Components, Packaging, and Manufacturing Technology Society

IEEE

Newsletter

The Global Society for Microelectronics Systems Packaging

Vol. 30 No. 1, March 2007 (ISSN 1077-2999)

www.cpmt.org
www.ewh.ieee.org/soc/cpmt/newsletter

President's Column…..

Dr. William T. Chen
IEEE Fellow
President, IEEE CPMT Society
Santa Clara, CA, USA
wt-chen@ieee.org

Greetings!!!

Conferences

By now you have probably received the advanced program for the 2007 ECTC Reno conference in your email inbox. Sometimes I think of our technical conferences as like music festivals with classic symphonies, chamber music, individual recitals and master classes. At music festivals the musicians and music lovers come together to play and to listen. Together they celebrate their arts, enjoy the human interactions and most of all have fun. In the IEEE/CPMT conferences, the programs will include different sessions of paper presentations, posters, keynotes and panel sessions. We bring our major research findings and brilliant ideas to the stage in front of the glaring lights of our peers around the world. This is the time when one presents the crucial discoveries, triumphs of all sizes and lessons learned to a fair hearing among fellow engineers around the world. Along the hallways and hotel lobbies, during breakfasts and coffee breaks, we meet old friends and make new ones, touching base on the happenings in industry, research facilities and academia.

Last year was my first year as president of CPMT and I made a special effort to attend as many CPMT-sponsored conferences as my schedule allowed. I had the opportunity to meet many of you in your home regions. These have been great learning experiences. I have always come away invigorated and inspired with knowledge of science and technology progress. Whether these ideas were fresh beginnings of mature technologies or brand new innovations, these inspirations would stay with me for days to come. Most important of all – I always had fun.

Please open up your electronic copy of the 2007 ECTC advanced program (www.ectc.net). I hope you would agree that maestros Eric Perfecto, Torsten Wipiejewski, Rao Bonda and their merry compatriots, have produced an outstanding technical program. The program truly reflects the enormous dynamism, boundless creativity and innovative spirit of the IEEE/CPMT profession …

(Continued on Page 3)

Cartoon of the Month:

ANOTHER PUSH OFF SHORE

1040 AMT **U.S Individual Income Tax SS # ____________**

ALTERNATE MAXWELL TAX

Multiply entry in line 57 of your 1040 form by the appropriate factor from the choices below. Put the result on line 63, labeled "Total Tax":

- ☐ **X 1.2 if you only used the Maxwell Equations for static solution during the year.**
- ☐ **X 1.25 if you used all 4 equations for dynamic solutions**
- ☐ **X 1.30 if you used Maxwell Equations in lecture notes or IEEE publications**
- ☐ **X 1.35 if you used Maxwell Equations on the weekends instead of stimulating our consumer economy**

Staple your MAX-1099 form provided by your employer to the front of your completed and signed 1040 form. In reaching a solution assume your money goes to zero at the boundary between your assets and the government needs.

… By Dave Palmer

JOIN and SUPPORT the CPMT SOCIETY
www.cpmt.org

IEEE CPMT Society Newsletter
March 2007
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IEEE Components, Packaging, and Manufacturing Technology Society Newsletter is published quarterly by the Components, Packaging, and Manufacturing Technology Society of the Institute of Electrical and Electronics Engineers, Inc. Headquarters: 3 Park Avenue, 17th Floor, New York, NY 10016-5997. US$1.00 per member per year (included in Society fee) for each member of the Components, Packaging, and Manufacturing Technology Society. Printed in U.S.A. Periodicals postage paid at New York, NY, and at additional mailing offices. Postmaster: Send address changes to IEEE CPMT Newsletter, IEEE 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved, copyright (c) 2005 by the CPMT Society of IEEE. Authors and Artists given full permission for further use of their contributions. For circulation information call IEEE customer Service 908-981-1393, or FAX 908-981-9667.

2007 Deadlines for Submitting Articles:
May 25th, 2007
September 25th, 2007
November 25th, 2007
Members-only Web (www.cpmt.org/mem/)
UserName: [available to Members --
Password: join CPMT!]

President's Column (Continued from Page 1)

and the industries in which our professionals are engaged. The 2007 ECTC in Reno promises to be an outstanding technical conference. I hope to see many of you there.

As music festivals are blossoming all over the world all year around, the same is true for IEEE/CPMT technical conferences. In my email inbox I have received notices of ICEPT in Shanghai, China, organized by the China Packaging Society with technical co-sponsorship with CPMT Chapter in Beijing. IEMT (Santa Clara this year), IMPACT in Taiwan, EPTC (Singapore) and EMAP (Korea this year) have all sent me their early announcements. In Europe, CPMT is co-sponsoring the IMAPS Europe EMPC 2007 conference in June. There are many other CPMT technical conferences being organized around the world. Your CPMT Web page (www.cpmt.org) is an excellent fountain of information for up-to-date IEEE/CPMT technical conferences.

CPMT technical conferences and topical workshops are organized by volunteers. Who are these volunteers? Typically they are some of the busiest people around. Often they have volunteered for other professional and technical society services, such as in CPMT Chapters or IEEE Sections. Sometimes they have dual active affiliations such as in MRS, ASME, IMAPS or SMTA. If you ask what motivated them to organize the CPMT technical conference on top of their full-time job, you may get a brilliant smile and a straight answer such as " It is the best fun I've had in a long time."

Whatever the motivations for our volunteers, technical conferences are vitally important for our profession and our membership. CPMT professionals are spread world-wide as electronics products and semiconductor applications penetrate more and more industries. Research in electronics and the integration of electronics in industries are increasing. In response, packaging technologies are fast evolving, and so are the industry business models and end-product applications. We need bold vision, out-of-the-box thinking, and new innovations more than ever. While our conferences are good, some of them are very good, and a few excellent. We must continue to innovate with the program formats and contents to bring them up from good to very good, from very good to excellent, and from excellent to great.

Together with the members of the CPMT Board of Governors, we have had strategic workshop sessions in June and November last year to discuss our vision and goals and strategy for the future. One important direction is to build strong linkages between the different Society value propositions: eg, between publications and conferences. As a step in that direction, we have had some conference-call brain-storming sessions with our VP for Publications and the Editors-in-Chief of the Transactions, to explore the vision for the Transactions and their stakeholders, as well as the strategies to reach that vision. Embedded in those dialogues are the objectives to find synergism and value in collaborating between different value propositions in CPMT and in IEEE. We shall have another workshop session this June to continue our work towards those directions for the CPMT Society.

Please give us your feedback. We want to hear from you.

Two Petition for a Place on IEEE Ballot

Two IEEE members are petitioning to be placed on the 2007 annual election ballot. Fellow **Ralph W. Wyndrum Jr**. is running for 2008 IEEE president-elect, and Fellow **Roger D. Pollard** for 2008 vice president-elect, Technical Activities.

Eligible voting members who want to sign the candidates' electronic petitions can do so at **www.ieee.org/election**. This site also contains background information on each candidate.

Society News:

IEEE Components, Packaging and Manufacturing Technology Society

Board of Governors Meeting

November 11th, 2006
Dallas, Texas, USA

MINUTES

(Unapproved Minutes, subject to confirmation)

1. Call to Order

President William Chen called the meeting to order at 8:35 a.m. Saturday, 11 November 2006. It was confirmed that a quorum was present.

2. Old Business

The results of e-mail ballots were confirmed as follows:

2006-05 Approve budgeting 2007 initiative funding of $40K.
APPROVED

3. IEEE Technical Activities Board (TAB) Treasurer's Report

IEEE Technical Activities Board (TAB) Treasurer Harold Flescher presented a report on IEEE Indirect Infrastructure Expenses, reviewing the history and discussing the proposed new funding model.

4. President's Report

CPMT President William Chen reviewed his report, including his perspective on the job responsibilities of the CPMT President as CEO and Ambassador, and in operational aspects of the Society. He discussed his views on the importance of using CPMT value propositions to build CPMT's global communities.

5. Finances

A. Vice President's Report

Vice President, Finance Thomas Reynolds reviewed his report, highlighting final 2007 budgeted discretionary spending items, and summary of expense and revenue cost centers (2004 actuals through 2007 budget).

6. ECTC Integration: Strategic Program Director's Report

56th ECTC Vice-General Chair Eric Perfecto reviewed his report describing highlights of the 56th ECTC in San Diego, noting that attendance was second highest in history (1180). He also presented information about the 57th ECTC in Reno, noting another strong year for abstract submission.

7. Education: Vice President's Report

Vice President, Education Albert Puttlitz reviewed his report on the Distinguished Lecturer program, noting DL 2006 visits to-date and those approved for the future. He presented updated ground rules. Two issues were raised in discussion: 1) five years with no activity, then removal was felt by a number of members to be too long; 2) appropriateness of the self-nomination provision was challenged. VP Puttlitz stated his intention to obtain further input on the ground rules by disseminating them in an e-mail ballot for approval.

Seven new DLs were submitted for approval including four from Region 10, one from Region 8 and two from Regions 1-7.

A **motion** was made to approve Ricky Shi-Wei Lee as a CPMT Distinguished Lecturer. **The motion passed.**

A **motion** was made to approve Kyung-Wook Paik as a CPMT Distinguished Lecturer. **The motion passed.**

A **motion** was made to approve Yong-Khim Swee as a CPMT Distinguished Lecturer. **The motion passed.**

A **motion** was made to approve Kishio Yokouchi as a CPMT Distinguished Lecturer. **The motion passed.**

A **motion** was made to approve Jorma Kivilahti as a CPMT Distinguished Lecturer. **The motion passed.**

A **motion** was made to approve Dongkai Shangguan as a CPMT Distinguished Lecturer. **The motion passed.**

A **motion** was made to approve Jan Vardaman as a CPMT Distinguished Lecturer. **The motion passed.**

8. Publications: Vice President's Report

Vice President, Publications Paul Wesling reviewed his report, highlighting various aspects of the Transactions (IEEE best practice on submission to first decision; training on MCv3; activities of CPMT Editor-in-Chief; and finances), the Newsletter and the website.

VP Wesling introduced Ricky Lee and Koneru Ramakrishna, Co-Editors-in-Chief of the *IEEE Transactions on Components and Packaging Technologies.* EICs Lee and Ramakrishna described accomplishments in 2006 (improved Impact Factor, reduced backlog, additions of Associate Editors) as well as plans for 2007 (recognition of AEs and Reviewers, special issues).

9. Standing Committee Reports

A. Nominations:

Executive Director Marsha Tickman reported on behalf of Nominations Chair Philip Garrou, noting that delays in finalizing the slate of candidates resulted in an overall scheduling delay for the election of Members-at-Large. The new schedule calls for ballots to be mailed on 17 November with results announced 28 December

B. Fellows Evaluation:

Fellows Evaluation Committee Member Ephraim Suhir reported on behalf of Chair CP Wong. He noted that seven candidates for election to the 2007 Class of IEEE Fellows were reviewed by the CPMT committee.

10. Conferences: Vice President's Report

Vice President, Conferences Rolf Aschenbrenner reviewed his report, which included a summary of the 2006 and first-half 2007 conferences sponsored/cosponsored by the CPMT Society. He described progress in collaboration between CPMT and IMAPS on European conferences (CPMT ESTC and IMAPS-Nordic) and summarized 2005 financial performance of conferences whose books had closed.

It was noted that IMPACT (Taiwan), a new meeting technically cosponsored by CPMT in 2006, was expecting to expand and grow, which could create competition with EPTC.

11. Awards and Recognition: Strategic Program Director's Report

Strategic Program Director Kitty Pearsall reviewed her report detailing the status of the 2007 Awards selection process.

12. Region 10 Programs: Strategic Program Director's Report

Strategic Program Director Charles Lee reviewed his report, highlighting: his view of the Region 10 Director's job description; summary of Region 10 activities; candidates for BoG Member-at-Large; and Distinguished Lecturer nominees.

13. Region 8 Programs: Strategic Program Director's Report

Rolf Aschenbrenner reported on behalf of Strategic Program Director Johan Liu, covering: CPMT activity in Region 8; success of 1st ESTC in Dresden; CPMT Region 8 meeting held during ESTC; and suggested creation of a Region 8 "council."

He also reported that reactivation of the CPMT Germany Chapter was underway with completion of the petition process and election of a new Chair; and noted that a completed petition for formation of a Poland Chapter had been submitted.

14. Technical: Vice President's Report

Vice President, Technical Rao Bonda reviewed his report on technical activities, including his plans and goals.

VP Bonda presented proposals for establishment of two new Technical Committees – Flexible Electronics, proposed by Bahgat Sammakia, Binghamton University, USA; and Aerospace Electronics, proposed by Jo Vann, Smiths Aerospace, UK. He reviewed the process for establishing new Technical Committees, which requires that they begin as Task Forces.

A **motion** was made to approve establishment of the Task Force on Flexible Electronics. **The motion passed.**

A **motion** was made to approve establishment of the Task Force on Aerospace Electronics. **The motion passed.**

15. Student Programs: Strategic Program Director's Report

Strategic Program Director William Brown summarized his report, which included reports submitted by the Chalmers (Sweden), Shanghai (in formation) and Georgia Tech Student Branch Chapters. Director Brown also summarized Student Program goals, issues, and potential new Chapters.

16. Global Membership and Chapters: Strategic Program Director's Report

Strategic Program Director Ralph Russell reviewed his report on membership and Chapters, noting that as of September 2006, CPMT membership was down by 2% as compared to September 2005, however, Student membership increased by 22%.

Director Russell reported on a new Chapter formed in Ottawa, Canada and reactivation underway in Germany and Tokyo. He noted top prospects for new Chapters in Region 8 as Benelux, Italy and Israel.

Director Russell identified 2007 activity focus as: identify one Chapter in each of Region 1-7, 8 and 10 to receive targeted support by BoG; develop Sister Chapter program; promote Senior Membership and strengthen relationships with Chapters. It was suggested that an e-mail ballot be disseminated to decide on focused efforts to support selected Chapters.

17. Marketing

Jacqulyn Hampton was introduced as the new Potomac Communications Group (PCG) program manager, replacing Kristine Martin who left the company in September. Jacqulyn introduced Potomac Vice President Leonard Greenberger. She reviewed her report, highlighting activities with ECTC promotion and initial plans for 2007. She announced that Potomac Communications had become a member of Pinnacle Worldwide, a consortium of worldwide public relations agencies, which should afford good opportunities for CPMT global branding activities. President Chen requested BoG members to provide input to Marsha Tickman on potential areas and activities for PCG support.

18. New Business

Paul Wesling presented information on virtual communities and the ways they might be used to benefit CPMT activities. He asked for input from BoG members who had interest in driving this activity or identifying opportunities for its deployment.

President William Chen announced that he had appointed Bahgat Sammakia, Binghamton University, USA to fill the remaining year (2007) of VP Rao Bonda's term as Member-at-Large.

21. Next Meetings

The next BoG meetings will take place:

BoG Meeting –1-2 June 2007 following 57th ECTC, Reno, Nevada, USA

BoG Meeting – 2-3 or 9-11 November 2007 following ECTC Paper Selection Meeting, Dallas, Texas, USA (pending date selection by ECTC Executive Committee)

****

2007 CPMT SOCIETY ELECTION CALL FOR PETITION CANDIDATES

Submitted by Marsha Tickman, Executive Director, IEEE CPMT Society

The CPMT Society is governed by a Board of Governors composed of officers, 18 elected members-at-large, and various committee chairs and representatives (see inside cover of this Newsletter for details.)

Annually, Society members are asked to elect six members-at-large for a three-year term of office. Candidates for member-at-large are selected in two ways -- either by the Society Nominating Committee, or by petition.

This year's election is the third in which members-at-large will be elected to achieve totals proportionate to the geographic distribution of CPMT members. Voting members will elect members-at-large from within their Region only (that is, members in Region 8 will vote for members-at-large from Region 8, etc.)

If you are an IEEE and CPMT Society member in good standing and are interested in serving on the Board of Governors, you can become a candidate via petition by following the procedures below.

Elected Members of the Board of Governors must be willing to attend two annual Board meetings and participate actively in areas of their interest (publications, conferences, membership development, chapter development, etc.) The term of office for this election is 1 January 2008 through 31 December 2010.

- Prepare a petition that contains your name, member number, and statement of your qualifications for office.
- Provide lines for signatories. Each line should include space for a printed name, member number, and signature.
- Have the petition signed by a MINIMUM of 25 CPMT Society members in good standing (Student-grade members are not eligible to sign.)
- Membership status of all signatories will be validated. It is suggested that you gather more than 25 signatures in order to assure meeting the minimum required number of valid signatures.
- Submit your petition by no later than Friday, 29 June 2007 to:

CPMT Society Nominations Committee
c/o Marsha Tickman
IEEE CPMT Society Executive Office
445 Hoes Lane, PO Box 1331
Piscataway, NJ 08855-1331 USA
or FAX to 732-981-1769.

If you have questions or need additional information, contact Marsha Tickman at the above address, by phone at 732-562-5529, or by e-mail at m.tickman@ieee.org.

Member Recognition:

Mr. Ralph W. Russell II Honored for Volunteerism

Senior Member and CPMT Chapters/Membership Strategic Director **Ralph W. Russell II** has been named one of 12 Volunteers of the Year for 2005 by Dominion, a leading U.S. energy producer. Russell, an account manager with Dominion, was honored for his countless hours of volunteer leadership in the Boy Scouts of America. A lifelong member of the scouts, the former scoutmaster has touched many lives.

Russell's major contribution to the scouts has been his work at the Merit Badge Midways of the National Scout Jamborees. The mission of the midways is to provide instruction on merit badges at various booths set up for attendees. Russell has coordinated either the Electricity or the Electronics Merit Badge booth at seven jamborees since 1981. He has also served for six years as a staff member on the U.S. National Scout Jamboree council, helping to tutor scouts about electrical safety, simple circuits, and microprocessors at annual summer meetings.

Russell has also worked with the IEEE precollege education program to develop a Web site, **www.emeritbadges.org**, that

teaches technical subjects to scouts and other young people. The site, which has instructional material for the Electricity and Electronics Merit Badges, received more than 1.5 million hits during the last jamboree, held in Caroline County, Va., from 25 July to 3 August 2005. As a result of Russell's work, more than 500 scouts completed the Electronics Merit Badge that year.

Each year Dominion selects 12 employees who represent the company's stance on supporting volunteerism in the workforce. In recognition of Russell's selection as a Volunteer of the Year, Dominion will donate US $1000 to Russell's charity of choice—the Boy Scouts of America, naturally enough. In late 2004, Russell received a two-year US$25 000 grant from the IEEE Foundation to develop a similar education program for the Girl Scouts. The program includes a partnership between the Girl Scout Council president and members of the Society of Women Engineers; the goal of the group is to educate girls about careers in technical fields.

Russell earned his bachelor's degree in electrical engineering in 1969 at the University of Kentucky, in Lexington.

Boy Scouts working to meet the requirements for electricity and electronics merit badges.

IEEE-USA Professional Awards:

Ralph W. Russell, II

Citation: "For promotion of engineering to young people through IEEE's emeritbadges.org program at the National Scout Jamboree"

Scout's Honor: Engineering is Cool
BY ERICA VONDERHEID

IEEE Senior Member Ralph W. Russell is scouting out the next generation of electrical engineers and he's finding them through his work with the Boy Scouts of America. For the past 25 years, he's led a partnership between the IEEE and the Boy Scouts to promote the technological literacy of young people.

Russell, an engineer at Dominion Virginia Power in Richmond, Va., has been active in the scouts since 1953, when he was a scout himself in Ashland, Ky. He also later shepherded his two sons, now well into adulthood, through the boy scouting program and his daughter through the girl scouting program.

"To be a well-rounded person, you need to make sure mental, physical, religious, and social [elements] are in balance," Russell explains. "All these things are covered in the scout oath, and I try to promote these in my life."

Russell is most proud of his role in enhancing the scouts' hands-on instructional material for merit badges in electricity, electronics, and computing—collectively referred to as emerit badges. The scouts have awarded merit badges for electricity since 1911. Late last year, Russell received a two-year, US$25 000 grant from the IEEE Foundation to develop a similar educational program for girls and to bring his IEEE emerit badge.org program to the Boy Scouts' U.S. National Scout Jamboree, to be held 25 July–3 August in Caroline County, Va. [See "IEEE Foundation Supports Scouts, Sections Congress," January.] The jamboree is an event held every four years that draws approximately 40 000 scouts from all over the United States and several other countries.

Since 1981, as part of the IEEE's precollege technology education program, IEEE volunteers have staffed either the electronics or electricity merit badge booth at the jamboree, where they help scouts with learning the material they need to know to earn the three emerit badges.

Boy Scouts earn merit badges by studying a topic—whether it is camping, woodworking, or electronics, to name just a few—and then showing their scout leader that they've mastered the information by taking a test or giving a demonstration. The electricity merit badge materials start with the basics—positive and negative charges on atoms—then go on to explain how electricity works in a flashlight and how to build an electromagnet. The scouts also learn about alternating and direct currents and why water and electricity don't mix.

"We're trying to raise the level of excitement about engineering, especially in the electronic and electrical fields," Russell says. The IEEE emerit badge.org material can be used by anyone who wants to teach children about electronics or electricity. The material is available for download from Russell's Web site, www.emeritbadges.org.

When the scout organization decided in 2004 to update its teaching pamphlet on electricity—which Russell dubs the "Cliffs Notes version of electrical engineering"—they turned to Russell. He gathered a group of IEEE staff and members involved in scouting to review the material, which included information on electrical wiring in a home and car and an overview of different kinds of batteries. After they selected which material to use, they submitted the text for peer review, following a procedure similar to that used for articles in IEEE technical journals. The group also added information on electrical engineering history, courtesy of the IEEEHistoryCenter.

"We've taken these merit badges and supporting documents and put meat on it," Russell says.

A technical writer for the Boy Scouts then integrated the IEEE's comments into the final electricity merit badge pamphlet, which was released at the end of 2004. The Boy Scouts credited the IEEE's help by publishing the IEEE logo on the back of the pamphlet.

Before the IEEE would commit money to the IEEE emerit badge.org project for the Boy Scouts, it wanted Russell to address a few issues, such as how the program could be expanded worldwide and how it could include girls. The foundation also wanted to make sure the project did not discriminate against gay scouts. In recent years, the Boy Scouts have come under fire for excluding gay scout leaders.

Russell emphasizes that his emerit badge program does not discriminate. “Whether you’re gay, black, white, a boy, or a girl—if you’re interested in technology, we’ll teach it to you,” he says.

Russell responded to one of the concerns by contacting the Girl Scouts of America, which he says has a manager for their Girls Go Tech program. Russell is now working with Girl Scout representatives—including IEEE Member and *IEEE Spectrum* Advisory Board member Jill Tietjen, who is also president of the Girl Scouts’ Mile High Council in Colorado, and IEEE member Lynn Simms, past president of the Commonwealth Council in Virginia—to create an electronic engineering education program for young women. To show his commitment to the Girl Scouts, Russell became a lifetime member of the group.

He plans to contact two global scouting organizations—the World Association of Girl Guides and Girl Scouts, based in London, and the World Organization of the Scout Movement, in Geneva, Switzerland—to share his IEEE emerit badge.org program. And he is still involved in his local scouting district, even though his children are grown. What’s more, his grandson is just about the right age to begin scouting.

****

Energy-Efficient Computing Pioneer is Newest HP Fellow

Chandrakant Patel founded HP "Cool Team," charted directions in thermal management, is CPMT Member
Submitted by Marsha Tickman, Executive Director, IEEE CPMT Society

Chandrakant Patel, a scientist who initiated HP's groundbreaking research in chips, systems and data-center thermal and energy management, has been named an HP Fellow, an honor reserved for only the company's most extraordinary technical contributors.

Patel played a key role in establishing HP's leadership in energy-efficient computing by founding HP Labs' thermal technology research program in the early 1990s, and subsequently the data-center architecture program. He foresaw the thermal-management challenges associated with high power density due to miniaturization in semiconductor technologies, and the need to manage energy as a key resource as enterprise IT system resources became increasingly connected and shared.

Patel's work has been incorporated into HP products and services, including its Adaptive Infrastructure offerings, and also used by HP to manage its own information technology infrastructure.

"Chandrakant is an extraordinary contributor whose impact has shaped HP and its position in the industry," said Dick Lampman, HP Labs director and senior vice president for research, HP. "His work is recognized by both the mechanical and electrical engineering communities, by industry analysts, industry and business press, partners and over 100 customers."

New approach to power and cooling

Patel, who joined HP Labs in 1991, pioneered a holistic approach to power and cooling that encompasses everything from chips to systems to racks to the data center itself. With partners in HP's product R&D groups, he started a virtual thermal community known as the HP Cool team, which is dedicated to thermal management of chips, systems and data centers.

Through the 1990s, he charted the directions in thermal management that led to creation of an innovative portfolio of chip and system cooling solutions for the HP Cool Team. In late 1990s, he argued for the need to examine data center power and cooling as closely as the computer, a philosophy he described as "the data center is the computer." This became HP's Smart Data Center project.

Working first in the HP Labs data center, then with the University of California at Berkeley and HP team members from sites in India, Puerto Rico, and across the United States, Patel developed the computational fluid modeling of data centers, the new metric of Exergy or available energy (MIPS/Exergy destroyed), a network of sensors and actuators in the data center and the elements of a dynamic control system to manage total cost-of-ownership of an IT infrastructure.

Patel's success builds on his technical expertise in thermo and fluid dynamics, structures and system design. Although his recent work has centered on chips to data centers, the technology and methods are also being applied to consumer systems.

Conference Reviews:

EDAPS 2006: A Workshop on Electrical Design in Advanced Packaging and Systems

Submitted by Wen-Yan Yin and Jun-Fa Mao, Co-Chairs, EDAPS 2006

The EDAPS 2006 conference was held at Shanghai Jiao Tong University, Shanghai (SJTU), China on Dec. 17 and 18, 2006. The conference was co-organized by the Center for Microwave and RF Technologies of SJTU and the National EMC Lab at Wuhan of China. It is sponsored by the special fund for the international conference of SJTU and the EMC Lab, and mentored by Prof. Madhavan Swaminathan of PRC, Georgia Tech. The response to the conference was very positive with more than 100 attendees and 34 invited speakers from Japan, Korea, Singapore, Canada, USA, Hong Kong, Taiwan, and mainland of China. The participants were mainly from practicing engineers of various semiconductor industry, companies and academia, *etc*. The feedback has been very positive with more in-depth presentations. The previous chairs of Prof. Swaminathan, Prof. Joungho Kim, Dr. Toshio Sudo, and Dr. Er-Ping Li graced the occasion to make it successful through their invited presentations and participation.

In the morning of Dec.17, a tutorial covered issues in “Understanding on-chip transmission lines and methodologies used for developing design wiring rules ”, presented by Dr. Alina Deutsch from IBM T. J. Watson Research Center; it was followed by two keynote speeches: “Is the EDA industry ready for the next electronics revolution and can academia help? ” given by Prof. Swaminathan, and “Design issues of ultra-high speed integrated cir-

cuits for optical communications," given by Prof. Z. G. Wang of China. After two keynote speeches three presentations were given by Prof. Andreas Cangellaris, Prof. W. C. Chew, and Prof. J. Kim, respectively. They have addressed some significant research progresses in SPICE-compatible macro-modeling of field circuit interactions in packaged electronic systems, fast integral equation solvers for EM simulations in circuits, and principle of multi-level ground integrity design for low noise circuits and systems.

In the Session of packaging and signal integrity in the afternoon of Dec.17, five invited speakers are arranged for giving 25 minutes presentations, and among these we should mention to "Advanced design technologies for LTCC system on package modules" given by Prof. K. L. Wu, "New methodologies for characterizing radiated emission by embedded decoupling capacitors in PCB" presented by Dr. T. Sudo, and "Investigations on signal integrity problems of high-speed interconnects and systems" reported by Prof. Hong.

Day 2 started with the session of interconnects and modeling, and among it we should mention "Can carbon nanotube extend the lifetime on on-chip electrical interconnections? " presented by Prof. K. Banerjee and "Wireless chip area network (WCAN): a new paradigm for RF microelectronics and radio communications" addressed by Prof. Y. P. Zhang, and "Signal integrity analysis and noise control for multi-layered packages" given by Dr. Er-Ping Li.

In the fourth session of high frequency modeling in the afternoon of Dec.18, Prof. Ruey-Beei Wu has addressed "Delaunay modeling for power ground plane and wideband ground bounce noise suppression using optimal decap and embedded EBG ", and Prof. Wen-Yan Yin has reported "Patterned ground shielding and differential methodologies used for performance enhancement of on-chip silicon-based devices and circuits ".

The next EDAPS 2007 is planned to be held at Taiwan University, Taiwan under the chairmanship of Ruey-Beei Wu. Following EDAPS 2006, tours of Intel Inc. at local hi-tech park and local sights of Shanghai have been also arranged, and overall this has been a very useful and successful workshop to the participants and sincerely appreciates the support from all over the globe, and especially from Prof. M. Swaminathan, USA.

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Educational Activities Board 2007
Call for Nominations Includes New Award

The IEEE Educational Activities Board is seeking nominations for its 2007 Education Awards. In addition to its seven existing recognitions, a newly-established annual award for **Meritorious Achievement in Informal Education** will be presented this year. The Meritorious Achievement in Informal Education award recognizes IEEE members who volunteer as librarians, docents, tour guides, or curators; or who act as technical advisors to or serve as board members of aquariums, museums, parks, zoos or similar settings where teachers, students, and the public benefit from their professional expertise in science and technology. The deadline for all nominations is 30 April.

For descriptions of the full list of the awards, visit **www.ieee.org/web/education/EABAwards**. For access to nomination packets, click on "Call for Nominations" and then on the award for which you would like to submit a nomination.

Questions can be sent to
eab-awards@ieee.org.

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The requirements to qualify for Senior Member elevation are, a candidate shall be an engineer, scientist, educator, technical executive or originator in IEEE-designated fields. The candidate shall have been in professional practice for at least ten years [can include up to 5 years of college years] and shall have shown significant performance over a period of at least five of those years." To apply, the Senior Member application form is available in 3 formats: Online, downloadable, and electronic version. For more information or to apply for Senior Membership, please see the IEEE Senior Member Program website:
www.ieee.org/organizations/rab/md/smprogram.html

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Dr. Koneru (Rama) Ramakrishna, Freescale Semiconductor, Inc.
Profile:
Will publish 900 pages in 2007

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Will publish 500 pages in 2007 (about 80 technical papers)

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Will publish 750 pages in 2007 (about 120 technical papers)

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Send news for the June Newsletter! Due May 25, 2007

Send to Vasu Atluri, nsltr-input@cpmt.org

CONFERENCE CALENDAR

2007 IEEE Workshop on Signal Propagation on Interconnects (SPI)
May 13-16, 2007 **www.spi.uni-hannover.de**
Portofino Kulm Hotel, Ruta di Camogli, Italy
Contact: Flavio Canavero, Politecnico di Torino, flavio.canavero@polito.it

57th Electronic Components and Technology Conference (ECTC 2007)
May 29 - June 1, 2007 **www.ectc.net**
Reno, Nevada USA
Contact: Eric Perfecto, IBM Corporation, perfecto@us.ibm.com

2007 IEEE/SEMI Advanced Semiconductor Manufacturing Conference (ASMC)
June 11-12, 2007 **www.semi.org/asmc**
Grand Hotel Bristol, Stresa, Italy
Contact: Margaret Kindling, SEMI, mkindling@semi.org

9th Int'l IEEE-CPMT Symposium on High Density Design, Packaging and Microsystem Integration (HDP'07)
June 26-28, 2007 **www.hdpchina.com**
Shanghai, China
Abstracts due April 15
Contact: hdp07@hdpchina.com

IEEE International Workshop on Advances in Sensors and Interfaces (IWASI)
June 26-27, 2007 **iwasi.poliba.it**
Villa Romanazzi Carducci, Bari, Italy
Contact: Prof. Daniela De Venuto, Politecnico di Bari, d.devenuto@poliba.it

3rd Annual Organic Microelectronics Workshop
July 8-11, 2007 **www.chemistry.org**
Seattle Crowne Plaza, Seattle, WA USA
Contact: the Organic Microelectronics Workshop at organic_microelectronics@acs.org

8th International Conference on Electronics Packaging Technology (ICEPT 2007)
August 14-17, 2007 **www.icept.org**
Shanghai, China
Abstracts due May 31, 2007
Contact: Dongyan Ding, Shanghai Jiao Tong University, icept2007@sjtu.edu.cn

52nd IEEE Holm Conference on Electrical Contacts, and Intensive Course
September 16-19, 2007 **www.cpmt.org/conf**
Sheraton Station Square Hotel, Pittsburgh, PA USA
Contact: Elsie Cabrera, IEEE, e.cabrera@ieee.org

16th Annual International Symposium on Semiconductor Manufacturing (ISSM'07)
October 15-17, 2007 **www.issm.com**
Marriott Hotel, Santa Clara, CA USA
Contact: Maria Hess, AMD, maria.hess@amd.com

2007 IEEE Electrical Performance of Electronic Packaging (EPEP)
October 29-31, 2007 **www.epep.org**
Renaissance Atlanta Hotel Downtown, Atlanta, GA USA
Contact: Kelly Sutton, University of Arizona, epd@engr.arizona.edu

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….. Editor

EPTC 2007

9th Electronics Packaging Technology Conference

10th – 12th December 2007
Singapore

Mark Your Calendar for EPTC 2007

CALL FOR PAPERS

Mark Your Calendar for EPTC 2007

About EPTC

The 9th Electronics Packaging Technology Conference (EPTC 2007) is an International event organized by the IEEE Reliability/CPMT/ED Singapore Chapter, sponsored by IEEE CPMT Society with technical sponsorship from IMAPS.

EPTC 2007 will feature technical sessions, short courses and exhibition. It aims to provide a good coverage of technological developments in all areas of electronic packaging from design to manufacturing and operation. It is a major forum for the exchange of knowledge and provides opportunities to network and meet leading experts in the field.

Since its inauguration in 1997, EPTC has developed into a highly reputed electronics packaging conference in Asia and is well attended by experts in all aspects related to packaging technology from all over the world.

Conference Topics

You are invited to submit an abstract presenting new development in the following categories:

- Advanced Packaging: *Wafer level packaging, 3D integration, embedded passives & actives on substrates, high power modules, SiP and other system integration technologies and ultra thin embedded modules, RF-ID, disposable electronics packaging and high pin count flip chip packaging.*
- Emerging Technologies: *Packaging solutions for MEMS, Bio-electronics, Automotive electronics, optoelectronics, organic and printable electronics. MEMS packaging for inertial MEMS, microrelays bio-MEMS, RF and optical MEMS.* Optoelectronics packaging of *components and modules, development of Gbps and Tbps opto-electronics, photonic interconnects and backplanes, design and development of optical passive components, photonic crystal based devices, development of process and assembly methods for Silicon Photonic components.*
- Interconnection Technologies: *Gold and copper wire bonding and flip chip (eutectic/lead-free solders) on standard and copper low-k wafers, solder replacement flip chip (ICP, ACP, ACF, NCP), under bump metallurgy, 3D and through Si via connections, microvia and build-up technologies, fine pitch interconnects, nano interconnects.*
- Manufacturing Technologies: *Sustainable volume production of advanced packages and emerging technologies. New manufacturing technologies focusing on incorporating rapid product changes, cost, yield improvement, electrical/mechanical and environmental performance.*
- Materials & Processes: *Advancements in adhesives, encapsulants, underfills, solder alloys, ROHS compliant materials, flexible dielectrics, ceramics, composites, thin film processes on laminates, nano-materials and assembly processes, advanced material characterization techniques.*
- Electrical Modeling & Signal Integrity: *Modeling simulation & measurement for coupling, signal Integrity, power integrity & decoupling scheme analysis reflection, switching noise, EMI/EMC analysis on package & subsystems, RF modules, time & frequency domain measurements for advanced modules.*
- Thermal Characterization & Cooling Solutions: *Modeling & simulation methodology for thermal characterization of advanced packaging, modules & systems. Novel thermal management solutions. Enhanced air & liquid cooling techniques, Hot-spot management.*
- Mechanical Modeling & Structural Integrity: *Thermo-mechanical modeling at package, board & system levels. Modeling of delamination, moisture diffusion, hygrostress, thermal cycling, drop impact, bend, vibration, solder joint reliability and life prediction, measurement of material & interface properties, experimental verification.*
- Quality & Reliability: *Component, board and system level reliability assessment, interfacial adhesion, accelerated testing and models, advances in reliability test methods and failure analysis.*
- Poster Session: *Papers from all categories above are considered.*

Important Dates

15th May 2007	Submission of abstract
15th June 2007	Notification of Acceptance
15th August 2007	Submission of manuscript

Abstract and Paper Submission

Abstracts are solicited to describe original and unpublished work. The abstract should be about 500 words and it must clearly state the purpose, results (including data, drawings, graphs and photographs) and conclusion of the work. Key references to prior publications and how the work enhances existing knowledge should be included in the abstract as well.

Authors must designate two appropriate categories for abstract review. All submissions must be in English and should be made via the online submission system found at http://www.eptc-ieee.net. The required file format is **Adobe Acrobat® PDF** or **MS Word** in one single file for each submission.

The abstracts must be received by 15th May 2007. Authors must include their affiliation, mailing address, telephone and fax numbers, and email address. Special gifts will be given to the first 10 submitted abstracts which are subsequently accepted and published. Authors will be notified of paper acceptance and publication instruction by 15th June 2007. The final manuscript for publication in the conference proceedings is due by 15th August 2007.

Outstanding Technical Papers

The conference proceedings is an official IEEE publication. Author(s) of Outstanding Technical Paper(s) and Best Student Paper will receive an award at the next conference.

Call for Short Courses

The conference program includes half and full-day short courses which will be conducted by leading experts in the field. Details will be updated in the conference website and available in subsequent mailings. Proposals for short courses can be submitted to Dr. Albert Lu (cwlu@simtech.a-star.edu.sg).

Call for Exhibition

A tabletop exhibition featuring suppliers of materials, equipment, components, software and service providers of the microelectronics and electronic assembly industries will be held during the conference. Potential exhibitors may contact Dr. Yoon (yoonsw@ime.a-star.edu.sg) for details.

Conference information & contacts: **Website: http://www.eptc-ieee.net** **Email: secretariat@eptc-ieee.net**

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EMAP2007 -- **International Symposium on Electronic Materials and Packaging**

November 19-22, 2007
KAIST (Korea Advanced Institute of Science & Technology), Daejon, Korea

You are invited to submit a paper for the EMAP2007. The EMAP2007 symposium is organized by KAIST in collaboration with the Center for Electronic Packaging Materials (CEPM). It is jointly sponsored by the IEEE CPMT Daejon Chapter, IMAPS-Korea, Korea Society of Mechanical Engineers, Korea Society of Electric Engineers, and ASME Korea Section. The objective of this symposium is to create an international forum for the exchange, dissemination and discussion of state-of-the-art technologies and recent developments in electronic materials, packaging and assembly. Following the tremendous success in the last eight conferences in Singapore, Hong Kong, Korea, Taiwan, Malaysia and Japan, which were attended by delegates from more than 10 major countries, the ninth symposium will be held again at the KAIST campus at Daejon Korea. So come and meet world-renowned authorities from the Asia-Pacific region, USA and Europe. Join us and get in touch with leading-edge electronics packaging technologies, and find out more about Korea's electronics packaging industries. In addition, short courses on current packaging trends and technological issues will be also offered. Papers are invited from industry participants as well as researchers from the academia and government research organizations.

Call for Papers (abstracts due **July 31**)

Major Topics of the Symposium:

- Advanced Electronic Packaging Technologies: WLP, Flip Chip, CSP, SIP, SOP, 3-D
- Packaging Materials and Processes: Lead-free Solders, Adhesives, Underfills, Encapsulants, PCBs
- Interconnect Technologies: Wire bonding, Fine Pitch, Micro via, Build-up Technologies
- Materials Characterization, Testing and Measurements: Electrical, Thermal, Chemical, Mechanical
- Package Design, Modeling and Simulation
- Sensors/Bio/MEMS Packaging
- Reliability and Failure Analysis: Interfacial Phenomena, Delamination, Moisture effects
- Polymers and Ceramics for Electronic Applications, Thin films/coatings, Metallization

Abstracts and Papers

A one-page 300-word abstract should be submitted to the Secretariat of the Symposium, describing the scope, contents and key points of the proposed paper. Instructions for preparing the full paper will be sent to the authors whose abstracts are accepted after review. Participants will be required to register upon notification of acceptance of their full papers. The detailed conference information will be announced later at the website, **emap.kaist.ac.kr**. If you have any questions, please send an e-mail to **emap@kaist.ac.kr**.

11th IEEE WORKSHOP ON
SIGNAL PROPAGATION ON INTERCONNECTS

May 13-16, 2007
"Hotel Portofino Kulm"
Ruta di Camogli (Genova), Italy

Sponsored by
the IEEE Computer Society - Test Technology Technical Council (TTTC) and by
the IEEE Components, Packaging, and Manufacturing Technology (CPMT) Society

2007 Tutorial: "Digital Timing Measurements - From Scopes and Probes to Timing and Jitter" – by Wolfgang Maichen (Teradyne)

2007 social event: guided visit of Genova Aquarium, dinner in the Aquarium included

Please review the Advance Program and make reservations now!

Final Announcement

The workshop covers the areas of interconnections and packaging modeling, simulation, design, measurement and testing at chip, board, and system levels.
It includes:

- Delta-I Noise
- Broadband Measurement Techniques and Theory
- Coupling Effects on Interconnects
- Determination of Characteristic Parameters
- Field Theory
- Ground Bounce
- Guided Waves on Interconnects
- Measurement, Modeling, and Simulation of Package Interconnects
- Non-Linear Modeling and Analysis
- Propagation Characteristics on Signal and Ground Lines
- Radiation and Interference
- Simulation Techniques for 2- and 3-dimensional Interconnect Structures
- Substrate Influence on Signal Propagation
- Interconnects and Testing
- Mixed Signal Test
- Optical Interconnects: Design and Test

visit **www.spi.uni-hannover.de**

CALL FOR PAPERS

Extended abstracts deadline: May 20th

32nd International Electronics Manufacturing Technology Symposium (IEMT 2007)

October 3-5 2007, San Jose/Silicon Valley, California, USA

The 32nd International Electronics Manufacturing Technology (IEMT) Conference is the premier IEEE event devoted to the manufacture (mainly the assembly/packaging aspects) of electronic, opto-electronic and MEMS/sensors devices and systems. IEMT is an established International conference of long standing organized by the Components Packaging and Manufacturing Technology (CPMT) Society of IEEE. IEMT 2007 is being co-organized by the Santa Clara Valley Chapter of CPMT.

Through well-mediated technical papers IEMT offers manufacturing technologists as well as designers a single convenient forum to assess new packaging and assembly technologies about to enter production or in production around the world. In addition, IEMT also provides attendees the opportunity to meet leading domain experts and network with colleagues.

As the design of devices and systems on one hand and their manufacture on the other get increasingly separated over geographies, it becomes critical to provide a single forum where the challenges and opportunities arising from this new paradigm can be mastered. Therefore in 2007 a strong theme of IEMT will be outsourcing – challenges, networking, opportunities and systems, with emphasis on off-shore capabilities and case studies.

In addition to approximately 70 technical papers over 2.5 days, IEMT '07 will also feature several Professional Development Courses. It is co-located this year with the CPMT Society's Advanced Packaging Materials Symposium.

Conference Topics: Abstracts are sought from fabless companies, manufacturers (integrated, contract manufacturing service providers) and their suppliers on proven capabilities and case studies for package assembly/manufacturing of electronic, solar, opto-electronic, MEMS, bio-medical, display panels and systems including but not limited to the following topics:

Sourcing & Supply Chain Networking
- IP Protection/use, Licensing, Technology Gaps
- Offshore/Nearshore/Onshore Experiences
- Management across Multi-companies, Partner Selection, Qual.
- Electronics Manufacturing Services Optimization, Challenges
- Consequences of the Supply Chain
- Impact on Logistics, Product Development , Quality, Schedule

Manufacturing
- DFM, Assembly, Processes, Optimization, Automation
- Cost-Reduction, Quality, Management Systems
- Modeling and Simulation
- Producing Subsystems: GPS, Bluetooth, Cameras, Appliances
- Transferring Processes and Tooling
- Latest Technologies in near-Implementation, Production
- Application-based Reliability Standards
- Innovations in Bonders, Fiber Alignment, Batch vs Continuous
- Predictive Models for Excursion Detection, Yield, Cost-Reduction

Testing
- DFT Methodologies, Best Practices
- Transferring Processes and Tooling
- Test Planning and Implementation
- Subsystem and System Testing

Environment, Recycling
- Impact of new Materials and Processes on Manufacturing
- Green (Pb and halide free), ROHS Experience
- Effective Implementations
- WEEE and Return Legislation Effects
- Design for Cost-Effective Recycling, Disassembly

Applications
- Using Generic Process Platforms, emulations
- Portable, Low-power, High-density issues/solutions
- Display Assemblies, Electronic Paper
- LEDs for Illumination; MEMS/MOEMS/Sensors
- Solar and Energy Conversion/Conservation

Packaging Integration Issues
- SOP, SiP, Stacked/3D, WLP Production Issues
- Substrate/Package Issues
- Methods and Solutions
- Practical Issues
- Embedded Passives/Waveguides

Implications of Nanotechnology
- Nanotechnology in Production
- Packaging with Nano, Handling Nano, Nano Safety
- Applying Leading-Edge Technology to Manufacturing

III. Abstract and Paper Requirements

An abstract of approximately 500 words that summarizes original and previously unpublished work such as case studies, research, development and applications are welcomed. The abstract should clearly state the purpose, methodology, results, and conclusions of the work. The selection process is competitive and sufficient details need to be included to allow the Technical Program Committee to assess the content of the proposed paper. Abstracts must be received by **MAY 20.** Selected Authors will be informed of paper acceptance by **MAY 30**. Selected papers will be due in final form by **JULY 31** and should be 4 to 7 pages in length (incl. text and graphics). For further details visit **www.cpmt.org/iemt**

For further information, please contact:

Dr. Srinivas Rao, Flextronics	**Choong Kooi Chee,** Intel	**Dr. KRS Murthy**	**Azhar Aripin,** OnSemi
General Chair	Vice General Chair	Program Chair	Vice Program Chair
Srinivas.Rao@Flextronics.com	choong.kooi.chee@intel.com	krsmurthy@gmail.com	azhar.aripin@onsemi.com
Phone: +1-408-576-6758		Phone: +1-408-464-3333	

CALL FOR PAPERS

Extended abstracts deadline: May 20th

IEEE COMPONENTS, PACKAGING AND MANUFACTURING TECHNOLOGY SOCIETY

International Symposium on

Advanced Packaging Materials (APM 2007)

October 3-5 2007, San Jose/Silicon Valley, California, USA

The **Advanced Packaging Materials Symposium** (APM 2007) is an international premier technical event on electronic packaging materials organized by the IEEE's Components Packaging and Manufacturing Technology (CPMT) Society and its Santa Clara Valley Chapter. APM 2007 will feature Keynote talks, technical presentations, and exhibits. The Symposium aims to provide leading-edge coverage of developments in all areas of packaging materials and processes. Attendees in the past have included academic researchers, developers, producers, and users of packaging materials from all over the world. APM is also a major packaging materials forum, providing opportunities to network and meet leading experts and exchange up-to-date packaging knowledge in the field.

Symposium Topics

Paper abstracts are sought on advanced packaging materials in the areas of processing, properties and interfaces, including but not limited to, the following topics:

(1) Emerging Technology and Business

- Emerging Packaging Materials Technologies
- Advanced Process Technologies
- Business & Supply Chain Issues

(2) Lead-Free, RoHS, Environment

- Lead-Free, RoHS Compliance, Recycle/Disposal
- Design for Environment for Materials

(3) Materials

- Cu Low-K
- Underfill & Encapsulant Materials and Processes
- Solders and Bumping
- Substrates, including HDI
- High Thermal Conductivity and Dielectrics
- Reliability
- Adhesives and Compounds
- Solders and Fluxes, Lead free, Bromine free

(4) Materials in Packaging Applications

- Advanced Package Types
- Package-to-Board Interconnect
- Applications to 3D Packaging

(5) Nano Technology

- materials at nano-scale: packaging & passive materials; optical, soldering materials

APM 2007 is co-located with the 32nd International Electronics Manufacturing Technology (IEMT) Symposium. Your APM registration also allows you admission to all IEMT sessions.

Abstract and Paper Requirements

An abstract of approximately 500 words that summarizes original and previously unpublished work such as historical case studies, research, development and application are welcomed. The abstract shall clearly state the purpose, methodology, results, and conclusions of the work. Key references to prior publications and how the work enhances existing knowledge should be included in the extended abstract. Authors are requested to designate appropriate areas for the purpose of abstract review.

The abstract must be received by **May 20, 2007**. The selection process is competitive and sufficient details need to be included to allow the Technical Program Committee to assess the content of the proposed paper. If selected, full papers will be due by **July 31, 2007** and should be a minimum of 6 pages in length (text and graphics). The paper should be non-commercial in nature, and describe significant results from experiments, emphasize new techniques, discuss trends of interest and contain technical and/or appropriate test results. Oral presentations will be limited to 30 minutes including 5 minutes for attendee questions.

Exhibition

A tabletop exhibition featuring suppliers of materials, equipment, components, software, and services to the electronics industry will also be held at the venue of the symposium. Please inquire for details about exhibiting.

For More Information, or to submit an abstract, please visit our website:

www.cpmt.org/apm

Or contact:

General Chair: Dr. Dongkai Shangguan, Flextronics
dongkai.shangguan@flextronics.com

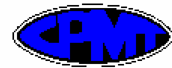
Technical Program Committee Chair: Dr. Paul Wang, Microsoft
pauwang@microsoft.com

Final Program

Future Directions in IC and Package Design Workshop (FDIP)

October 28, 2007, Atlanta, GA

sponsored by:



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CPMT Technical Committee on Electrical Design, Modeling, and Simulation (TC-EDMS)

1:15pm - 1:30 pm **Welcome Remarks, Alina Deutsch, IBM, Madhavan Swaminathan, GIT**

SESSION I: SYSTEM DESIGN

1:30pm – 4:00 pm

Session Chair: George Katopis – IBM Corporation

1:30pm – 2:05pm "Signal Bandwidth for High Performance Computing" – Dale Becker, IBM Corp.

2:05pm – 2:40pm "Wireless Proximity Communications for 3D System Integration" – Tadahiro Kuroda, Keio University

2:40pm – 3:15pm "A Critical Assessment of the State of the Art in Multiscale Multiphysics Modeling of Microelectronics - Jayathi Murthy, Purdue University

3:15 – 4:00 pm - Refreshment Break

SESSION II: POWER DISTRIBUTION

4:00pm – 5:55 pm

Session Chair: Gregory Taylor, Intel Corporation

4:00pm – 4:35pm "Power Delivery Challenges for Mobile Platforms" – Tawfik Arabi, Intel Corp.

4:35pm – 5:10pm "Modeling Challenges for Power Distribution Analysis" – Madhavan Swaminathan, Georgia Institute of Technology

5:10pm – 5:45pm "Power Delivery System Design Challenges and Explorations on How to Overcome Them" - Jiayuan Fang, Sigrity, Inc.

5:45pm – 5:55 pm Closing Remarks, Madhavan Swaminathan, GIT, Alina Deutsch, IBM

Held just prior to the **Electrical Performance of Electronic Packaging Conference**
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- Post-processing electronics
- Noise reduction techniques in sensors interfaces
- Testing techniques for sensors systems
- Sensors networks

Invited Papers:

"Ultra-low power Biopotential Interfaces and their application in wearable and implantable systems"
Chris Van Hoof, Refet Firat Yazicioglu, Tom Torfs, Patrick Merken (Imec, Leuven, Belgium)

"Sensor networks for industrial applications"
A. Flammini, P. Ferrari, D. Marioli, E. Sisinni, A. Taroni (Brescia University, Italy)

"Molecular Electronic Circuits"
Paul D. Franzon (North Carolina State University, USA)

"CMOS Chips for Bio Molecule Sensing Purposes"
Roland Thewes

"Application of three-dimensional optical acquisition to the documentation and the analysis of crime scenes"
Giovanna Sansoni (Dept. of Electronics for Automation, Brescia University, Italy)

"Energy Scavenging for Wireless Sensor Nodes"
Eric M. Yeatman (Imperial College London, UK)

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- Material risk index calculations for part insertion
- Electronic part qualification and testing
- Electronic system refresh/redesign methodologies

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