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President's Column…..

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Greetings!!!

What's in your Holiday Gift Wish List?

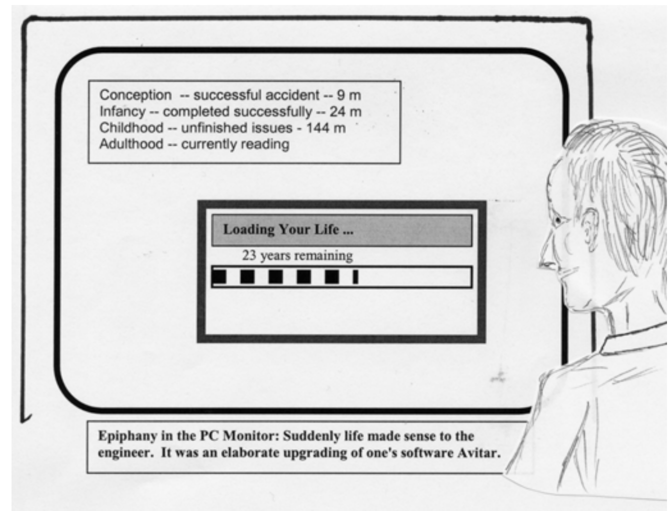
The month of December has become a very important month for the electronics industry. For consumers this has been the month of gift lists, gift shopping and gift giving. The daily news reports indicate that electronic products are at the top on consumers' buying lists. Such include HD televisions, digital cameras, game consoles, cell phones, MP3 players, iPods, laptop computers, and many peripheral products derivatives that an individual person would carry with him or her, for leisure and business, at home, at the office, or at sporting activities.

People of all ages are adopting new technologies, nested in new electronic products, at an astonishingly fast rate. They range from multifunction music players, digital cameras, camcorders, health monitoring devices, and life-like HD home entertainment centers, interconnected to the internet and wireless services. New players are coming into the consumer electronics market space with new offerings that spark the imagination, whether it is to be music, video or news on-the-go, or instant access to family, friends, and businesses, around the globe. Interactive games and more life-like home entertainment are being offered with great fanfare and excitement.

From the early days of Jack Kilby and Robert Noyce, the electronics industry has always been driven by the market and pushed by technology. This market drive has been led by faster system performance from mainframe computer servers to workstations, and PC's with decreasing cost, over the last forty years. For these forty years this market drive has been well served by the technology push under the banner of Moore's Law, which called for doubling of transistors per device every 12 to 18 months.

Today's consumer driven market adds different dynamics to this market drive and technology push equation. While Moore's Law is necessary, the industry needs "more than Moore" innovations to meet the challenge of the market drivers. *(Continued on Page 3)*

Cartoon of the Month:



… By Dave Palmer

IEEE CPMT Society Board of Governors Members-at-Large for 2007-2009

Dr. Philip E. Garrou, Chair Nomination Committee, and
Ms. Marsha Tickman, Executive Director, CPMT Society

The IEEE Components, Packaging, and Manufacturing Technology Society Constitution and Bylaws provide that the membership shall elect each year six Members-at-Large to the Society Board of Governors to serve a three-year term.

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2007 Deadlines for Submitting Articles:
March 23rd, 2007
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)

"More Moore" and "More than Moore"

In 1965 Gordon Moore, then Director of Research at a small start-up company called Intel, wrote a technical paper projecting that in the next decade the number of transistors in an integrated circuit device would double every 12 to 18 months. This has become known today as the Moore's Law. It is the guideline for the semiconductor industry in the timing for industry-wide technology for advanced IC products. With decreasing feature size, packing more transistors in the same space results in increasing performance (speed) and effectively lower cost per transistor. Moore's Law scaling is the standard-bearer that drives the semiconductor industry's supply chain from the front end to the back end. It focuses the knowledge supply chain – from research to development and manufacturing – to come up with scientific advances and technology breakthroughs. The International Technology Roadmap for Semiconductor (ITRS) has closely monitored the global industry and charted the future technology directions and timing based upon Moore's Law.

Periodically there have been serious discussions on whether Moore's law scaling will reach an end, because of limits of physical law. The industry has continued producing higher density faster chips at decreasing technology nodes. These, in turn, enable more powerful and faster computers, routers, workstations, PCs and laptops.

Today HD TVs, cell phones, digital cameras, PDA's (Blackberries), iPods, MPC players, game consoles and other consumer gadgets incorporate capabilities and functions, more than just raw IC computing speed. These functions are provided by RF & mixed signal devices, different sensors, MEMs, image sensors, and other analog devices. The requirements for miniaturization, size, weight, shape and look to appeal to the ultimate consumer add further sophisticated dimensions to the directions of device packaging and system integration.

At the ITRS Spring Conference in April 2006, the phrases "More Moore" and "More than Moore" were been added to the roadmap lexicon to formalize this duality of technology directions. In past years we have seen an acceleration of innovations in device and system packaging. Packaging architecture and design concepts, system integration technologies, packaging materials, and manufacturing processes are all progressing rapidly. The cell phone and broader consumer electronics products market have led the way in adoption of new technologies such as wireless and mixed signal devices, image sensors and optoeletronics, MEMs and biochips. These technologies and the market in turn drive new innovations including system in package (SiP), wafer level packaging, three dimensional packaging, thinned wafers, printable circuits, embedded passives and active devices. And the list goes on.

Innovations and Creativity

In my personal view this rise of consumer-related electronics products is very much related to how individuals work and to the growing global networked environment. I have included here cell phone, PDA, laptop, GPS, game consoles, IPods, digital cameras, video recorders and players, and other devices and accessories that expand our reach over the internet and wireless network. While the convergence between communication and computing has been long forecasted, we now are seeing their benefits to individuals and their impact in the consumer electronics market.

It is interesting that one of the leading game consoles available on the marketplace today contains some of the most advanced device and packaging technologies and sells for several hundred dollars. And its operation takes full advantage of the broadband communication channel in the global internet network. (see December 2006 issue of Spectrum). At the same time another one of the most popular game consoles has, in its controller function, a state of the art three axis accelerometer MEMs device, connecting the players to the game. This is the same MEMS device technology used to control automobile stability. Think about it. We have literally the best creative innovations and most advanced technologies in the palms of our hands.

What will come next? And what was on your Holiday Gift List?

Food for Thought

In my last September message to you I talked about the multidisciplinary nature of our profession. I was reminded of this recently when I read a column by Thomas Friedman in the International Herald Tribune. He quoted Marc Tucker, head of the National Center on Education and the Economy, whose organization would be coming out with a report on the US educational system titled "Tough Choices or Tough Times". This quote from Marc Tucker reads: "One thing that we know about creativity is that it typically occurs when people who have mastered two or more quite different fields use the framework in one to think afresh about the other." Our profession, which is full of people from diverse disciplines, emphasizes creativity, invention and innovation in everything we do. Together let us make CPMT the "Creativity and Innovation Society".

IEEE CPMT Society Board of Governors Members-at-Large for 2007-2009

(Continued from Page 1)

The IEEE Components, Packaging, and Manufacturing Technology Society Constitution and Bylaws provide that the membership shall elect each year six Members-at-Large to the Society Board of Governors to serve a three-year term.

In 2004, the CPMT Board of Governors approved revisions to the Constitution and Bylaws to ensure that the Board reflects and represents the Society's global membership. This is the second election to be conducted under the new methodology – in which members-at-large will be elected to achieve totals proportionate to the geographic distribution of CPMT members. For the 2006 election, this translated as follows:

Regions 1-6, 7 and 9 (US, Canada, South and Central America): Elect 3 members
Region 8 (Europe, Africa, Middle East): Elect 1 member
Region 10 (Asia/Pacific): elect 2 members

The six Members-at-Large elected will join continuing Members-at-Large on the Board of Governors:

From Regions 1-6, 7 and 9: Vasudeva Atluri, Steve J. Bezuk, Rajen Chanchani, Li Li, Kitty Pearsall, Dongkai Shangguan, Pat-

rick Thompson and CP Wong. *From Region 8:* Eric O. Beyne, Klaus-Jürgen Wolter. *From Region 10:* Kishio Yokouchi.

The Nominating Committee included the CPMT Strategic Program Director, Region 8 Johan Liu and the Strategic Program Director, Region 10 Charles Lee. Each Strategic Program Director worked with volunteer leaders in his respective Region to identify a high-quality slate of candidates from that Region.

Voting members elected Members-at-Large from within their respective Region only -- that is, members in Region 8 voted for Members-at-Large from Region 8 only; members in Region 10 voted for Members-at-Large from Region 10 only, etc.

The following pages contain biographies and photographs of candidates elected for CPMT Society Board of Governors Members-at-Large for 2007 from all Regions.

Regions 1-6, 7, 9:

PAUL D. FRANZON (S'85, M'88, SM'99, F '06) is currently a Professor of Electrical and Computer Engineering at North Carolina State University. He earned his Ph.D. from the University of Adelaide, Adelaide, Australia in 1988. Prior to earning his Ph.D., he worked for DSTO Australia, designing towed array sonars, and was a consultant at AT&T Bell Laboratories, working on Wafer Scale Integration. In Australia, he also cofounded Communica Pty.Ltd. which focused on computer networks.

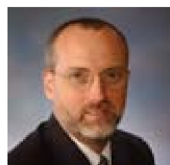
Since 1989, he has primarily worked at North Carolina State University. His focus there has been on building systems incorporating advanced packaging, high frequency CMOS VLSI, MEMs and Nanotechnology. His group has built a number of systems including high performance cryptographic and DSP MCMs, 3D DSP and computer systems, as well as hardware for advanced networking. His group has worked on a number of novel high-speed interconnect schemes, both intra and inter chip. He also has a strong interest in integrated Microsystems and Nanocomputing. He is well known as an expert in the design and signal integrity analysis of high speed electronic systems, chips and packaging. In 2000, he cofounded LightSpin Technologies Inc., where he also worked as VP (Engineering). Since 1989, He has secured over $20M of research funding, has graduated over 22 Ph.D. students, has been awarded four patents, and has published over 150 papers.

Dr. Franzon also served for 13 years as an Infantry soldier and officer in the Reserve Component of the Australian Army, including 3 years of attachment to the US Army National Guard. He held ranks from Private to Captain.

Inside CPMT, Dr. Franzon has served for several years as an Associate Editor for the *IEEE Transactions on Advanced Packaging*. He was Program Chair and General Chair of the IEEE Multi-Chip Module Conference in 1996 and 1997. He is co-chair of the IEEE Topical Workshop on Electrical Design of Electronic Packaging, in 2006-7.

In 1993 he received an NSF Young Investigators Award; in 2001 was selected to join the NCSU Academy of Outstanding Teachers; in 2003, selected as a Distinguished Alumni Professor and in 2005 won the Alcoa Research award. Dr. Franzon is a Fellow of the IEEE. His citation is "for contributions in chip-package codesign".

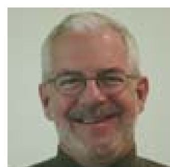
As a member of the Board of Governors, Dr. Franzon would like to focus on developing programs that enable engineers to maintain their technical edge and relevance through their entire careers.



WAYNE JOHNSON (S'77, M'79, S'80, M'82, S'85, M'87, SM'94, F'04) is a Professor of Electrical and Computer Engineering at Auburn University and Director of the Laboratory for Electronics Assembly and Packaging (LEAP). During his 19 years at Auburn, he has established teaching and research laboratories for advanced packaging and electronics assembly. Research efforts are focused on materials, processing, and reliability for electronics assembly and for extreme environment electronics. Current research projects span the temperature range for -180°C to +485°C. He has published and presented numerous papers at workshops and conferences and in technical journals. He has also co-edited one IEEE book on MCM technology and written book chapters in the areas of silicon MCM technology, MCM assembly, automotive MCMs (IEEE Press), flip chip assembly and high temperature packaging (IEEE Press). He is the Editor-in-Chief of the *IEEE Transactions on Electronics Packaging Manufacturing* and served as an Associate Editor prior to this appointment. He was elected a Fellow of IEEE in 2004 for 'his contributions to electronics that must operate in harsh environments."

Dr. Johnson received the B.E. and M.Sc. degrees in 1979 and 1982 from Vanderbilt University, Nashville, TN, and the Ph.D. degree in 1987 from Auburn University, Auburn, AL, all in electrical engineering.

Wayne is also a member of the International Microelectronics and Packaging Society (IMAPS), the Surface Mount Technology Association (SMTA) and IPC. He was the Technical Vice President of IMAPS from 2000-2004.



LEONARD W. SCHAPER (S'65, M'67, M'92, SM'96, F'99) received his B.S.E.E. from Newark College of Engineering in 1967, his S.M.E.E. from MIT in 1968, and his Doctorate from New Jersey Institute of Technology in 1973. He taught at NJIT before joining AT&T Bell Laboratories in 1978. There he held positions in electronic power conversion, electronic technology planning, and technical management. In 1990 he joined Alcoa Electronic Packaging, leading their thin-film MCM work. In 1992 he became Director of the High Density Electronics Center and Professor of Electrical Engineering at the University of Arkansas, where he led a research program in advanced interconnect technologies, including superconducting MCMs, diamond heat spreaders, mesh plane power distribution, MCM-D/L process development, integral passives, flex/thin silicon packaging, and ultra-low inductance decoupling capacitors. In 2002 he gave up administrative responsibilities at HiDEC to concentrate on teaching and research.

Len has been active in electronic packaging since 1980. He holds eighteen patents and has authored or co-authored over 250 talks

and papers. He served for twelve years on the IEEE Computer Packaging Committee, on the International Electronics Packaging Society (IEPS) Board of Directors from 1990 to 1996, was President of the IEPS in 1996, and was instrumental in merging IEPS with ISHM to form IMAPS. He was an Associate Editor of the IEEE CPMT Transactions Part B, Advanced Packaging, from 1992 to 2000. He served as a member of the CPMT Board of Governors from 1998 to 2001. He serves on the organizing committees for both the IEEE Japan Systems Packaging Workshop and the Japan VLSI Packaging Workshop, for which he is currently Vice Chair.

Len is a Fellow of the IEEE and IMAPS, and is a member of Tau Beta Pi and Eta Kappa Nu. He received an Outstanding Paper Award for his 1994 paper at ECTC, a Best Paper Award for his 1996 IEPS Symposium paper, and an Outstanding Paper Award for his 1997 MCM Conference paper. He was awarded the 1996 CPMT Outstanding Sustained Technical Contributions Award, for his "many accomplishments in the field of electronic packaging, particularly related to multichip modules." In 2002 he received the William D. Ashman Award from IMAPS "for outstanding contributions to the field of electronic packaging…" He will give an invited keynote talk at the IEEE Systems Packaging Workshop in Italy in January, 2007.

Len wants to return to the BOG to help maintain CPMT's preeminence as the global society leader in electronic packaging.

Region 8:

PETRI SAVOLAINEN (M'95, SM'04) acts currently as Technology Manager at Display Entity, Technology Platforms, Nokia Corporation. He received M.Sc. in 1991 in physical metallurgy and finished his Ph.D. in 1996 in materials science from Helsinki University of Technology.

Petri Savolainen worked as research scientist at Helsinki University of Technology developing novel solder filled anisotropically conductive adhesives. He has served as a project manager in various national and EU projects on electrically conductive adhesives. The research work resulted in patent and commercialized product.

In 1996 he joined Nokia Research Center working in projects dealing with advanced packaging, including CSP and BGA, as well as leading edge printed wiring board technologies. Before joining Nokia Japan in 1999 he lead the team of packaging and interconnects team at NRC. In Japan he established packaging research team and laboratory. Currently he drives validation and verification development activities concentrating on long term reliability and quality improvements for displays with display manufacturers.

Petri Savolainen has more than 40 publications in international conferences and journals. He was a co-author of chapter on anisotropically conductive adhesives in Conductive Adhesives for Electronic Packaging, published by Electrochemical Publications.

Petri Savolainen has been an IEEE member since 1995 and a Senior Member since 2004. He served as IEEE CPMT Finland Chapter chairman 2002-2005. He has been actively involved in organizing IEEE International Symposium on Advanced Packaging Materials, Processes Properties and Interfaces as member of organizing committee 2000-2002 and as general conference chair in 2004. He was the vice-chair of organizing committee of the 4th International Conference of Adhesives in Electronics, 2000. He is also a board member of IMAPS Nordic and a member of Society of Information Displays.

Region 10:

PHILIP C. H. CHAN (M'80, SM'95) was born in Shanghai and raised in Hong Kong. He received his BS degree in electrical engineering from the University of California at Davis, where he graduated with highest honors and departmental citation. He received his MS and Ph.D. degrees in electrical engineering from the University of Illinois at Urbana-Champaign. He stayed at Illinois initially as an IBM Postdoctoral Fellow and later as Visiting Assistant Professor in Electrical Engineering.

Dr. Chan joined Intel Corporation, Santa Clara, California in 1981 as a Senior Engineer in the Technology Development Computer-Aided Design Department. Later he became a Principal Engineer and Senior Project Manager. Dr. Chan has the corporate responsibility for circuit simulation tools, VLSI device modeling and process characterization. In 1990, Dr. Chan transferred to the Design Technology Department of Microproducts Group. There he led a team of engineers that defined and developed a CAD system to design multi-chip module products. This effort led to the first functional 486 based multi-chip module at Intel. He joined the Hong Kong University of Science of Technology in April 1991 as a Reader. He became a Professor in 1997. He served as the Director of Undergraduate Studies, the founding Director of Computer Engineering Program, the Associate Dean of Engineering and the Acting Head and then Head of the Department of Electrical and Electronic Engineering until 2002. He is the Acting Dean of Engineering beginning in January 2003. His research interests include microelectronics devices, circuits, integrated sensors and electronic packaging.

Dr. Chan has been actively involved in local and international IEEE activities, particularly those activities involving CPMT and EDS Societies. He has been very active in organizing IEEE sponsored international and regional conferences. He was the Vice-Chairman of the Organization Committee of IEEE TENCON 1995. He was the Technical Program Chair of Asia South Pacific Design Automation Conference 1999. He has served in various capacities in the IEEE Multi-chip Module Conference, ICCAD, ECTC, IEDMS and EMAP.

Electronic and component manufacturing are expanding rapidly in Asia, particularly in Southeast and East Asia. This leads to the rapid increase in technical personnel who are interested in the technical information disseminated by CPMT. A significant percentage of CPMT membership is now from Asia. Further expansion is anticipated. If elected to the CPMT BoG, I shall help promote CPMT in Asia and particularly in China using my network there. I believe CPMT shall further strengthen the link among the Asian countries, particularly in China. Strengthening the link with

Asia will help the CPMT membership throughout the world as many CPMT members need to interact with partners, contractors and sub-contractors in Asia. Most Asian countries lack a learned technical society such as CPMT. It should be an opportunity for CPMT to expand its membership base.

KWANG-LUNG LIN (M'98, SM'05) received his Ph.D. in Metallurgy from the Department of Materials Science and Engineering of Pennsylvania State University in 1984. He has been with the Department of Materials Science and Engineering (MSE) of National Cheng Kung University (NCKU) since 1985. He has assumed the Director General of the Department of International Cooperation of the National Science Council (NSC) of Taiwan since January 2005. Before joining the faculty position at NCKU, he did a one year postdoc research at Ames Lab-Iowa State University. He was the Director of the Institute of Micro-Nano Technology of NCKU (August~December 2004), the Coordinator of the Metal and Ceramic Program of NSC (2001~2004), the Director of the Precious Instrument Center of NCKU (1998~2001), and the Department Head of the MSE-NCKU (1991~1994). He has served in several international academic society committees including the Materials and Processing Committee-ECTC of IEEE-CPMT, Board Committee Member-IEEE CPMT (Taipei Chapter), Electronic Packaging and Interconnection Materials Committee of TMS, Surface Engineering Committee of TMS. He has aggressively served in co-organizing international academic symposia, as program committee, or as session chairman in the areas of surface modification, electronic packaging and Pb-free solder. The recent activities he has been involved since 2000 include EMAP (2000~2003), Pb-free Solder Symposium of TMS (2003~2005), and ECTC (2004~2006).

The areas of particular interest to Professor Lin are flip chip technology, solder bumping, and Pb-free solders. Part of most important research achievements is the successful development of a new Sn-Zn series solder as well as the understanding of the solid/liquid solder interaction mechanism and interfacial behavior. Professor Lin has published more than 135 international journal refereed papers and given more than 50 presentations in international academic conferences. He has been awarded 16 patents from USA, Japan, and Taiwan in flip chip, solder bumping, and Pb-free solders. He has also received Best Paper Award -Silver Medal (Plating and Surface Finishing Society (USA, 1997), Distinguished Research Award (NSC, 1997, 1999), Outstanding Engineering Professor Award (Chinese Engineering Society-Taiwan, 1997), C. T. Ho Distinguished Award (2006). He has been invited to deliver invited papers and keynote speeches in many international conferences, the most recent speech was at the International Conference on Nanotechnology and Advanced Materials (Hong Kong, 2006) on a subject of Pb-free solder. He has been serving as referee for a variety of international academic journals as well as project reviewers of the funding agencies of various countries. He is currently the editor of Materials Chemistry and Physics (Elsevier publisher).

He has also been serving as consultant to major electronic packaging industries in Taiwan. A great number of Ph.D. and MS graduates of his group are serving in major electronic packaging industry in Taiwan. Professor Lin is listed (biography) in Who's Who in the World (Marquis Who's Who, 1996) , Who's Who in Science and Engineering, (Marquis Who's Who, 1997), Who's Who in Asia and the Pacific Nations (IBC, Cambridge, 1999), Asia Men & Women of Achievement (Reguerdon & Co., Malaysia, 2003), Asia's Who's Who of Men & Women of Achievement (Rifacimento International Publiser, New Delhi, India, 2003), Who's Who in Asia (Marquis Who's Who, 1st ed., to be published in 2007).

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IEEE CPMT SOCIETY REPORT

IEEE FELLOWS ELEVATED AS OF JANUARY 2007

The following is the list of the CPMT Society Members that were elevated to IEEE Fellow Status as of January, 2007. The first 6 in the below list were evaluated by the CPMT Society's Fellows Committee, and the others by another Society's.

Jose Schutt-Aine
University of Illinois
155 Everitt Laboratory
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for contributions to modeling and simulation of distributed circuits with applications to signal integrity

Tawfik Rahal-Arabi
Intel Corporation
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Tigard, OR, 97223, USA

for contributions in the area of microprocessor high speed bus and power delivery designs

Jusheng Ma
Tsinghua University, China
Department of Materials Science and Engineering
Beijing, 100084, China

for contributions to electronic materials and packaging technology

Hiroshi Yamada
Toshiba Corporation
1, Komukai Toshiba-cho, Saiwai-ku
Kohoku-ku, Yokohama, 212-8582, Japan

for contributions to packaging technology of integrated circuits

Philip Ho Chan
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for contributions to the development of low-cost flip-chip technology

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26 Chin 3rd Road, Nantze Export Processing Zone
Kaohsiung, 811, Taiwan

for leadership in leading-edge integrated circuits technology

(continued …)

Also the following CPMT-associated new Fellows who were evaluated by other Societies:

Charvaka Duvvury
Texas Instruments, Inc.
Dallas, TX, USA

for contributions to electrostatic discharge devices and design protection methods for integrated circuit applications

Flavio Canavero
Electronics Department
Politecnico di Torino
Torino, Italy

for contributions to the modeling of circuit and electronic interconnects

Leslie Thomas Falkingham
Vacuum Interrupters Limited
Rugby, Warwickshire, United Kingdom

for contribution to the development and commercialization of vacuum interrupter technology

Antonio Orlandi
University of L'Aquila
L'Aquila, Italy

for contributions to high-speed digital systems

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Member Recognition:

Dr. Johan Liu Received Prestigious 2006 Magnolia Silver Award

Dr. Johan Liu received the 2006 Magnolia Silver Award from the Shanghai Municipal People's Government, China for his outstanding contribution to the development of Shanghai City.

Dr Liu is a professor at Chalmers University of Technology, Sweden and a special recruited professor at Shanghai University, China and a fellow of IEEE. He serves as a member-at-large of the Board-of Governors and as a region 8 strategic director for IEEE CPMT Society. In 2003 he set up the Sino-Swedish Microsystem Integration Technology (SMIT) Center with the support of Gothenburg City Government of Sweden and Shanghai City Government of China. Today he serves as the director for the SMIT Center as well as the director for the Key State Laboratory of New Displays and System Applications (Chinese Ministry of Education), Shanghai University, China. The Center is actively involved in building up exchange between Sweden and China and conducting application-driven research within the field of microsystems packaging and manufacturing for a number of global players including Intel, Hitachi, Sumitomo and Flextronics.

He was honoured with this award together with a number of top management level personalities from multi-national companies active in China including: Meiwei Cheng, CEO, China, Ford Co Ltd., USA; Christian Augsten, CEO, Siemens International Trade Co Ltd., Germany; Ding Yi Jin, CEO China Co Ltd, Philips, The Netherlands; William Molim Siu, VP, Intel, USA. For the whole list of the recipients, please the website

at: **www.shfao.gov.cn/wsb/node87/node94/node97/**

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Conference Reviews:

International Conference in Ukraine "Microwave & Telecommunication Technology" (CriMiCo-2006)

Yuri Poplavk

Central Ukraine ED/MTT/SSCS/CPMT/ComSoc Chapter Chair

Pavel Yermolov

CriMiCo-2006 Chair

At September 11-15 in Sevastopol National Technical University (Crimea, Black Sea) took place big annual international conference CriMiCo-2006. The Conference was supported by IEEE, and represented a wide spectrum of interests in various directions of modern electronics, including components, packaging and technology.

Approximate 350 scientists, engineers and students discussed different topics of modern electronics, Photo 1 and 2. More than 300 reports were presented at 4 plenary and 36 technical sessions by scientists and specialists from 161 universities and companies of Byelorussia, China, Germany, Great Britain, Ireland, Israel, Moldavia, Netherlands, Poland, Russia, Spain, Ukraine and USA, Photos 3 and 4. Among them there were such sessions as: "Nanostructures physics and simulation" (10 reports); "Nanoelectronics and nanotehnology application" (6 reports)"; Devices based on advanced physical properties" (24 reports); "Technology of materials" (11 reports); "Solid state devices CAD/CAM" (11 reports); "Monolithic integrated circuits" (12 reports); "Passive elements design techniques" (22 reports), and many others sessions devoted to microwave and telecommunication active and passive components as well as to their technology.

Two workshops "Training of radio engineers and specialists in the field of telecommunications" and "Common problems of high school pedagogics" as well as round-table discussion "Biophysical mechanisms of low-intensive mm-waves influence on human organism" will be held simultaneously with the conference. Two large volumes of technical digest (1025 pages in sum) were edited just before conference started that was great advantage for effective discussions. Conference Proceeding (books and CDs) were sent to the leading foreign libraries.

Among the approximately 100 reports, related to the direction "Components, packaging and manufacturing technology", it makes sense to note following reports: "New elementary base of Belorussian Institute INTEGRAL for modern digital automatic telephone stations" (V. Emelyanov), "Q-band low noise receiver module protected against incident signals" (P. Gamuletskaya), "Frequency-selective TV- channel amplifiers based on SAW-filters" (E. Semenov); "Ultra-low small signal insertion loss coplanar MMIC broadband power limiter" (I. Abolduev); "Superconductor single-proton detector for near- and middle IR waves"

(K. Smirnov), "Semi-optical hot electrons bolometer mixers based on thin NBN films for terahertz region" (Y. Vachtomin), "X-band MMIC low nice amplifiers" (A. Krutov), "Full-scale family of discrete GaAs steering circuits" (Y. Bogdanov), "Microwave microelectronic devices based on artificial transmission lines with negative dispersion" (P. Kapitanova), and many others.

CriMiCo-2006 Organizing Committee set up prizes for young scientists and post-graduates for the best papers presented at the Conference, Photo 5.

The Organizing Committee is glad to welcome interested scientists and engineers to nest CriMiCo-2007 that will be conducted in September 10-14, 2007 in the same place.

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31st International Electronics Manufacturing TechnologyConference, Kuala Lumpur, Malaysia

Submitted by Annette Teng Cheung, Vice-Chair, CPMT Society Santa Clara Valley Chapter

The 31st IEMT conference was held in Kuala Lumpur, appropriately in the heart of electronic manufacturing activities in Southeast Asia. Previously this conference alternated between Texas and California. IEMT2006 was a bonanza for networking and knowledge advancement amongst the packaging and assembly professionals in South East Asia. The conference opened on November 9th with great fanfare as excitement filled the conference hall with drum rolls and fog pumped onto the stage. The Malaysian Deputy Minister of International Trade and Industry, Mr. L.Y. Ng was present with Bill Chen and executives from local Semiconductor companies during the official opening of IEMT2006.

Mr. C. H. Chew who is the current Malaysian CPMT Chapter Chair and his dedicated colleagues from OnSemi, Freescale, Intel, Infineon, STMicro and Malaysian Universities put on a world-class conference. The team, including Ms. L.C. Tan, Mr. Azhar Aripin, Prof. Ibrahim Ahmad, Dr. C.K. Chee, Ms. Siti Ahmad and Ms. Fuaida Harun, worked non-stop to ensure a successful conference. They made incredible efforts to ensure that there were no hitches in the conference logistics. Their hard work and enthusiasm were rewarded by the number of quality papers and satisfied attendees. Over 350 attendees showed up as well as over 50 presenters from all over the world. They actually had to turn away last-minute registrants due to the lack of seating space. What an excellent outcome for the budding Malaysian CPMT Chapter since this is the first conference they have organized. The positive response is evidence that Malaysia is an ideal locale for IEMT. It also showed that there is a high demand for Malaysian packaging professionals to get together to learn more about packaging technology and to network with others on the regional level as well as the international level.

IEMT2006 featured 3 parallel sessions for 2 full days. There was a nice blend of papers from corporate and academia. Needless to say, the sessions were full and in most cases standing room only. What was amazing was the number of representatives from nations that are not known for electronic manufacturing. There was a paper from University of Tehran in Iran on "Creep of Lead-free Solder". Countries like Algeria and Bangladesh were represented by their citizens doing research and development work in electronics packaging in Malaysia. This conference revealed the high caliber of packaging research work in Malaysia in both the corporate sector and the academic sector. Surprisingly, more than five Malaysian universities/colleges from various Peninsula Malaysian cities contributed high caliber research work in packaging and testing technologies. An outstanding student from University Kebangsaan Malaysia who works for Prof. I. Ahmad won the best student paper prize and received a RM$2500 prize. And yes, my home state of Sarawak on the Borneo side of Malaysia was represented by Ms. H. M. Tang who is Reliability Section Manager at First Silicon, Borneo's one and only foundry. And may I add that Borneo takes pride in its historical headhunters who cut heads off, as well as modern-day headhunters who can place jobs for you in Borneo.

As an attendee, the hospitality shown by the Malaysian Chapter was very heart warming. We were fed with delightful Malaysian cuisine, entertained by ethnic Malaysian dancers and given a tour of Putrajaya (the equivalent to The Capitol Hill Mall in Washington DC). Representatives from the sister chapter of the one in the Santa Clara Valley included Bill Chen, Bernie Siegal, Dongkai Shangguan and myself. Thank you to Bill Chen for coming up with the idea of a CPMT sister chapter program. Next year's conference, IEMT2007 will be held in San Jose, October 2007 in conjunction with APM. The IEMT conference will then return to Kuala Lumpur in 2008 and alternating between Kuala Lumpur and San Jose. An abstract for IEMT2007 can be done by accessing **www.cpmt.org/iemt/**.

Time-out from the technical meetings so that the IEMT attendees can be entertained by Malaysian dancers, great food, and music

IMPACT 2006

Frank Shi, CPMT Liaison

According to a Research and Markets report released last month, if ranking are based on profit scale, nine Taiwan package and test companies are in the top 10, positioning Taiwan as pivotal player in the test and packaging industry. The global market scale of outsourced IC packaging is estimated to reach $13.1 billion this year, and for 2006, growth is forecast to reach 31.1%, 32% in 2007 and 33% in 2008.

Just like the well known role played by ITRI (the Industrial Technology and Research Institute) in developing Taiwan as the global

center for IC wafer foundry, the emerging of Taiwan as the global IC packaging center cannot happened without ITRI.

Thus it is surprising that the International Microsystems, Packaging, Assembly Conference Taiwan (IMPACT 2006), is the first IC packaging-related international conference organized ITRI.

IMPACT 2006 took place in Taipei from October 18-20, 2006. The Executive Vice President and Director of Electronics and Optoelectronics Research Laboratories of ITRI, Dr. Jyuo-Min Shyu, presented the opening remarks. In addition to 48 presentations, four keynote speakers invited included Dr. Rolf Aschenbrenner, FhG-IZM, Germany, addressed the topic of Innovative Substrate Technologies for New Products; Professor Avram Bar-Cohen, University of Maryland, U.S.A., addressed the issue of Thermal Packaging Challenges and Opportunities at the Micro and Nano Scales; Professor Masayoshi Esashi, Tohoku University, Japan discussed the topic of MEMS for Practical Applications with Attention to Packaging; Dr. Douglas C.H. Yu., of TSMC, Taiwan, presented his views on The 3rd dimension—More Life for Moore's Law.

The conference attracted many industrial sponsors including LINGSEN, ASE, TSMC, SPIL, SIPO, KYEC, Winbond, Cadence, Cadman, SUSS, IST and others.

Packaging accounts for five to 25 percent of the total cost of a complete semiconductor product, and such proportion may increase as technology advances. It is expected, as pointed out by Dr. Shyu, Taiwan's packaging industry will need to focus their attention to core advantages and to increase in R&D and international cooperation to cope with competition from rapid product updates and to keep its position as the world's packaging center.

Keynote Speaker Dr. Avram Bar-Cohen giving a presentation at IMPACT 2006

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WWW.IEEE.ORG/mgm/

Keynote Speaker Dr. Douglas C.H. Yu giving a presentation at IMPACT 2006

Keynote Speaker Dr. Masayoshi Esashi giving a presentation at IMPACT 2006

Keynote Speaker Dr. Rolf Aschenbrenner giving a presentation at IMPACT 2006

Keynote Speakers Dr. Tohru Ogawa giving a presentation at IMPACT 2006

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Chapter Reports:

IEEE CPMT Society Regional 8 Chapters

Johan Liu, Strategic Director for IEEE CPMT Region 8

IEEE CPMT Society Region 8 Chapters held a meeting on September 6th, 2006, at Dresden Congress Center where ESTC Conference is held. The following are the highlights:

- 23 CPMT chapter chairs in region 8 and key CPMT active persons and CPMT officers participated in the meeting.
- William Chen, the IEEE CPMT Society president gave an introductory speech and he also presented the IEEE CPMT Society Officers:
  - Rao Bonda, VP Technical
  - Rolf Aschenbrenner, VP Conference
  - Paul Wesling VP Publications
  - Al Puttlitz, VP Education
  - Marsha Tickman, Executive Director
  - William Brown, Strategic director for student chapter development
  - Johan Liu, Strategic Director for region 8
  - Current Board of Governors representatives (BOGs) from Region 8
  - Klaus-Wolter, Eric Beyne and Johan Liu

Johan Liu gave a presentation on the CPMT Chapter situation in Region 8, a vision statement for the IEEE CPMT Region 8 network, a summary report of IEEE CPMT Region 8 activities during the last year, discussed the budget for Region 8 and he also proposed and suggested some activities in Region 8. The idea is to have a chapter chair meeting in Oulu, Finland during June 17-20, 2007 in connection with a jointly sponsored IEEE CPMT and IMAPS Europe Conference (EMPC). He also asked for candidates for IEEE Fellow, Senior member nomination and suggestions of Distinguished Lecturers from the region and he will contact chapter chairs for this.

There is a discussion about the Germany CPMT chapter. William Chen will contact the chapter leader Elke Zakel for further discussion.

Otto Andersen from West Norwegian Research Institute and Knut Aasmundtveit from University College in Vestfold, Norway will try to set up the Norwegian CPMT Chapter.

William Brown mentioned that he is interested in helping to set up new student chapters in the region.

2006 Accomplishment of IEEE CPMT Society Phoenix Chapter 2006 Accomplishments

Submitted by Dr. Daniel D. Lu, Chair, CPMT Phoenix Chapter

CPMT society Phoenix Chapter has been very active especially in 2006. We organized 10 monthly seminars, 2 technical tutorials and one annual workshop. A variety of interesting topics including electronic packaging, optoelectronics, and nanotechnology were covered in the seminars. The average number of attendees was about 30 people. The two technical tutorials (Thermal Design and Management in Electronics; and Failure Analyses for Electronic Packaging) had high-quality presenters and were well received by the audience. About 120 people attended the one-day workshop entitled as “Convergence of Communications & Computing” and the feedback received was very positive. The workshop was well organized and quality of talks was excellent. In summary, CPMT society at Phoenix chapter had a very successful year.

Membership & Chapters Update

Submitted by Ralph W. Russell, II
Strategic Director for Membership & Chapter Development, IEEE CPMT Society

Thank you for your support of the CPMT Society. Thanks for renewing your membership each year. Thanks for serving on the various committees. Thanks for subscribing to CPMT publications. Thanks for attending CPMT conferences. Thanks for being a CPMT Chapter leader. Thanks! Thanks! Thanks!

Each year the CPMT Society recognizes an outstanding Chapter. If you are a Chapter leader, please let us know about the great work your Chapter has done during 2005 and nominate your group for the Chapter of the Year Award.

ACCESS A WEALTH OF KNOWLEDGE AT WWW.CPMT.ORG
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Put your Technology Leadership in Writing!

Publish in our IEEE Transactions

Figures in full color; worldwide access to results.
For more details:
www.cpmt.org/trans/

Watch for the March, 2007, Newsletter Issue
IEEE CPMT Society News

Send Your News Articles to the Editor at
nsltr-input@cpmt.org

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Visit ieeexplore.ieee.org and download them

Purchase the CD-ROM at www.cpmt.org/proceedings

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www.cpmt.org/conf/

IEEE CPMT Society Newsletter

Send inputs, suggestions, and articles by email to
nsltr-input@cpmt.org

….. 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**

General Chair	Technical Chair	Program Chair
Dr. Kripesh VAIDYNATHAN	Dr. Tong Yan TEE	Dr. Teck Kheng LEE
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Sponsored by

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

Deadlines

-Paper Submission: February 28, 2007
-Notification of Acceptance: March 31, 2007
-Guaranteed hotel reservations: April 5, 2007
-Advance registration: April 14, 2007

Paper Submission

Peospective Authors should send (by e-mail only) a formatted two-page or four-page paper to the Program Chair (ivano.maio@polito.it) by Februrary 28, 2007
Please see the submission instruction on our website:
www.spi.uni-hannover.de

CALL FOR PAPERS

The workshop covers the areas of interconnections and packaging modeling, simulation, design, measurement and testing at chip, board, and system levels.
It includes but is not limited to the following topics:

- 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

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

Design for 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 as Templates
- Using Generic Process Platforms
- Cell Phone/etc for Portable, Low-pwr, High-density, WLP, 3D
- 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 **APRIL 30.** 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

CALL FOR PAPERS

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 **April 30, 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, 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:

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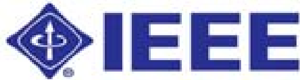

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Continuing technological improvements are opening new areas of application in micro- and nano-electronics and photonics. Micro- and nano-sensor systems include on the same die or in the same packaging also the post-processing electronics for a wide range of applications. Many systems are in remote or noisy locations, e.g. industrial process control, automotive systems, space aircrafts. The environmental conditions may be very harsh reducing the overall lifetime due to fast ageing, thus determining the performance degradation. Some applications, as well as biomedical, particle physics and electrochemical ask for suitable interfaces to improve the signal detection.

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- Optoelectronic and photonic sensors
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- Post-processing electronics
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- Testing techniques for sensors systems
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Papers (max 6 pages) must be submitted by **30th February 2007** to **iwasi@deemail.poliba.it** in **pdf** format. All text must be in a two-column format. Columns are to be 3-1/4 inches (8.25 cm) wide, with a 5/16 inch (0.8 cm) space between them. Text must be fully justified. Type your main text in 10-point Times, single-spaced. The main title (on the first page) should be centred and in 14-point Times Bold. Paragraphs titles should be in 12-point Times Bold.

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Author notification: **30th March 2007**

Camera ready : **5th May 2007**

For any information on the paper submission please contact:
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Web page is available at**: http://iwasi.poliba.it**.

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