received the B.S. degree in engineering physics from the South Dakota State University, Brookings, in 1972, the M.S.E.E. degree from the University of Minnesota, Minneapolis, in 1974, and the Ph.D. degree in electrical engineering from the University of Maryland, College Park, in 1985.

Since 1985, he has worked at the Naval Research Laboratory, in Washington, D.C., where he is the supervisor of the Microelectronics Device Physics section. His research interests include the areas of analog VLSI for artificial neural networks and adaptive filters, smart photodetector design for acousto-optic signal processing, and new silicon device development.

José Silva-Martínez received the B.S. degree in electronics from the Universidad Autónoma de Puebla, Mexico, and the M.Sc. degree from the Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE) in 1979 and 1981, respectively, and the Ph.D. degree from the Katholieke Universiteit Leuven, Belgium.

From 1981 to 1983 he worked at the Electrical Engineering Department of INAOE. In 1983 he joined the Department of Electrical Engineering of the Universidad Autónoma de Puebla, Mexico. In 1993 he joined the Electronics Department at INAOE, and since May 1995 he is the head of the Electronics Department. His current field of research is in the design and fabrication of integrated circuits for communication and biomedical applications.

VLSI Digital Circuits and Systems

Madgy A. Bayoumi is an Edmiston Professor of Computer Engineering in the Center for Advanced Computer Studies, at the University of Southwestern Louisiana, where he has been a faculty



Fritz Kub



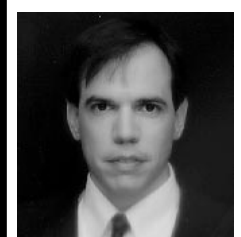
José Silva-Martínez



Madgy A. Bayoumi



Wentai Liu



Joseph R. Cavallaro

'PROCESSING' ASSOCIATE EDITORS



member since 1985. Dr. Bayoumi received the B.Sc. and M.Sc. degrees in electrical engineering from Cairo University, Egypt; the M.Sc. degree in computer engineering from Washington University, St. Louis; and the Ph.D. degree in electrical engineering from the University of Windsor, Canada. Dr. Bayoumi's research interests include VLSI design methods and architectures, low power circuits and systems, digital signal processing architectures, parallel algorithm design, computer arithmetic, image and video signal processing, neural networks and wideband network architectures.

Wentai Liu received the BSEE degree from National Chiao-Tung University, Taiwan, the MSEE degree from National Taiwan University, Taiwan, and the Ph.D. degree in computer engineering from the University of Michigan at Ann Arbor in 1983.

Since 1983 he has been on the faculty of North Carolina State University, where he currently holds the rank of professor in the Department of Electrical and Computer Engineering. He has been a consultant for microelectronic companies and holds three U.S. patents. In 1986 he received an IEEE Outstanding Paper Award. His research interests include high speed VLSI design/CAD, mixed mode IC design, microelectronic sensor design, high speed communication networks, parallel processing, and computer vision/image processing.

Joseph R. Cavallaro received the B.S. degree from the University of Pennsylvania in 1981, the M.S. degree from Princeton University in 1982, and the Ph.D. degree from Cornell University in 1988, all in electrical engineering. From 1981 to 1983, he was with AT&T Bell Laboratories, Holmdel, NJ. In 1988 he joined the faculty of Rice University, Houston, Texas, where he was an associate professor of electrical and computer engineering. From July 1996 through June 1997, he served at the National Science Foundation as director of the Prototyping Tools and Methodology program in the MIPS division. His research interests include computer arithmetic, fault tolerance, VLSI design and microlithography, and VLSI architectures and algorithms for wireless communication systems and robotics.

N. Ranganathan received the B.E. (Honors) degree in electrical and electronics engineering from Regional Engineering College, Tiruchirapalli, University of Madras, India, in 1983, and the Ph.D.

degree in computer science from the University of Central Florida, Orlando in 1988.

He is currently an associate professor in the Department of Computer Science and Engineering and the Center for Microelectronics Research at the University of South Florida, Tampa. His research interests include VLSI design, design automation, hardware algorithms, computer architecture and parallel processing. He has developed many special purpose VLSI chips for computer vision, image processing, pattern recognition, data compression and signal processing applications.

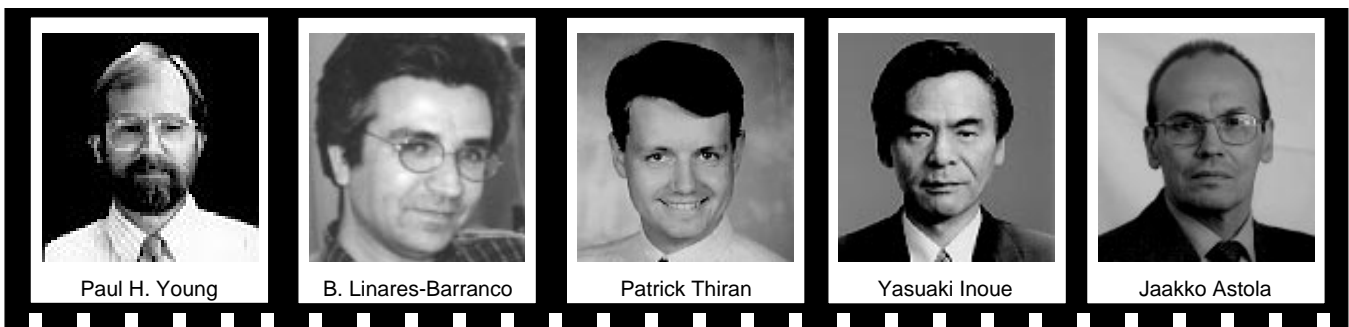
Peter Cheung graduated from Imperial College, University of London in 1973 with first class honors and the award of the IEE Prize. After a number of years working for Hewlett Packard, he returned to Imperial College as a research assistant in 1976. He was then appointed a faculty member and director of Microprocessor Unit at Imperial in 1980. In recognition of his innovative contribution to teaching, he was elected one of the first Imperial College Teaching Fellows in 1994. Currently he is reader in Digital Systems and deputy head of the Department of Electrical and Electronic Engineering. His research interests include VLSI designs, low-power integrated circuits, FPGA and reconfigurable computing, hardware-software codesign and some aspects of IC CAD.

Signal Processing

Jose Manuel Bioucas Dias received the Electrical and Computer Engineer degree in 1985, the Master in electrical and computer engineering in 1991, and the Ph.D. in electrical and computer engineering in 1995, all from Instituto Superior Tecnico, Technical University of Lisbon. He has been a faculty member in the Department of Electrical and Computer Engineering at the Instituto Superior Tecnico since 1985. He has held the rank of assistant professor since 1995. Since 1993 he has been a member of the Communication Theory and Pattern Recognition Group of the "Instituto de Telecomunicacoes".

Joe F. Chicharo received the B.E. degree (Hons 1) and Ph.D.

... continued on next page



CAS TRANSACTIONS NEWS



Naresh R. Shanbhag



Paulo S. R. Diniz



Marwan A. Simaan



Testuou Fujii



William H. Kao

New Associate Editors. . .continued from previous page

in electrical engineering from the University of Wollongong, Australia, in 1983 and 1990 respectively. He is a fellow of the Institution of Engineers Australia and a senior member of the IEEE.

He joined the Department of Electrical and Computer Engineering, University of Wollongong during 1995 as a lecturer and is currently associate professor. Generally, his research interests include digital signal processing and telecommunication systems. Specifically, he is interested in adaptive filtering, transform theory, speech processing as well as switched network traffic modelling and flow control.

Bosco H. Leung is associate professor at the University of Waterloo. His main research interest is in CMOS and BiCMOS mixed analog/digital integrated circuits for wireless, audio and speech applications. Recently he has designed high frequency mixers and low power/low voltage A/D converters for direct conversion based wireless transceivers. He has also conducted theoretical studies into the distortion behavior of high frequency mixers using time varying Volterra series. He received the B.Sc. from Rensselaer Polytechnic Institute in 1979, the M.Sc. from the California Institute of Technology in 1980, and the Ph.D. from the University of California, Berkeley in 1987, all in electrical engineering.

Paul H. Young holds BSEE, MSEE and PhDEE degrees. He has more than 25 years experience in circuit and systems development positions: satellite transponder senior engineer at Cubic Corporation, San Diego, and manager of RF and microwave products at TACAN Corporation, Carlsbad, California. He has taught for 15 years including nine at Arizona State University at Tempe, receiving a teaching excellence award in 1989, has published more than 15 technical papers and is the author of *Electronic Communication Techniques*, 4th edition. Currently, he is the director of advanced technology at TACAN Corporation.

Neural Networks

Bernabé Linares-Barranco received the B.Sc. degree in electronic physics in 1986, and the M.S. degree in microelectronics in 1987, both from the University of Seville, Spain. He received his first



Eric Soenen



Hiroshi Tanimoto

Ph.D. degree in high-frequency OTA-C oscillator design in 1990 from the University of Seville, and the second Ph.D. degree in analog neural network design in 1991 from Texas A&M University.

Since September 1991, he has been a senior researcher with the Analog and Mixed-Signal Circuit Design Department of the National Microelectronics Center, Sevilla, Spain. From September 1996 until August 1997, he has been on sabbatical stay at the Department of Electrical and Computer Engineering of the Johns Hopkins University.

Patrick Thiran received the electrical engineering degree from the Université Catholique de Louvain, Belgium, in 1989, the M.S. degree from the University of California at Berkeley in 1990, and the Ph.D. degree from the Swiss Federal Institute of Technology at Lausanne (EPFL) in 1996.

After his military service, he joined the Circuits and Systems Group of EPFL from 1992–1996. He is now with the Communication Network Laboratory of the same institution, as a lecturer and a researcher. His research interests are in the fields of nonlinear systems, neural networks and traffic control in communication networks.

Nonlinear Circuits and Systems

Yasuaki Inoue is the manager of the CAD Engineering Department, MOS-LSI Division, Semiconductor Business Headquarters, SANYO Electric Co., Ltd. He has been with SANYO for thirty-three years, where he has engaged in development of analog LSI's and analog/digital CAD systems. He holds forty patents, and received the 1988 Ishikawa Prize from the Union of Japanese Scientists and Engineers. He received his Ph.D. degree in electronics and communication engineering from Waseda University, Tokyo, Japan. Dr. Inoue is a member of the Institute of Electronics, Information and Communication Engineers.

Digital Signal Processing

Jaakko Astola was born in Helsinki, Finland in 1949. He received the B.Sc., M.Sc., Licentiate and Ph.D. degrees in mathematics (specializing in error-correcting codes) from Turku University, Finland, in 1972, 1973, 1975, and 1978 respectively. Between 1979 and 1987 he was with the Department of Information Technology, Lappeenranta University of Technology, Finland, holding various teaching positions in mathematics, applied mathematics and computer science. From 1987 to 1992 he was associate professor in applied mathematics at Tampere University, Tampere, Finland. Currently, he is professor of signal processing and head of the Department of Information Technology of Tampere University of Technology. He is also the director of Tampere International Center for Signal Processing.

Naresh R. Shanbhag received the B. Tech. degree from the Indian Institute of Technology, New Delhi, India, in 1988, and the Ph.D. degree from the University of Minnesota, in 1993, both in electrical engineering. In August 1995, he joined the Coordinated Science Laboratory and the Electrical and Computer Engineering De-

NEW AE'S

partment at the University of Illinois at Urbana-Champaign as assistant professor. His research interests are in the area of VLSI architectures and algorithms for signal processing and communications. This includes the design of high-speed and/or low-power algorithms for speech and video processing, adaptive filtering and high-bit rate digital communications systems.

Paulo S.R. Diniz received the B.Sc. degree (cum lauda) from the Federal University of Rio de Janeiro (UFRJ) in 1979, the M.Sc. degree from COPPE/UFRJ in 1981, and the Ph.D. from Concordia University, Montreal, P.Q., Canada, in 1984, all in electrical engineering.

Since 1979 he has been with the Department of Electronic Engineering (the undergraduate department), UFRJ. He has also been with the Program of Electrical Engineering (the graduate studies department), COPPE/UFRJ, since 1984, where he is presently professor. His teaching and research interests are in analog and digital signal processing, stochastic processes, electronic circuits, and adaptive signal processing. He is presently vice president for Region 9 of the IEEE Circuits and Systems Society.

Marwan A. Simaan is the Bell of PA/Bell Atlantic Professor and chairman of the Department of Electrical Engineering at the University of Pittsburgh. His research interests are mainly in the area of signal processing. He received the Ph.D. degree in electrical engineering from the University of Illinois at Urbana-Champaign in 1972, did postdoctoral work at its Coordinated Science Laboratory until 1974, and joined the Department of Electrical Engineering at the University of Pittsburgh in 1976. He has also held research positions with, or consulted for, various companies in industry including the English Electric Leo Marconi Computers Ltd. in England, Bell Telephone Laboratories, Columbus, Ohio, Shell Development Company in Houston, Texas, and the Gulf R & D Company and ALCOA Laboratories in Pittsburgh, Pennsylvania.

Testuro Fujii was born in Ehime, Japan, 1956. He received the B.S., M.S., and Ph.D. degrees, all in electrical engineering, from the University of Tokyo, Tokyo, Japan, in 1979, 1981, and 1984 respectively.

He joined NTT Laboratories, Japan, in 1984. He has been engaged in research on adaptive acoustic signal processing, parallel digital signal processing, and image signal processing. His current interest is Super High Definition (SHD) image processing and a design of parallel DSP systems. He is now a senior manager, at Kanto Business Communications Department, NTT Kanto Regional Headquarters. He is a member of IEICE.

CAD Design Tools and Modeling

William H. Kao received the B.S., M.S., and Ph.D. degrees in electrical engineering from the

... continued on page 13



1998 IEEE International Symposium on Circuits and Systems

May 31–June 3, 1998
Monterey, California

<http://www.iscas.nps.navy.mil>

CALL FOR PARTICIPATION



The 1998 IEEE International Symposium on Circuits and Systems will be held in Monterey, California at the Monterey Conference Center, May 31–June 3, 1998. The symposium is sponsored by the IEEE Circuits and Systems Society and hosted by the Naval Postgraduate School. The symposium will include regular sessions on customary and recent topics; special sessions on emerging circuits and systems topics; plenary sessions on selected advanced aspects of the theory, design, and applications of circuits and systems; and short courses given by experts in specific state-of-the-art subject areas. The symposium will be organized into parallel lecture sessions and poster sessions. Papers suitable for poster presentations are those that require interactive discussion; otherwise, poster and lecture presentations carry equal weight.

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CONFERENCE “FIRSTS”

Reports on the 1st CSSC Conference and the 1st COC Conference

CSSC'97 Inaugurates New Center

The 1st International Workshop on Circuits, Systems and Signal Processing for Telecommunications (CSSC'97) was held April 23–26, 1997 in Tampere, Finland and was organized by the new Tampere International Center for Signal Processing (TICSP). The new center was formally inaugurated during the workshop with opening remarks from Jarl-Thure Eriksson, the rector of the Tampere University of Technology (TUT), Yrjö Neuvo, vice president of Nokia, and Jaako Astola the Director of the Center.

The workshop program included several presentations and short courses by invited guests and a panel discussion on the the future of telecommunications beyond the year 2000. Among the invited panelists were Prof. John Choma, Jr., the CAS Society president, Franco Maloberti, the CAS VP-Region 8, Prof. Tor Ramstad of the Norwegian University of Science and Technology, and Prof. Mohammed Ismail of The Ohio State University.

Short courses and lectures were also given by Prof. Edgar Sanchez-Sinencio the CAS-VP publications, Dr. Robert Loce of Xerox Corporation, Prof. Stephen Long of the University of California, Santa Barbara, and Prof. Redwan Salami of the University of Sherbrooke, Montreal.

The new TICSP Center is supported by TUT, the Academy of Finland, the Finnish Ministry of Education and by the Nokia Corporation. The center conducts research in circuits and systems and signal processing for telecommunications, hosts visiting scholars in these areas and has an International Advisory Board which held its first meeting at ICASSP'97 in Munich, Germany. It also publishes the TICSP Newsletter. For more information about the workshop and/or the center please contact Prof. Jaako Astola, the director of the center at jta@cs.tut.fi. You may also write to him or to the editor of the Newsletter, Pirkko Ruotsalainen (pr@cs.tut.fi) at:

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FINLAND
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fax: +358 3 365 3087

— Mohammed Ismail
The Ohio State University

COC'97 Conference Held in Russia

The First International Conference “Control of Oscillations and Chaos” (COC'97) was held on August 27–29, 1997 at St. Petersburg, Russia. This conference was organized by the Institute for Problems of Mechanical Engineering of Russian Academy of Sciences, St. Petersburg State University, St. Petersburg Informatics and Control Society, St. Petersburg Educational and Research Center for Problems of Machine-Building, Mechanics and Control Processes, and was co-sponsored by the IEEE Circuits and Systems Society, International Union of Theoretical and Applied Mechanics (IUTAM), Russian Academy of Sciences, Russian Foundation for Basic Research, with technical co-sponsorship of the IEEE Control Systems Society and Russian Scientific Society of Control Systems and Processes.

It was the first international interdisciplinary conference focusing on the subject of controlling complex and oscillatory dynamical systems, with emphasis on both theory and applications. Papers from various scientific fields were presented by more than 170 participants from 35 countries. Three volumes of Proceedings have been published. The Conference took place in the “Dom Uchenyh” (“House of Scientists”), a beautiful and classic palace in the historical center of St. Petersburg, next to the famous Winter Palace and the Hermitage Museum.

The conference was chaired by F. L. Chernousko (Russia), and co-chaired by G. Chen (USA), A. L. Fradkov (Russia), K. Furuta (Japan), R. Genesio (Italy), and V. A. Yakubovich (Russia). The International Organizing Committee includes many IEEE members from the Circuits and Systems Society.

The plenary and semi-plenary presentations of the conference were: V. S. Anishchenko and G. I. Strelkova, *Attractors of Dynamical Systems*; G. Chen, *Control and Anti-Control of Chaos*; A. S. Dmitriev, *Application Maps with Stored Information in CDMA Communication Systems*;

G. Feichtinger, *Cyclical and Chaotic Solutions of Dynamic Optimization Models in Economics*; M. Hasler, *Current Problems for the Transmission of Information Using a Chaotic Signal*; G. Hu *Controlling Spiral Waves in Spatiotemporal Systems*; A. A. Krasovsky, *Control by Means of Bifurcations and the Asteroid Danger*; G. A. Leonov and A. L. Fradkov, *Lyapunov Techniques in Analysis and Control of Chaotic Systems*; A. Lindquist and V. A. Yakubovich, *Universal Regulators for Optimal Damping and Tracking in Discrete-time Systems with Harmonic External Disturbances*; H. Nijmeijer, I. I. Blekhman, A. L. Fradkov, and A. Yu.

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CHAPTER REPORT

North Jersey Section Busy "Meeting" Lecturers

North Jersey CAS Chapter Activities

The North Jersey Section Circuits and Systems Chapter has kept quite active during the latter half of the current year. The chapter has co-sponsored four lectures in the last three months together with several other chapters in the section.

Three of the lectures were collaborations of the North Jersey IEEE Electron Devices Society, CAS, Microwave Theory Techniques Society, and Antennas and Propagation Society chapters in conjunction with the New Jersey Institute of Technology.

The first, on September 24, 1997, was a talk on "Voltage-Tunable Ferroelectric Films for Applications to Microwave Devices" by Frank Barnes and Huey-Da Wu from the University of Colorado, Boulder. In this seminar they reviewed some recent developments in laser-deposited voltage-tunable thin films of the BaSrTiO₃ for applications to microwave devices. These films are of potential use in building voltage-tunable delay lines for use in phased array antennas and for voltage-tunable capacitors to be used in filters and oscillators.

The following month, on October 14, the talk on "Miniaturization Techniques of Microwave Components for Mobile Communication Systems Using Low Loss Dielectrics" was presented by Dr. Kikuo Wakino, a MTT-S Distinguished Lecturer and Director of Research at the Murata Manufacturing Co., Ltd.

The third of these collaborative meetings was on November 13, at the New Jersey Institute of Technology. The talk on "Low Dimensional Quantum Structures Made by Man and by God" was presented by Prof. James L. Merz of the Department of Electrical Engineering at the University of Notre Dame. In this talk he described a number of fundamental investigations of low dimensional quantum

New Associate Editors . . . continued from Page 11

University of Illinois in Urbana-Champaign in 1970, 1972, and 1976, respectively.

From 1976 to 1979 he worked at Texas Instruments Design Automation Department in Dallas, Texas, in the areas of mixed level simulation, modeling and hardware description and simulation control languages. From 1979 to 1989 he worked at Xerox Corporation Electronics Division in El Segundo, California, where he was manager of VLSI CAD development. Since 1989 he has been with Cadence Design Systems, where he is currently group director of research and development in the Mixed Signal IC Design Group.

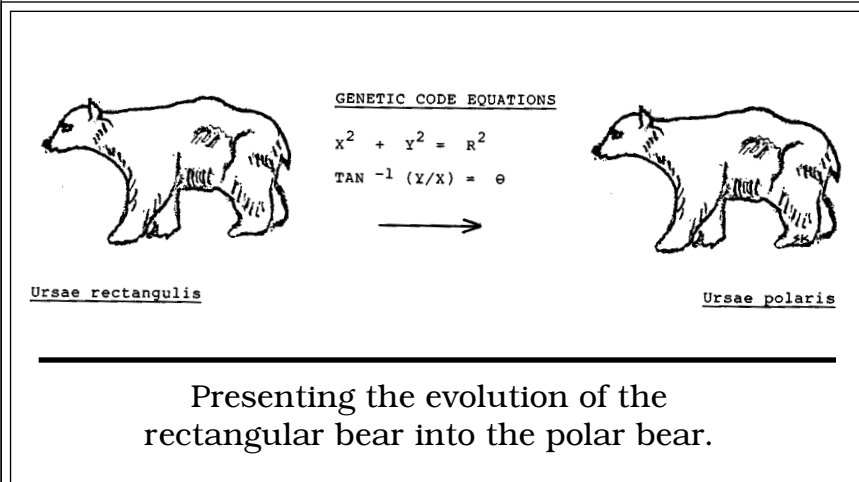
Mixed-Mode Signal

Eric Soenen received the degree of Civil Electro-Mechanical Engineer from the Katholieke Universiteit Leuven, Belgium, in 1987. He obtained the M.S. and Ph.D. degrees in electrical engineering from Texas A&M University in 1989 and 1992, respectively. He has been with the Mixed Signal Design Department of Texas Instruments in Dallas, Texas, since 1991. He has been active in the design of power IC's, remote lock devices, small microcontrollers, speech synthesizers and a digital video IC. Since 1994, he has been concentrating his efforts in the area of data converters, and of pipelined A/D converters in particular. He is currently manager of the Data Converter Design Branch within MSP (Mixed Signal Products).

Hiroshi Tanimoto received B.E., M.E., and Ph.D. degrees, all in electrical engineering, from Hokkaido University, Sapporo, Japan, in 1975, 1977, and 1980, respectively. He joined the Research and Development Center, Toshiba Corp., in 1980, where he is presently a senior research scientist leading an Analog Integrated Circuit Design Group. At Toshiba, he was involved in developments of switched-capacitor filters, Delta-Sigma ADC's, subscriber-line interface circuits for PABX, low-power low-voltage continuous-time active filters, RF front-end circuits for PHS, etc. His research interests include analog LSI design for telecommunication, and analog-oriented circuit simulation.

THE ADVENTURES OFTHE 'UMBLE OHM

...Shlomo Karni



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INTERNATIONAL CONFERENCES . . .

98
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ICECS

5th IEEE
International Conference on
Electronics, Circuits and Systems

September 7–10, 1998
Instituto Superior Técnico
Lisboa, Portugal

≈ ≈ **FINAL CALL FOR PAPERS** ≈ ≈

You are invited to participate in the 1998 IEEE International Conference on Electronics, Circuits and Systems to be held in Lisbon on September 7–10, 1998. This is the fifth annual conference promoted by the IEEE Region 8 in cooperation with the IEEE Circuits and Systems Society, devoted to all aspects of theory, design, implementation and application of electronics, including analog, digital, solid-state, high-speed, automotive, biomedical, industrial, communication, multimedia and consumer electronics. It will include regular and poster sessions as well as special sessions and key note speakers on specific advanced topics. A Tutorial Day will be held on September 10 after the three day conference.

Deadlines

Receipt of camera-ready manuscript: **January 30, 1998**
Notification of acceptance: **April 3, 1998**
Proposals for Tutorials and Special Sessions may be submitted to the Conference Secretariat on or before **December 16, 1997**

For further information, contact:

ICECS'98 Secretariat
Instituto Superior Técnico, Center of Microsystems
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e-mail: icecs98@ecsm4.ist.utl.pt

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1998 IEEE International Solid-State Circuits Conference

San Francisco Marriott Hotel
Thursday – Saturday

San Francisco, CA
February 5–7, 1998

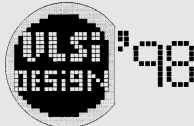
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The Eleventh International Conference on VLSI Design



January 4–7, 1998
Chennai, India

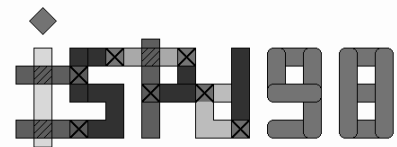
Theme: VLSI FOR SIGNAL PROCESSING

For more information, contact the Publicity Chairs

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International Symposium on Physical Design

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The International Symposium on Physical Design provides a forum to exchange ideas and promote research on critical areas related to the physical design of VLSI systems. All aspects of physical design, from interactions with behavior- and logic-level synthesis, to back-end performance analysis and verification, are within the scope of the Symposium. Target domains include semi-custom and full-custom IC, MCM and FPGA based systems. The ACM/SIGDA Physical Design Workshop evolved into this Symposium last year and was very well-attended. Following its six predecessors, the 1998 symposium will highlight key new directions and leading-edge theoretical and experimental contributions to the field. Accepted papers will be published by the ACM Press in the Symposium proceedings.

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Prof. D. F. Wong
Technical Program Chair, ISPD–98
University of Texas at Austin
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Symposium Information:

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||| **November 24–27, 1998** ||| **Chiangmai, Thailand** |||

The 1998 IEEE Asia-Pacific Conference on Circuits and Systems (APCCAS'98) is the fourth in the series of biennial Asia-Pacific Conference sponsored by the IEEE Circuits and Systems Society and the National Electronic and Computer Technology Center of Thailand. It will be held at the Chiangmai Plaza Hotel, Chiangmai, Thailand, on 24–27 November 1998. The conference will be devoted to all aspects on theory, design, modeling, simulation, and applications of circuits and systems. Plenary sessions, special sessions, invited talks, and tutorials on specific advanced topics will also be included in the program. Lecture sessions and poster sessions will be treated equally in terms of review process. "Microelectronics and Integration System" is the theme of the conference.

AUTHOR'S SCHEDULE:

Extended summaries: April 15, 1998
Notification of acceptance: July 15, 1998
Camera-ready papers: September 15, 1998

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... CALLS FOR PAPERS, PARTICIPATION

**** CALL FOR PAPERS ****

ISLPED '98

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30th IEEE SSST

Southeastern Symposium
on System Theory

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West Virginia University
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8th Great Lakes Symposium on VLSI

Hotel Acadiana, Lafayette, Louisiana
February 19-21, 1998



The GLS-VLSI'98 is the eighth in a series of symposia devoted to the recent progress and innovations in VLSI circuits and systems design. It addresses all aspects of design, test, and validation of microelectronics-based systems. Emphasis is on current and future challenges in research and development in both academia and industry.

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Information: <http://www.cacs.usl.edu/~vlsi98>

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Asia and South Pacific Design Automation Conference
with EDA Techno Fair

ASP-DAC'98

Feb. 10-13, 1998, Pacifico Yokohama,
Yokohama, Japan

EDA Techno Fair'98

Feb. 12-13, 1998, Pacifico Yokohama,
Yokohama, Japan

This is the third meeting of Asia and South Pacific Design Automation Conference (ASP-DAC'98) with EDA Technofair to be held in the Pacifico Yokohama, Japan. This conference provides international forum for researchers and engineers from worldwide for Electronic systems, VLSI designs and CAD/EDA. The ASP-DAC is considered as a sister conference of the DAC (in US).

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1st IEEE CAS Workshop on Wireless-Communication Circuits and Systems

June 22-24 1998, Lucerne, Switzerland

In an effort to apply the vast expertise of the CAS-Society in the area of circuit and system design to the rapidly growing field of wireless communications, a workshop devoted to this theme will be held in Lucerne, Switzerland from June 22nd to 24th 1998. The workshop will combine presentations by experts in the field from academia and industry, with panel and informal discussions.

Organizing Committee:

George S. Moschytz, Chairman, moschytz@isi.ee.ethz.ch
Ruey-Wen Liu, Co-Chairman, liu.1@nd.edu

Those interested in participating are invited to contact:

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5th IEEE International Workshop on Cellular Neural Networks and Their Applications

CNNA '98

APRIL 14-17, 1998 London, ENGLAND

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Pogromsky, *Synchronization and Controlled Synchronization of Dynamical Systems*; M. Ogorzalek, *Implementation Issues for Electronic Chaos Controllers*; F. Pfeiffer, *Control of a Tube-crawling Robot*; A. N. Sharkovsky, E. Yu. Romanenko, and M. B. Verikina, *Structural Turbulence in Some Boundary-value Problems*; F. Ziegler, H. Irshik, and M. Krommer, *Green's Function Method Applied to Vibrations of Piezoelectric Plates and Shells*.

The Young Author Contest was organized for authors of age 35 or younger. Among the five finalists, M. Di Bernardo (UK), E. Bollt (USA), C. C. Chu (Taiwan), M. F. Heertes (The Netherlands), and G. Kronin (Russia), the winner was C. C. Chu, for his paper "Chaotic Motions of Simple Power System Models."

The Conference has demonstrated a rapid growth of interest in analysis and control methods for chaotic motions motivated by important real applications of controlling irregular (chaotic) oscillations in nonlinear dynamical systems (such as circuits, power networks, fluids, and mechanical devices). Much attention was focused on the controlled chaos synchronization issue, which has significant impact on communication, vibrational technologies, as well as analysis and control of distributed (spatiotemporal) systems. The Second Conference on Control of Oscillations and Chaos is planned to be held at the same place in the year 2000.

— **Guanrong Chen**
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◆ Fellow Nominations Due ◆

The IEEE Bylaws define the Fellow grade as one of unusual distinction in the profession, to be conferred only by the invitation of the Board of Directors upon a person of outstanding and extraordinary qualifications and experience in IEEE designated fields (including electrical engineering, electronics, computer engineering and computer sciences, and the allied branches of engineering and related arts and sciences), who has made important individual contributions to one or more of these fields. A nominee must be a Senior Member of the Institute, and have been a member in any grade for at least five years prior to January 1 of the year of election.

The Fellow Committee will consider brief letters of endorsement from IEEE Sections, Chapters, and Committees. In the processing by the Fellow Committee, the candidates' dossiers are evaluated on a basis of eight criteria: 1) Individual contributions as engineer, scientist, originator, technical leader or educator; 2) Evaluation by an IEEE Society; 3) Tangible and verifiable evidence of technical accomplishment, such as technical publications, patents, reports, or published descriptions of products, facilities, and/or service; 4) Opinions of confidential Fellow references who know of the work of the candidate personally (where possible, these should be associated with other than the candidate's own organization); 5) Service to IEEE and its predecessors, the AIEE or IRE; 6) Professional engineering service other than the IEEE; 7) Opinions of endorsers; and 8) Total years in the profession.

An IEEE Fellow Nomination Kit may be obtained from the IEEE Fellow Committee, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331, Tel: (908) 562-3844, Fax (908) 981-9019. All completed forms for Fellow nominations must be received by the Fellow Committee no later than April 15, 1998.

The CAS Awards Committee can provide assistance in obtaining Fellow grade references. Contact Leon O. Chua, Chairman, CAS Fellow Awards Committee, University of California at Berkeley, Department of EECS, Berkeley, CA 94720, Tel: (510) 642-3209, Fax: (510) 845-4267.

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structures which utilize optical and atomic force measurement techniques to determine their physical properties. Examples were drawn from research carried out at the University of Notre Dame and at the Center for Quantized Electronic Structures (QUEST) at the University of California, Santa Barbara (UCSB).

A fourth meeting was presented by the Microelectronics Research Center, ECE Department, New Jersey Institute of Technology, and cosponsored by the EDS/CAS chapters of the North Jersey IEEE Section. The seminar, held Tuesday, November 4, was on "Process Induced Damage (Plasma Damage) to CMOS Electronic Chips" by Dr. Durga Misra of the Department of Electrical and Computer Engineering, New Jersey Institute of Technology.

— **Richard Snyder**
CAS & EDS Joint Chapter Chair