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SOLID-STATE CIRCUITS

IEEE Solid-State Circuits Society Quarterly Newsletter



Online Access – Major New Member Offerings

Have you been dreaming of having online access to a decade-plus of SSCS major conference digests? Or perhaps of having online access to the full range

of recent IEEE technical publications, including transactions, letters, journals, conference digests, and magazines? How about being able to buy a single article from IEEE publications? Your dreams have been answered! Three new member offerings will be available soon: single article purchases will be available this summer, while the SSCS Conference Digital Library and the IEEE Member Digital Library will be available with your IEEE renewal this fall.

vide access through IEEE *Xplore*TM. Previously such access was available only to large corporate or academic library package subscribers.

This service was among a number of services specifically suggested by respondents to the SSCS membership satisfaction survey conducted November 2001 through March 2002 (see “SSCS Members Give the Society High Marks” on page 14). “I think SSCS should provide not only the *JSSC* periodical but also proceedings of SSCS related conferences for SSCS members via internet online (IEEE *Xplore*),” wrote one. “Easier access to all conference papers,” “improved availability of previous conference proceedings/publications,” and “personal access to ISSCC conferences on IEEE *Xplore*” are some of the other comments gathered from the respondents.

SSCS is among the first of IEEE’s Societies to offer this subscription to conference digests. No doubt this kind of offering soon will become more common. All IEEE members already have access to abstract/citation records of these articles but, with this subscription, the full article in pdf file can be viewed immediately, saved and printed.

Continued on page 3

**SSCTC Workshop on
Automotive Electronics**
www.ieee.org/ssctc

**Automotive sensors and actuators,
GPS and self-guided vehicles, electric
and hybrid powered vehicles, analog,
digital, RF, and power systems.**

**10-11 October 2002
Key Bridge Marriott,
Arlington, VA, U.S.A.**

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SSCS Conference Digital Library

In response to strong member interest, beginning with the 2003 renewal cycle SSCS members can subscribe to unlimited access to an SSCS Conference Digital Library of more than a decade of articles from three premier SSCS conferences:

- International Solid-State Circuits Conference from 1988 to the present
- Custom Integrated Circuits Conference from 1988 to the present
- Symposium on VLSI Circuits from 1990 to the present

Priced at a fraction of the cost of registering for just one conference, the \$75 annual subscription will pro-

**Critical IEEE Elections:
Message from the SSCS President page 7**

Results of SSCS Member Survey page 14

Electronic Newsletter Survey page 15

SSCS Members Honored as 2002 IEEE Fellows

An IEEE Fellow is a member of unusual distinction in the profession. It is a recognition conferred by the Board of Directors upon a person of outstanding and extraordinary qualifications and experience in IEEE fields of interest, who has made important individual contributions to one or more of these fields. A nominee must be a Senior Member of the Institute and must have been a member in any grade for at least five years prior to the year of election.

A nomination for Fellow must be accompanied by references from at least five current IEEE Fellows. No

more than one-tenth of one percent of the total Institute membership may be advanced to Fellow grade in any given year. Each nomination is evaluated by the relevant technical society or council and ranked by the 26-member Fellows Committee. Multiple reviewers produce a composite viewpoint that is used in recommending to the Board of Directors suitable candidates for election to Fellow grade.

IEEE conferred the distinction of Fellow on 259 of its members for the class of 2002. Sixteen Fellows are members of the Solid-State Circuits Society. Six of these received

their Fellow certificates at the ISSCC 7 February and were listed in the April Newsletter. Here are the additional ten:

Dr. Mihai Banu

Bell Laboratories, Lucent Technologies
Murray Hill, NJ
For contributions to the art of fully integrated continuous-time analog-filter design

Dr. Joachim N. Burghartz

Delft University of Technology
Delft, The Netherlands
For contributions to integrated high-speed and radio-frequency silicon devices and components

Dr. William James Dally

Stanford University, Stanford, CA
For contributions to parallel computing and interconnection networks

Dr. Mark E. Dean

IBM Research, Yorktown Heights, NY
For contributions to personal computers and computer system architecture, technology, and advanced structures

Dr. Georges Georgette Emiel Gielen

Katholieke Universiteit Leuven
Leuven, Belgium
For contributions to computer-aided design and design automation of analog and mixed-signal integrated circuits and systems

Dr. Edward L. Griffin

Carilion Biomedical Institute
Roanoke, VA
For leadership in the development and application of MSAG GaAs processes for novel MMIC circuits

Dr. Sayfe Kiaei

Arizona State University, Tempe, AZ
For contributions in low-power, low-noise CMOS logic

Dr. Leda M. Lunardi

JDS Uniphase Corp., Freehold, NJ
For contributions to the development of high-performance 1.55- μ m monolithically integrated photoreceiver for optical communication

Dr. Takashi Nanya

University of Tokyo
Meguro-ku, Tokyo, Japan
For contribution to the theory and design of self-checking and asynchronous VLSI systems

Dr. Lawrence T. Pileggi

Carnegie Mellon University
Pittsburgh, PA
For contributions to simulation and modeling of integrated circuits ●

IEEE Solid-State Circuits Society AdCom

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Bruce Wooley
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Elected AdCom Members at Large

Terms to 31 Dec. 02:

Anantha Chandrakasan
John Corcoran
Chris Mangelsdorf
Willy Sansen
Christer Svensson

Terms to 31 Dec. 03:

Asad Abidi
Bryan Ackland
Gary Baldwin
David Hodges
Kiyoo Itoh

For questions regarding Society business, contact the SSCS Executive Office.

Contributions for the October 2002 issue of the newsletter **must be received by 1 August 2002** at the SSCS Executive Office.

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IEEE SSCS
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Piscataway, NJ 08854

Terms to 31 Dec. 04:

Gerhard Fettweis
Richard C. Jaeger
David A. Johns
Takayasu Sakurai
Neil Weste

Other Representatives:

Representative to Sensors Council
Darin Young
Representative from CAS to SSCS
Edgar Sanchez-Sinencio
Representative to CAS from SSCS
Ian Grant

Chairs of Standing Committees:

Awards	Richard C. Jaeger
Chapters	Jan Van der Speigel
Meetings	Mark Horowitz
Membership	Jonathan David
Nominations	Bruce Wooley
Publications	Richard C. Jaeger

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For detailed contact information, see the Society Web page: www.ieee.org/sscs

Online Access – Major New Member Offerings *continued*

IEEE Member Digital Library

The 2003 IEEE renewal also will see a major new subscription offering to Institute members for online access to all IEEE publications: the IEEE Member Digital Library. For \$35 per month, billed monthly throughout a year, the IEEE MDL will provide access through IEEE *Xplore* to 25 pdf files monthly from any periodical or conference digest within the rolling time frame of the previous five years. The subscriber to MDL can select from all conferences and all periodicals, transactions, journals

and magazines; an additional regular subscription might only be necessary for thorough coverage of a favorite journal. An electronic file cabinet will file and record the 25 monthly downloads the subscription offers and reset each month. Once a document is accessed through the IEEE Member Digital Library, a subscriber may access the article for the life of their subscription, under the five-year back file cycle. IEEE Member grade level or higher will be able to subscribe to the IEEE MDL, which will not include access to standards

for IEEE articles. The IEEE MDL is scheduled to start in January 2003.

Single Articles Sales

Beginning this summer, single articles will be available for purchase through IEEE *Xplore*. No subscription will be necessary. Priced at \$13 per article for members and \$35 for non-members, this service will be a rapid delivery alternative to the Ask*IEEE Document Delivery Service available for many years. You can try it on IEEE *Xplore* today. (ieeexplore.ieee.org) ●

	SSCS Conference Digital Library	IEEE Member Digital Library	IEEE Article Purchase Online
Includes	<ul style="list-style-type: none"> International Solid-State Circuits Conference from 1988 to the present Custom Integrated Circuits Conference from 1988 to the present Symposium on VLSI Circuits from 1990 to the present 	25 articles per month, Transactions, conferences and magazines Excludes: IEE articles and IEEE standards	Transactions, conferences and magazines Excludes: IEE articles and IEEE standards
Member fee	\$75/yr for SCS members only	\$35/month for a full 12 months	\$13 per pdf file
Non-member fee	Not offered	Not offered	\$35 per pdf file
Available	With 2003 renewal	January 2003	Summer 2002

The Process of Choice for Wireless, Bipolar/BiCMOS — Convenes in Monterey, California

Wireless communications is a burgeoning market and a major driver behind the semiconductor industry, and SiGe BiCMOS and III-V technologies have emerged as the manufacturing processes of choice for many wireless ICs. If you work in or are interested in this exciting area, then the IEEE Bipolar/BiCMOS Circuits and Technology Meeting (BCTM) is a conference you will want to attend, scheduled 29 September–1 October 2002.

Historically, BCTM has been held in Minneapolis, Minnesota. However, due to popular demand the con-



ference is now on the road. In 2002 it will be held at the Doubletree Hotel in Monterey, California, and in 2003 it will be in Toulouse, France. The Doubletree Hotel in Monterey, in an area widely known through the works of John Steinbeck, is just

a few steps from Fisherman's Wharf and is a pleasant stroll from Cannery Row and sandy beaches. So Monterey is not just a new and exciting place for BCTM, it's a great place to bring the family as well.

The technical program for BCTM consists of one day of Short Courses (Sunday, 29 September) given by noted industry experts, and two days of invited and contributed technical presentations. Also for 2002, we will follow a tradition established in 2001 of having a conference banquet on Monday evening. For 2002 this will be at the

Bipolar/BiCMOS Convenes *continued*

Monterey Bay Aquarium, a world-famous marine institute. The banquet will be a strolling dinner where you can wander among the exhibits, munch on Californian gourmet specialties, and socialize with other conference attendees.

For the Short Courses this year we have three noted experts who will present two-hour courses on various aspects of bipolar devices and technology. Dr. Peter Zampardi of Conexant Systems will present a designer's practical view of Si/SiGe, GaAs, and InP bipolar junction transistor (BJT) device technologies. This will include analysis of the device physics of BJTs in various technologies and the impact on the practical realizations of commercial power amplifiers. Professor Torkel Arnborg of Ericsson Microelectronics will present a course on linearity modeling and simulation for BiCMOS devices. The need for linearity modeling is increasing, as more RF/analog circuit applications become suitable for implementation in semiconductor technology. Professor Arnborg will focus on how distortion is created by non-linearity, how it differs in bipolar vs MOS devices, and what is required for successful modeling and simulation. The third course, by Professor Lode Vandamme of T. U. Delft, will cover noise in BJTs, a topic critical to wireless communications.

The technical part of the conference opens on Monday, 30 September with a keynote address by Professor Herbert Kroemer of the University of California, Santa Barbara. Professor Kroemer, a 2000 Nobel Physics Laureate, is the founding father of semiconductor heterostructures, and he will present a fascinating discourse on the history and technical achievements of heterostructure devices.

Dr. Michael Marcus of the U.S. Federal Communications Commission will give the luncheon speech, always a conference favorite: "The Search for Captain Midnight." In

April 1986 HBO viewers were surprised to see programming interrupted by a text message criticizing HBO's recent price change. The message was a result of the first deliberate satellite jamming in history. The only evidence this crime left was a few feet of consumer-grade videotape. Yet within a month FCC investigators, using what *Time* magazine called "high-tech, Holmesian detective work," unmasked the perpetrator. About a year later there was a similar jamming incident on the Playboy Channel where the source was also identified within a month. (Whether or not one approves of the content Playboy was sending, satellite jamming can damage the satellite transponder and Congress has made such action a felony.) Since the "Playboy perp" did not confess as in the HBO case, it was necessary to prepare an ironclad technical analysis for the ultimate successful prosecution. This talk will describe the unprecedented analysis that led to the conclusion of both cases, including G-rated versions of the actual incidents.

The technical program includes sessions on bipolar/BiCMOS process technology, power devices, device physics, modeling and simulation, analog circuit design, and RF circuit design. Each technical content area includes a double-length invited talk in an area of current interest. Dr. Chih-Hsien Lin of the Taiwan Semiconductor Manufacturing Corporation will present "State-of-the-art RF/analog foundry technology." Dr. Richard Williams of Analogic Technologies will talk about simulation of power devices. Professor Achim Burghartz of the Delft University of Technology will present "Substrate options and add-on process modules for monolithic RF silicon technology." Dr. Pat Drennan of Motorola will talk about accurate modeling of parametric mismatch, a leading cause of yield loss in analog/RF ICs. Dr. Roy Goss-

er of Analog Devices will address relating device parameters and figures-of-merit to real performance of high-speed circuits, a topic that undoubtedly will trigger much discussion. Finally, Dr. Tallis Blalock of Simplex Solutions will address substrate and crosstalk modeling simulation, which is an area of critical concern for analog and RF ICs.

On Tuesday morning, 1 October, there will be a special session on emerging technologies. There will be four invited presentations in this session. Dr. Jamal Ramdani from Motorola will describe their recently announced GaAs-on-Si technology. Dr. Eugenio Cantatore from Philips Natlab will give a talk on circuit and technology developments in polymer electronics, a relatively new and exciting field, with applications from photonics to displays. Dr. Berinder Brar from Rockwell Scientific will outline the present state-of-the-art and project future trends in InP bipolar technology. Also, Dr. Dieter Knoll from Germany's IHP will describe the advantages of carbon-doped SiGe HBTs within the context of a BiCMOS technology for RF applications.

So, the technical presentations, the location, and the banquet at the Monterey Bay Aquarium make BCTM 2002 a must for those working in bipolar/BiCMOS technologies. For further information access the Web site at www.ieee-bctm.org or contact Conference Manager Jan Jopke, CCS Associates, email: CCS@mn.rr.com. Phone U.S. central time zone 612-934-5082 or FAX 612-934-6741.

See you there! ●



Colin McAndrew
*Technical Program
Chair*

Taipei Hosts Asia-Pacific ASIC

The third Asia-Pacific conference on ASIC (AP-ASIC 2002) will be held at The Grand Hotel, Taipei, Taiwan, from 6–8 August 2002. The social events and technical program schedule are in the table. On 6 August, AP-ASIC 2002 offers two parallel Short Courses on novel IC designs of network processors and RFICs. There will be eighteen technical paper sessions addressing a total of ninety-two papers on the following two days, 7–8 August. There will be a plenary session and invited talks in the mornings of 7 and 8 August, respectively.

Technical Paper Sessions

Eighteen technical sessions will be held with three sessions in parallel in each period. The main themes and some representative papers in each field are

1. Analog, communication, and RF circuits:
 - High-performance 1-V 2.54-GHz CMOS VCO
 - A programmable filter with self-tuning for DMT VDSL receivers
 - Analysis and design of CMOS broadband amplifiers with dual feedback loops

Date	Program	Time
Tuesday, 6 August	Short Course	9:00 AM–6:30 PM
Wednesday, 7 August	Plenary Session	9:00–10:00 AM
Thursday, 8 August	Invited Talks	9:00–10:00 AM
Wed./Thu., 7–8 August	Paper Sessions	10:20 AM–5:10 PM
Wednesday, 7 August	Banquet and Social Hour	6:30–8:30 PM

AP-ASIC 2002 Activity Schedule

2. Microprocessors, digital circuits, and IPs:
 - An eight-way VLIW embedded multimedia processor with advanced cache mechanism
 - A novel self-repairable parallel multiplier architecture, design, and test
3. Signal processing and digital communication circuits:
 - Design and implementation of a scalable Fast Fourier Transform core
 - VLSI design of a reconfigurable multi-mode Reed-Solomon code for high-speed communication systems.

Plenary Session, Short Courses, and Invited Talks

The AP-ASIC conference fea-

tures a keynote speech by Dr. Jyuo-Min Shyu, head of Electronics Research and Service Organization, ITRI, Taiwan. In his talk, “Outlook of nanoelectronics in Taiwan,” Dr. Shyu will review current endeavors and the aggressive investment in the microelectronics industry of Taiwan. In addition, major research activities in nanoelectronics will be presented.

The Short Courses offer registrants a choice of two topics that address state-of-the-art ASIC design technologies. The first, “Network processing ICs—design considerations and challenges” by Dr. Bernard Shung of Broadcom Corp., focuses on architectural design issues of packet processors and several key functions in high-speed switches and routers.

Practical design consideration to mega-size network processing IC implementation also will be covered. Dr. Shung will conclude by presenting a 44-Gb/s switching processor IC. The other course, presented by Professor Chin-Chun Meng of National Chung-Hsin University, is “Introducing new concepts in RFIC design.” In-depth design methods of RFIC design will be introduced, revealing a novel poles/zeros interpretation of transistor S parameters for RFIC circuit design and analysis as well as wide-



The AP-ASIC 2002 TPC meeting was held at National Taiwan University, 3 May 2002. (Front row, left to right: TPC Co-Chair Professor K.S. Yoon, SCS Taipei Chapter Chair Professor J.T. Wu, AP-ASIC General Chair Professor C.K. Wang, TPC Chair Dr. T.M. Lin, TPC Co-Chair Dr. K. Sasaki and TPC Co-Chair Professor S.J. Jou; back row, left to right: Professor T.D. Chiueh, Professor Y.Y. Huang, Professor J.C. Wu, Professor J.S. Wang, Deputy Director of CIC J.J. Wang, Professor J.Y. Jou, Professor B.D. Liu, Professor C.W. Jen, Professor A.Y. Wu, Professor S.I. Liu, and Professor W.Z. Chen)

Taipei Hosts Asia-Pacific ASIC *continued*

band amplifier design with impedance-match and multiple feedback loops.

The invited talks will offer two topics. One topic, by Dr. Stewart (Wen-Chung) Wu, General Manager for the Small and Medium Networking Business Unit of Broadcom Corp., is "ICs that drive the future home automation: home networking and home data-storage." Dr. Wu focuses on the IC technology trends that drive home automation, naming, home networking, and home data storage. The other topic is "Opportunities and challenges in digital video camcorder" by Dr. Wen-Jean Hsueh, Program Director

of Imaging Technology at the Opto-Electronics and Systems Laboratory, ITRI. This talk zeroes in on the evolution, market trends, system architecture, and challenges of DVC.

Circuit Design Contest Trial

On a trial basis, an academic Circuit Design Contest was held at CIC (Chip Implementation Center) Hsinchu on 1 June, in conjunction with AP-ASIC 2002. Foreign teams were by invitation only. The Circuit Design Contest may be implemented as a regular AP-ASIC program in the future after review by the AP-ASIC Steering Committee in August 2002.

Banquet and Social Hour

Lunch will be provided on 7–8 August. On the evening of 7 August, a banquet will be offered for all registrants on the tenth floor of The Grand Hotel where attendees may enjoy a great view of Taipei. After the banquet, a puppet show will be performed by the famous I-Wan-Jan puppet theater. Each attendee will receive a puppet as a souvenir after the show.

Please refer to the AP-ASIC 2002 Web site: www.ee.ncu.edu.tw/~AP-ASIC2002 for the final program and registration information. We hope to see you there! ●

Low-Power Electronics and Design Is Focus of International Symposium

This year, the International Symposium on Low-Power Electronics and Design (ISLPED 2002) is scheduled for 12–14 August 2002 at the Monterey Beach Hotel in Monterey, California, with twelve presentation sessions and four poster sessions on the agenda. The Symposium will open with a keynote speech given by Kiyoo Itoh, Hitachi, titled "Low-voltage memories for power-aware systems."

Four papers will be presented in each of the twelve sessions:

1. Low-power modeling and systems
2. Energy-efficient communications
3. Low-power circuit techniques
4. Energy-efficient system design
5. Memory subsystems
6. Modeling and design issues
7. Microarchitecture techniques
8. Technology-driven power optimization
9. Analog electronics
10. Design contest presentation
11. Signal processing
12. Simulation and estimation

Four poster sessions, with a five-minute presentation per poster followed by a one-hour discussion,



The Symposium will open with a keynote speech given by Kiyoo Itoh, Hitachi, titled "Low-voltage memories for power-aware systems."

allow an opportunity to survey more late-breaking news on designing low-power electronic systems. Invited speakers are featured at each day's first morning session on such topics as nanotechnologies and the possibility of designing some logic functions with nanodevices, as well as on low-power systems.

ISLPED 2002 also will host the second International Low-Power Design Contest to provide a forum for universities and research organizations to showcase original "power-aware" designs and to highlight the innovations and design choices targeted at low power. The goal is to encourage and highlight design-oriented approaches to power reduction. The best designs will be selected and invited for presentation at a special session. A cash award (sponsored by Intel Corp., Motorola Inc., ARM Ltd., and OSC GmbH) will be awarded to each selected design entry.

The Symposium will continue the successful tradition of hosting exhibits from low-power CAD vendors. This year's participants include Magma Design Automation, OSC GmbH, and BullDAST S.r.l. Interested companies are invited to showcase or demonstrate their products during this premier event in low-power design. For more information, please check the Symposium's Web site at www.ee.ucla.edu/~islped. ●

Important September Elections for IEEE

Message from the President

The elections this fall may be among the most important in years for the future vitality of the Institute and all its Societies. As the economy soared at the turn of the millennium, in great part due to the technology that our members created, the rising costs of running IEEE were not highly visible. The softening of the economy since 2000 has made the contrast of revenue to expense in all of IEEE uncomfortably apparent. As the producers of intellectual property, all of IEEE's Societies are bearing the burden. You will see in your renewal notice this fall increased dues and subscription rates. Even with these rate increases most Societies, including SSCS, are seeing decades of hard-earned reserves, dwindle to one-third of their pre-millennium value. To control spiraling costs, Societies are interested to see how the IEEE Board of Directors will cut costs, and bring infrastructure expenses under control.

I'm writing for the first time in our newsletters to urge all our members to pay attention to the choices before them on the fall ballot. According to the SSCS survey, 35% of our members vote in IEEE and SSCS elections. On 1 September, election ballots with candidate biographies will be mailed to all eligible voting members. Eligible voters include Members, Honorary Members, Senior Members, Fellows, Life Members, Life Fellows, Life Senior Members, and recent graduates transferred to Member grade.

There are three candidates for IEEE President-Elect: Arthur Winston, Luis T. Gandia, and Vijay Bhargava. Their responses to preselected member questions will be published in the September issue of the Institute. Please read them and watch for those candidates with the experience and commitment to control costs.

The Technical Activities Vice President-Elect is another important choice between Ralph W. Wyndrum, Jr. (who has represented SSCS as a Division 1 Director) and Benjamin W. Wah (Past President of the Computer Society).

There are also many IEEE Directors that our members elect that deserve your careful evaluation and vote. Our Division 1 Director, Cary Yang, was elected last year and continues to serve his term in 2003. SSCS members, through their membership in multiple Societies, have more voting power than most IEEE members. Thirty-five percent of our members belong to one additional Society, 41% belong to two or more Societies.

- Computer Society members will choose between Gene F. Hoffnagle and Willis K. King for Division 5 Director-Elect.
- Communications Society members will choose between candidates Nim K. Cheung and J. Roberto B. de Marca for Division 3 Director-Elect.
- Members of the Education or Reliability Societies will choose between candidates Richard L. Doyle and Gerard H. Gaynor for Division 6 Director.
- The Division 10 Director serves as

representative of a number of Societies involved in Systems and Controls; their members will choose between candidates Metin Akay and Enrique H. Ruspini.

- The Division 9 Director serves as representative of a number of Societies involved in Signals and Applications; their members will choose from candidates J. R. Curz, Tariq S. Durrani, and John Reagan.

Additional Directors are elected from Regions by our members:

- For Mid-Atlantic, USA Region 2 Director-Elect, members will choose Parviz Famouri or Thomas A. Tullia
- For Central USA Region 4 Director-Elect, members will choose Satyendra N. Basu or Ronald G. Jensen
- For Western USA Region 6 Director-Elect, members will choose Michael R. Andrews or Robert L. Baldwin
- For Asia and Pacific Region 10 Director-Elect, members will choose Marzuki B. Khalid, H. P. Khincha, or Seiichi Takeuchi.

Please vote in this election and consider candidates who exhibit fiscal conservatism. ●



Charles G. Sodini
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Solid-State Circuits is online:

Find us at www.ieee.org/sscs

AdCom Highlights

The SSCS AdCom met last February prior to the ISSCC in San Francisco to discuss financial issues and future conferences.

Societies continue to be challenged by the IEEE's need for more dollars to support direct costs such as membership staff, human resources, and IT services, as well as indirect costs such as corporate accounting, Board of Director expenses, and Presidential support. Although many agree that these costs need to be cut, until the IEEE Board of Directors agrees on how to do so, allocating these costs across IEEE's 37 Societies has been the subject of considerable analysis in the Technical Activities Board meetings. Two proposals have been considered: the Principles Method is based on a Society's expenses, membership, and headcount, whereas the Blended Method is based on a Society's reserves. With the motion of SSCS Treasurer Dave Hodges and SSCS President Charles Sodini, the AdCom agreed to support the alternative of the Principles Method of infrastructure allocation. According to Hodges, by the end of 2002 SSCS reserves will have dropped to around \$1.2 million from a high of \$3.3 million at the end of 1999.

Support continues for JSSC, ISSCC, and a DVD 2003

JSSC continues as a popular and high-quality technical publication. The AdCom agreed to maintain its annual page count for 2003 at the same size as the previous two years (2,140 pages).

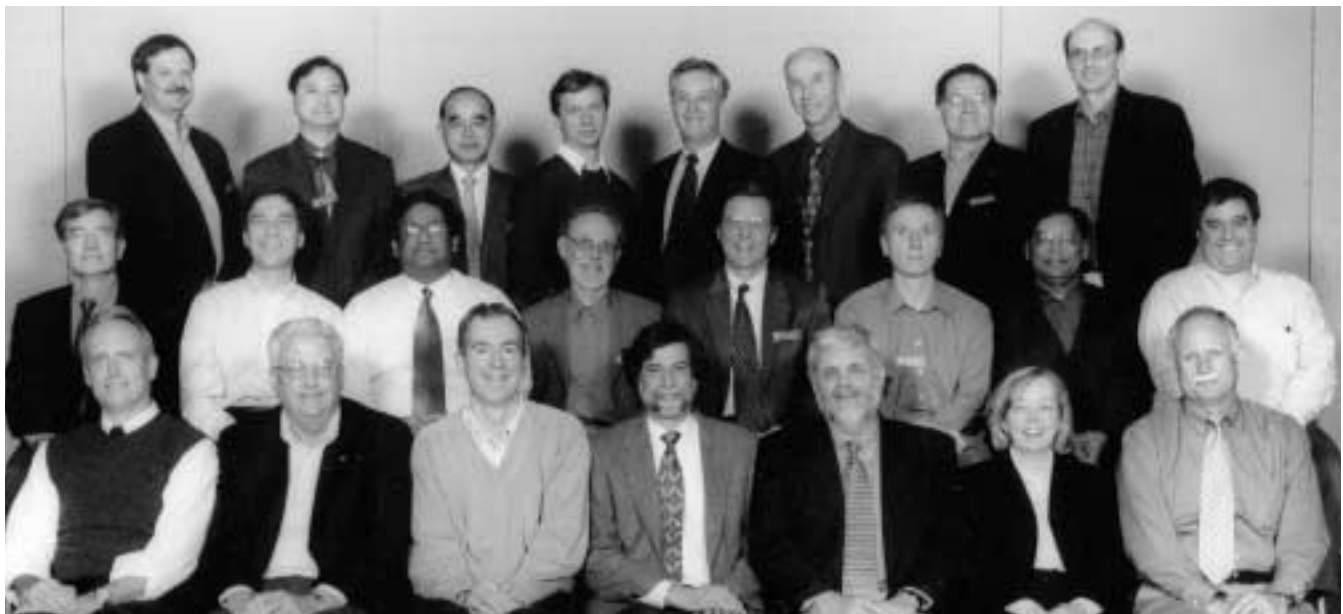
Despite last February's 28% drop in ISSCC attendance, the conference is one of the Society's premier venues for



Publications Committee, top row, left to right: Lew Terman, Asad Abidi; bottom row, left to right: Bernhard Boser, Richard Jaeger, Stephen Lewis.

announcements in circuit advances. The Society agreed to advance a half-million dollar loan to start up the organization for the conference in 2003. The annual budget for this conference is approaching \$2 million. Registrants now come from 40 countries and close to 1,000 different firms or academic institutions.

Online AdCom discussions since the February meeting have resulted in an additional cost savings for SSCS through the suspension of the Predoctoral fellowship for 2002-03 and beyond. Although delaying the next edition of the DVD and the history project also were discussed, the AdCom decided to proceed with the DVD project and the history project as originally approved. The DVD issued in August of 2001 has recouped half of its investment in the first year.



AdCom members, top row, left to right: Neil Weste, Takayasu Sakurai, Kiyoo Itoh, Gerhard Fetweis John Corcoran, Stan Schuster, Edgar Sanchez-Sinencio, Bryan Akland; middle row: Jan Van der Spiegel, Mark Horowitz, Anantha Chandrakasan, Christer Svensson, Gary Baldwin, David Johns, Rakesh Kumar, Jonathan David; bottom row, left to right: Chris Manglesdorf, David Hodges, Stephen Lewis, Charles Sodini, Bruce Wooley, Anne O'Neill, Richard Jaeger (missing: Lew Terman, Asad Abidi, Bernhard Boser, and Willy Sansen).

Other Conferences Supported

The AdCom voted to continue its technical co-sponsorship of the Asia Pacific-ASIC conference in Taipei, Taiwan, 6–8 August 2002 (details on page 5). The objective of AP-ASIC is to promote research and development activities of solid-state circuits. This biannual conference, which circulates in even years within IEEE Region 10 countries, was founded in 1999 with help from the SSCS.

Additional technical co-sponsorship was approved for the 2003 Non-Volatile Semiconductor Memory Workshop and the DAC Student Design Contest. SSCS will provide a judge for the Student Design Contest.

Kanuma to Lead ISSCC Program Committee in 2004

Akira Kanuma was approved as the Program Vice-Chair of ISSCC for 2003. As a result, in 2004 Kanuma will serve as the first ISSCC Program Chair from the Far East. (In 2001 Willy Sansen was the first ISSCC Program Chair from Europe.) Kanuma is a chief specialist in Toshiba Corporation's Network and Communication System LSI Division. He has received four Toshiba internal awards and has more than 40 patents in the area of LSI circuit design. He has published more than 20 papers and has co-authored a CMOS LSI textbook and a semiconductor handbook. Kanuma has been a member of the Institute of Electronics, Information, and Communication Engineers (Japan), and of the IEEE for more than 20 years. A member of the ISSCC Program Committee for eleven years, Kanuma received the ISSCC Service Award in 2000 for having served as Secretary of the ISSCC Far East Program Committee between 1998 and 2000.

AdCom to Scan Technology for Future Directions

Gary Baldwin, Chair of the SSCS Long-Range Planning Committee, reported for the committee, introducing the idea of technology scanning. Technology scanning addresses the questions:

- In what new technical directions should we be heading?
- What might we have missed?

During the February AdCom meeting, SSCS Executive Director Anne O'Neill received a plaque from Past-President Bruce Wooley, recognizing her outstanding contributions and dedication to the progress and success of the Society.



Meetings Committee, top row, left to right: Toshiaki Masuhara, Anantha Chandrakasan, Neil Weste, Stan Schuster; bottom row, left to right: Dave Hodges, Mark Horowitz, Rakesh Kumar.

- How should we incorporate any findings into SSCS?
- How should we adjust our affiliations, meetings, publications, and educational thrusts, based on new technical directions?

The goal is to extend the successful SSCS model of combining innovative research with practical issues, leading to commercially interesting technologies. By working only with “proven” technologies, SSCS may miss opportunities. SSCS abilities in commercially viable research may help those working on new technologies that now only have a hint of commercial viability. The result is to identify some new technologies and stimulate the SSCS community to work on them. Some examples mentioned were

- organics and biophotonics, from components to the integration perspective
- reconfigurable circuits from Xilinx blocks to full systems
- beyond silicon, but building on fabrication methodology
- interconnect technology
- sensors.

Baldwin proposed that SSCS appoint a New Technology Directions Committee of about four members. The committee would return to the AdCom with a proposal for an initial mode of operation and a few examples of new directions to explore, including topics that SSCS may need to revisit from the past. This committee would work closely with the Vision Committee and the New Technology Directions Committee of ISSCC. A broad international representation is desired and suggestions are welcome.

Suggestions for new technical directions for the Society should be emailed to Gary Baldwin, garyb@eecs.berkeley.edu.

Minutes of the AdCom can be found on the SSCS home page at www.ieee.org/sscs under the “About” button. ●

European Solid-State Circuits Conference to Be Held Jointly with Devices Conference

The 29th European Solid-State Circuits Conference (ESSCIRC 2002), organized by the University of Pavia, will be held 24–26 September 2002 in Florence, Italy.

An important aspect of this event is that, for the first time, ESSCIRC 2002 will be held jointly with the European Solid-State Device Research Conference (ESSDERC 2002). The two events will share social events and plenary talks but will have separate programs. All attendees will be admitted to all the sessions of both conferences. The ESSCIRC 2002 technical program will have six ESSCIRC/ESSDERC plenary papers, three ESSCIRC invited papers, three session invited papers, 142 presentations, and 46 posters. This is the result of the exceptionally high number of paper submissions, 369, the largest number reported since the inception of the conferences. These submissions have arrived from 36 countries; over 42% of the papers have been submitted from 18 countries outside Europe. This data demonstrates the worldwide interest in ESSCIRC 2002. The topics covered by the submitted papers are Analog, Mixed-signal and Digital Circuits, RF circuits, Communication Systems, A/D and D/A Converters, and Systems On A Chip. Their presentations are organized in four parallel sessions each one covering a separate track in order to avoid overlap of concurrent presentations.

The ESSCIRC/ESSDERC plenary invited speakers are

- H. De Man, IMEC, “Nanoscale system design challenges: business as usual?”
- Y. Wada, Hitachi, “Prospects for single-molecule information devices”
- R. Austin, Princeton University, “DNA manipulation by nanoelectronic systems”
- A. Chandrakasan, MIT, “Power-aware wireless micro-sensor systems”
- R. Van de Plassche, Broadcom, “High-speed converters for telecom applications”
- A. Sangiovanni Vincentelli, UC Berkeley and PARADES-GEIE, “The art and science of integrated systems design”

The ESSCIRC invited talks are

- R. Yung, Intel, “Future trends of microprocessor design”
- P. Balthus, Philips, “Efficient design methods for RF transceivers at 5 GHz and beyond”
- M. Mancuso, STMicroelectronics, Italy, “Ultra low-power multimedia processor for mobile multimedia applications”

The three session invited papers are

- J. Sevenhans, Alcatel, “Driving the DSL highway: high speed, high density, low power, low cost”
- G. Cherubini, IBM, “The millipede: a very dense, highly parallel scanning probe data storage system”
- R.K. Krishnamurthy, Intel, “High-performance, low-power, and leakage-tolerance challenges for sub-70nm microprocessor circuits”

On Monday, 23 September, a tutorial (organized by B. Nauta, University of Twente) titled “High-Performance Data Converters” will be given by R. Van de Plassche (Broadcom), Bang-Sup Song (UC San Diego), I. Fujimori (Broadcom), and L. Breems (Philips). On Friday, 27 September, a workshop (organized by J. Nurmi, Tampere University of Technology, and H. Tenhunen, The Royal Institute of Technology) titled “Electrical issues in SoC/SoP design” will be given by J. Rabaey (UC Berkeley), S. Rusu (Intel), H. Tenhunen (The Royal Institute of Technology), and A. Gola (STM).

Located in central Italy, Florence boasts a rich cultural and historical heritage. The city, lying in the river Arno’s valley, is surrounded by the enchanting Tuscany countryside. The city’s pleasant atmosphere retains the distinctive taste of the ancient town that contributed so much to the cultural development of Europe.

We look forward to welcoming you in Florence, the city of Dante, Boccaccio, Giotto, Botticelli, Michelangelo, and still one of the most important arts cities in the world. We are sure that the technical contents of ESSCIRC 2002 and the artistic surroundings of the city will result in an exciting “cocktail” for you to enjoy.

Further information and recent updates about ESSCIRC 2002 can be found at <http://ele.unipv.it/esscirt2002>. ●



Rinaldo Castello
General Chair
University of Pavia

Andrea Baschirotto
Technical Program Chair
University of Lecce

Banner Year for SCS Chapters



Officers of the Baltimore Chapter (left to right): Members-at-large Gary Levy and James Oliver, Chair David Burnell, Secretary Paul Potyraj, and Vice-Chair Andreas Andreou.



The Seoul Korea Chapter (left to right): Ilgu Yun (Yonsei University), Taegeun Park (Catholic University), Moon-Key Lee (Yonsei University), Hyun chang Park (Dongkook University), Oh-Kyung Kwon (Hanyang University), Jinwook Burm (Sogang University), Kwang Sub Yoon (Inha University), Joongho Choi (University of Seoul), and Youpyo Hong (Dongkook University).



The West Ukraine Chapter is centered in Lviv (left to right): Chair Mykhaylo Andriychuk, Secretary/Treasurer Olga Zamorska, Vice Chair Lubov Zakakyk, and Past Chair Nikolai Voitovich.



From the Greece Chapter (left to right): Technical Activities Chair V. Anastassopoulos, Awards Chair I. Haritantis, Professor T. Deliyannis, and Chapter Chair Associate Professor A.N. Skodras. All the officers are faculty members of the University of Patras.



From the Bulgaria Chapter (left to right): current Chapter Chair Valeri Mladenov, new Chapter Chair Marin Hristov, Bulgarian IEEE Section Chair Georgi Stoyanov.

To find out about activities in your local chapter or to find information about forming a chapter, access the Chapters button on the Society home page: www.ieee.org/sscs. There are links to individual chapter Web sites, schedules of upcoming Distinguished Lectures, tips on organizing chapter events, articles about forming chapters, and tips on running dynamic chapters. Chapters offer SCS members the opportunity to network locally, invite speakers, and arrange tours of local facilities. Subsidies are available. ●

"Themes and Memes: How One Good Idea Leads to Another"

Speaker: Barrie Gilbert, Analog Devices
An SCS West Switzerland Chapter Event

An autobiographical journey through a sequence of cell concepts, showing how their various ideas evolved over a period of some thirty-five years — going back to 1965, and even back fifty years to the first transistors.

Swiss Federal Institute of Technology,
Lausanne (EPFL), Switzerland
Room EL2, 4 September 2003, 5:15 p.m.
Contact Professor Christian Enz, <christian.enz@ieee.org>

IEEE Virtual Museum

Thomas Edison didn't invent the light bulb, so why does everyone think he did? What was the first computer? How did the patterns in a Utah cornfield lead to the development of television? What is the "X" in an X-ray? Why are Alvin and the Chipmunks part of a museum about technology?

The answers to these questions and more are found in the new IEEE Virtual Museum launched at <http://www.ieee.org/museum>. Designed for educators, students, and the general public, the Virtual Museum debuted with two exhibits containing audio/video clips and interactive features: "Socket to me! How electricity came to be" and "The beat goes on: How sounds are recorded and played."

Three more exhibits are in production and are scheduled for release by the third quarter of 2002. These will explore the different applications of microwaves, the works of Thomas Edison, and contributions women have made to electrical and information technologies. The IEEE Virtual Museum explores the global social impact of electrical and information sciences and technologies and demonstrates the relevance of engineering and engineers to society. It is supported by the IEEE Foundation, the IEEE Life Members, and the Trustees of the IEEE History Center. ●





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Congratulations to New Senior Members

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- Richard Van Hoesen Booth
- Jim Brown
- Raymond Chik
- Philip Cooke
- Mehdi Fardmanesh
- Dr. S. M. Rezaul Hasan
- Jim Imbornone
- Aurangzeb Khan
- Prof. Dr. Arno G. Kostka
- Ruigang Li
- Curtis Ling
- Tuvia Liran
- Sani R. Nassif
- Frank Opteynde
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- Ronald P. Preston
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- Rene Peter Paul Smeets
- Paul C. F. Tong
- Jerry Twomey
- Cicero S. Vaucher
- David A. Van Winkle
- Fei Yuan
- Milos Zivanov

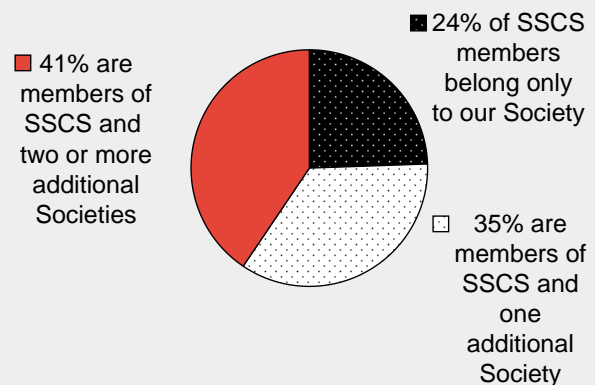
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The same "What Can I Access?" service also reminds members which Societies they belong to. SSCS members tend to have among the broadest technical interests in IEEE, as represented by the number of Societies to which they belong. Thirty-five percent of our members belong to one additional Society, 41% belong to two or more Societies, such as Electron Devices, Microwave Test and Techniques, and the Communications Societies.

While you are at it, sign up to get email alerts on the table of contents of any IEEE journal, transaction, or magazine, whether you are a paid subscriber or not.

Solid-State Circuits Society Members Are Members of Many Societies



Select "Email Alerts" on the right-hand side of the IEEE *Xplore* home page. You choose the titles that you are interested in. Each email contains a direct link to the issue's latest table of contents. ●



SSCS Members Give the Society High Marks

SSCS conducted a membership satisfaction survey from November 2001 through March 2002. Delivered by email and post to a randomly drawn sample of approximately 1,000 SSCS members, 365 members responded, allowing for a confidence interval greater than 95%.

The results are gratifying. Ninety-five percent were either satisfied or highly satisfied with their membership. Ninety-eight percent respond they definitely or probably will renew. Ninety-six percent definitely or probably will recommend membership to a colleague. However, the AdCom is examining the results closely because the members had a number of ideas for improvements. Look for more details from the survey in this issue's cover story and in future newsletters.

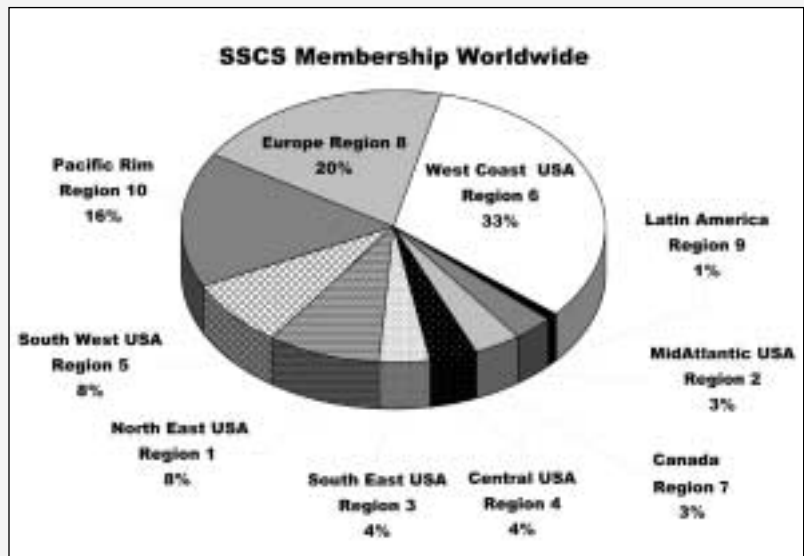
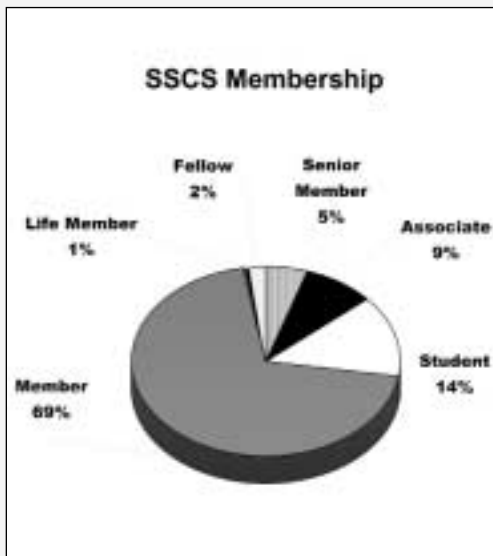
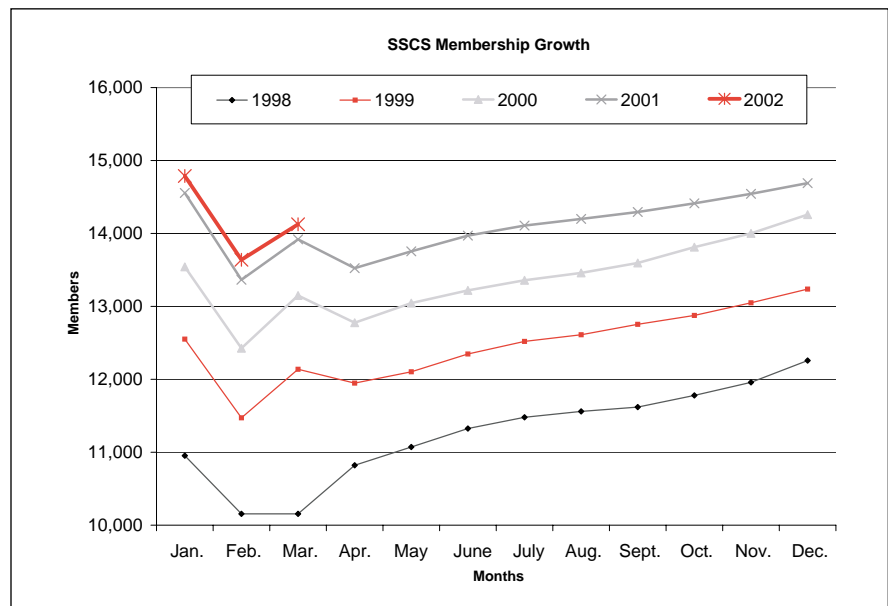
SSCS volunteer leaders and staff, working with Association Laboratory Inc., constructed an online and print survey containing twenty-eight questions on the *Journal*, SSCS conferences, the SSCS Web site and newsletter, chapter participation, and professional education opportunities. There were two open-ended questions to let the members voice their own topics of interest.

Almost 75% of the respondents replied by email with the rest responding by post. Respondents were divided almost equally between U.S. (53%) and non-U.S. (47%). 75% of the respondents worked in private industry with 14% employed in academia. Other categories included self-employed, government employees, and unemployed. Sixty-five percent worked in organizations with more than 500 employees. More of the U.S. respondents worked in private industry (85%)

than non-U.S. respondents. (62%). Thirty-five percent have been in the field nine years or less. Eighty-five percent hold a graduate degree, either a masters or a doctorate.

Membership growth continues

Membership in SSCS continues to grow, though more slowly, with approximately 14,000 members. The attached charts show the geographical distribution of members and the levels of members. ●



The Newsletter Considers Electronic Delivery

Sixty-five percent of respondents of the recent SSCS membership satisfaction survey indicated they would like to receive information about SSCS events and products by email. As a result, the Society is considering offering a choice of a print version or an electronic version of the newsletter with your membership renewal. Please consider and respond to the choices below. ●

I prefer the following option for newsletter delivery:

- print
- email table of contents with a link to the pdf file
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Comments:

Other topics I'd like to see covered in the newsletter are:

FAX: +1 732 981 3401

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Or email your comments to sscs@ieee.org.

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U.S.A.

Embedded Intelligence

Only 18% of the respondents to the SSCS member survey subscribe to "What's New@IEEE in Circuits" and 40% were unaware of it (<http://whatsnew.ieee.org/>).

However, 47% of the respondents to the SSCS member survey visit the SSCS Web site quarterly or more often, while only 28% are unaware of it or never visit it (www.ieee.org/sscs).

SSCS EVENTS CALENDAR

Also posted on www.sscs.org/meetings

SSCS Sponsored Meetings

2002 SSCTC Workshop

www.ieee.org/ssctc

10–11 October 2002

Key Bridge Marriott, Arlington, VA, U.S.A.

Contact: mkramer@courtesyassoc.com

2003 ISSCC International Solid-State Circuits Conference

www.isscc.org

9–13 February 2003

San Francisco Marriott Hotel, San Francisco, CA, U.S.A.

Paper deadline: 4 September 2002

Contact: Courtesy Associates, ISSCC@courtesyassoc.com

2003 CICC Custom Integrated Circuits Conference

www.bis.com/~cicc

21–24 September 2003

DoubleTree Hotel, San Jose, CA, U.S.A.

Deadline: 2 April 2003

Contact: Melissa Widerkehr, cicc@his.com

2003 Symposium on VLSI Circuits

www.vlssymposium.org

12–14 June 2003

Rihga Royal Hotel, Kyoto, Japan

Deadline for abstracts: 7 January 2003

Contact: Phyllis Mahoney, phyllism@widerkehr.com

or Business Center for Academic Societies Japan

vlssymp@bcasj.or.jp

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Technically Co-sponsored Meetings

2002 International Symposium on Low-Power Electronics and Design

www.ee.ucla.edu/~islped

12–14 August 2002

Monterey Beach Hotel Resort, Monterey, CA, U.S.A.

2002 European Solid-State Circuits Conference

ele.unipv.it/esscirc2002/index.html

24–26 September 2002

Florence Conference Center, Florence, Italy

2002 Bipolar/BiCMOS Circuits and Technology Meeting

www.ieee-bctm.org/

29 September –1 October 2002

Double Tree Hotel, Monterey, CA, U.S.A.

2002 GaAsIC Symposium

www.gaasic.org/

21–23 October 2002

Monterey, CA, U.S.A.

2003 VLSI-TSA International Symposium on VLSI Technology, Systems, and Applications

vlsitsa.itri.org.tw/program/general.asp

23–25 April 2003

Hsinchu, Taiwan

2003 Radio Frequency Integrated Circuits Symposium

www.rfic2003.org/

8–13 June 2003

Philadelphia, PA, U.S.A.

2003 ACM/IEEE Design Automation Conference

www.dac.com/

2–6 June 2003

Anaheim Convention Center, Anaheim, CA, U.S.A.

2003 Symposium on VLSI Technology

www.vlssymposium.org

10–12 June 2003

Rihga Royal Hotel, Kyoto, Japan

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