



Components, Packaging, and Manufacturing Technology Society Newsletter



THE GLOBAL SOCIETY FOR MICROELECTRONICS SYSTEMS PACKAGING

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President's Column....



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2014–2015 CPMT President
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Now that autumn is rapidly approaching, I hope you have enjoyed a wonderful summer with friends and family. For me, this summer has certainly been busy....

In May, I participated in CPMT's flagship conference, the 64th Electronic Components and Technology Conference (ECTC), held in Orlando, Florida, USA. It was a great success with attendance of 1,170, one of the highest ever, from 33 different countries. As we do every year, CPMT presented several awards to recognize the extraordinary achievements across our profession, industry, and society. I would like to extend my congratulations to this year's winners:

- Electronics Manufacturing Technology Award: Raj Master
- David Feldman Outstanding Contribution Award: Ricky Lee
- Outstanding Sustained Technical Contribution Award: Madhavan Swaminathan
- Exceptional Technical Achievement Award: Pradeep Lall
- Outstanding Young Engineer Award: Yi Li
- Regional Contribution Awards: Sam Karikalan, Klaus-Jürgen Wolter, and Kanji Otsuka

Nominations for CPMT's 2015 awards will open soon. Please visit our website at <http://cpmt.ieee.org/awards.html> to submit your nominations.

In July, I attended Semicon West 2014 in San Francisco, California, USA. There was a strong sense of optimism about the growth of the semiconductor industry in the 2nd half of this year despite the many debates on IC scaling trends ("Moore's law is approaching its end, "long live Moore's law," and so on). In addition, there is an increased sentiment that packaging technology is playing a significant role in extending Moore's law further with

advanced packaging innovations such as 3D stacking, 2.5D integration, and others.

In August, I travelled to China to attend three remarkable events: a workshop by the Joint Electronic Devices Society (EDS) and CPMT Society in Shanghai; ICEPT – the largest packaging conference in China of which CPMT is a technical co-sponsor – in Chengdu, and the inauguration of the first student CPMT chapter at Tsinghua University in Beijing. I was very excited to witness the strong synergy and collaboration between EDS and CPMT. With the tremendous growth of semiconductors and microelectronics in China, I continue to believe in the proliferation of CPMT's services and influence there.

With the momentum of these summer activities, I'd like to follow up on my last newsletter message to lay out the two priorities for my term of CPMT presidency:

1. Influence emerging and disruptive technologies: Our industry is going through major transformation driven by market shift and technology disruptions such as Mobility, Cloud/Virtualization, and Internet of Things (IoT). It is of paramount importance for the CPMT Society to look ahead at new and emerging

(continued on page 3)

NEWSLETTER SUBMISSION DEADLINES:

1 November 2014 for Winter issue 2015

1 February 2015 for Spring issue 2015

1 May 2015 for Summer issue 2015

1 August 2015 for Fall issue 2015

Submit all material to nsltr-input@cpmt.org

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Chapters and Student Branch Chapters

Refer to cpmt.ieee.org for CPMT Society Chapters and Student Branch Chapters list

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SFI Logo

technologies and embrace the disruptions. To this end, we have launched these key programs:

- Long-range Society planning: As we experience the shift in our industry from developing packaging technology to system solutions, we are defining CPMT's position on disruptive technologies such as flexible electronics, wearable electronics, Si Photonics, 3D printing and other hot topics in the 5–10 year time horizon.
- Strategic collaborations: We recognize the importance of collaboration with other IEEE and non-IEEE organizations and are working on several strategic partnerships with IEEE EDS, SEMI, and ITRS 2.0. There will be joint chapter events, workshops, symposiums, and technology roadmap development activities.

2. Increase membership value and expand membership: In order to better serve our CPMT membership, there will be a strong focus on internal development as well as on expanding our reach to diverse backgrounds. Stay tuned for these types of initiatives:

- Webinars, joint webinars with EDS, and other education programs;
- Career development and mentoring opportunities;
- Global launch of new chapters including student chapters. I am pleased to announce our first student chapter at Tsinghua University in China in addition to two new chapters, a joint chapter with EDS in Shanghai, China and a new chapter in Bangalore, India.

With these two priorities in mind, we can anticipate a busy schedule for the remainder of 2014:

- ESTC, CPMT flagship conference in Europe will be held in Helsinki, Finland on Sept. 16–18
- EPTC, CPMT flagship conference in Asia will be held in Singapore on Dec. 3–5
- EDAPS will be held for the first time in Bangalore, India on Dec. 14–16

I look forward to seeing you at these upcoming CPMT events!

CPMT Society News....

Congratulations to 2014 CPMT Award Winners

The CPMT Society annually recognizes individuals for contributions to the profession through technical achievements, service to the industry and to the Society. The following individuals received their awards at the 64th Electronic Components and Technology Conference (ECTC), May 2014.

The **Electronics Manufacturing Technology Award** is given to recognize major contributions to Electronic Manufacturing Technology in fields encompassed by the CPMT Society. The 2014 recipient:



Raj Master, Microsoft, USA

For pioneering managerial and technical leadership in packaging technology and manufacturing, thermal solutions, substrate technology and manufacturing, and flip chip bumping that significantly impacted advancements of electronic products in the industry.

The **Outstanding Sustained Technical Contribution Award** is given to recognize outstanding sustained and continuing contributions to the technology in fields encompassed by the CPMT Society. The 2014 recipient:



Madhavan Swaminathan, Georgia Institute of Technology, USA

For significant and sustained contributions that have helped shape the design aspects of packaging in the areas of power delivery, System on Package (SOP) technologies and 3D Integration.

The **Exceptional Technical Achievement Award** is given to recognize an individual, or group of individuals for exceptional technical achievement in the fields encompassed by the CPMT Society. The 2014 recipient:



Pradeep Lall, Auburn University, USA

For extensive contributions to analog and power packaging, focusing primarily on manufacturing assembly process modeling, reliability prediction, and innovations in analog and power packaging.

The **David Feldman Outstanding Contribution Award** is given to recognize outstanding contributions to the fields encompassed by the CPMT Society through executive or managerial directions. The 2014 recipient:



S.W. Ricky Lee, Hong Kong University of Science and Technology, Hong Kong

For sustained leadership and service to the CPMT Society in a broad range of areas including Chapter management, conferences, publications, and governance, most recently serving as 2012–2013 CPMT Society President.

The **Outstanding Young Engineer Award** is given to recognize outstanding contributions to the fields encompassed by the CPMT Society by a young (less than 35 years old) member through invention, technical development, publications, or new product implementation. The 2014 recipient:



Yi Li, Intel, USA

For outstanding contributions to the field of electronic packaging materials and nanotechnology through work in the design, synthesis and characterization of polymeric composite materials, especially conductive adhesives for electronic packaging.

The **Regional Contribution Awards** are given to recognize significant and outstanding leadership and contributions to the growth and impact of CPMT programs and activities at the Region level. One award may be given annually for each Region/Groups of Regions: Regions 1-7 & 9; Region 8; and Region 10. The 2014 recipients:

REGIONS 1-6, 7 & 9



Sam Karikalan, Broadcom, USA

For founding the CPMT Orange County Chapter and providing strong leadership in Chapter and conference development and management.

REGION 8



Klaus-Jürgen Wolter, Technische Universität Dresden, Germany

For significant contributions to the training and development of future CPMT scientists and engineers in Region 8 as General Chair, International Spring Seminar on Electronics Technology (ISSE), 2002–2012 and establishing and developing the Electronics Packaging Lab (AVT), Technical University of Dresden to become the largest university electronic packaging research and training center in Germany.

REGION 10



Kanji Otsuka, Meisei University, Japan

For noteworthy contributions to the CPMT Japan Chapter and Region 10 as founder (1993) and continuing Committee Member of the VLSI Packaging Workshop, Japan, which grew to become the CPMT Symposium Japan, and as a longtime member of the CPMT Japan Chapter Committee.

**Call for Nominations for the 2015 CPMT Society Awards
Nominations Due by January 31, 2015**

The CPMT Society is full of highly talented professionals, and we have five awards to recognize those who have performed at an exceptional level. Do you have a friend or colleague who has made outstanding contributions to the technical fields within CPMT? Would you like him or her to receive recognition for these contributions? We would, too; you can make it happen by submitting a nomination today.

The Awards Committee is currently accepting nominations for the 2014 CPMT Awards. All nomination packages are due by January 31, 2015. Winners will be notified by April 15, 2015, and the awards will be presented at the 65th Electronic Components and Technology Conference, May 26–29, 2015, in San Diego, California, USA. A current nomination form can be found on the CPMT web site under the Awards link at: <http://cpmt.ieee.org/awards.html>. We look forward to receiving your nominations for any of the awards described below.

CPMT Society offers the following awards for the purpose of recognizing outstanding service and contributions to the professional purposes of the CPMT Society.

Outstanding Sustained Technical Contributions Award: To recognize outstanding sustained and continuing contributions to the technology in fields encompassed by the CPMT Society.

Prize: \$3,000 and Certificate

Eligibility: Recipient(s) must be a current member(s) of IEEE and CPMT (current in the year of the Award), and have been a member(s) of IEEE and CPMT for at least the prior three years.

Basis for Judging: Technical contributions must be sustained and continuing over a period of at least 15 and preferably 20 years. One major contribution will not qualify. Must be documented by open literature publications such as papers, patents, books and reports (available to the public).

Electronics Manufacturing Technology Award: To recognize major contributions to Electronics Manufacturing Technology in fields encompassed by the CPMT Society.

Prize: \$3,000 and Certificate

Eligibility: IEEE and CPMT membership is not required.

Basis for Judging: Contributions may include technical development of, or management (directing) of major new electronic manufacturing processes; significantly increasing yield and/or reliability of established manufacturing processes, etc. Contributions must be sustained and continuing over a period of at least 15 and preferably 20 years. Work in the management of CPMT Conferences or its BoG may be contributory but not sufficient to receive the award.

David Feldman Outstanding Contribution Award: To recognize an outstanding contribution to the fields encompassed by the CPMT Society through executive or managerial directions or through volunteer service.

Prize: \$2,500 and Certificate

Eligibility: Recipient must be a current member of IEEE and CPMT (current in the year of the Award), and have been a member of IEEE and CPMT for at least the prior five years.

Basis for Judging: Contributions to the organizations or enterprises connected with the field; contributions to CPMT Chapter or Board of Governors activities; contributions to the fields encompassed by the CPMT Society.

Exceptional Technical Achievement Award: To recognize an individual, or group of individuals (no more than three), for exceptional technical achievement in the fields encompassed by the CPMT Society.

Prize: \$2,500 (prorated for multiple recipients) and Certificate

Eligibility: Recipient(s) must be a current member(s) of IEEE and CPMT (current in the year of the Award), and have been a member(s) of IEEE and CPMT for at least the prior three years.

Basis for Judging: Technical contributions of the nominee(s) must be such that they are considered to be exceptional, not achieved by most members. A single major contribution will qualify for this award. The contribution could be a significant invention, introduction of a significantly new and important technology or product (in which case, the nominee may be a team leader), or significant work that advances the state-of-the-art in CPMT's field of interest. The technical contributions must be documented by open literature publications such as papers, patents, books, and reports (available to the public). Technical recognition and awards from the organization employing the individual(s) as well as awards from other IEEE and non-IEEE technical societies may also be contributory.

Outstanding Young Engineer Award: To recognize outstanding contributions to the fields encompassed by the CPMT Society through invention, technical development, publications and/or new product implementation.

Prize: \$1,500 and Certificate

Eligibility: Recipient must be a current member of IEEE and CPMT (current in the year of the Award), and have been a member of IEEE and CPMT for at least the prior three years, and must be 35 years of age, or younger, on 31 December of the year prior to the Award.

Basis for Judging: Technical contributions through patent invention, contributions to technology or product development within the CPMT's field of interest. May encompass management (directing) of significant new product introduction or implementation of major new electronic manufacturing processes; significantly increasing yield and/or reliability of established manufacturing processes. Contributions to the Society, through the BoG, Conferences, Chapters, etc., will also be considered. Proof of contributions may consist of open literature publications (preferred) such as papers, patents, books, and reports (available to the public). At least three letters from peers and management at the nominee's place of employment attesting to the accomplishment(s) can be accepted in lieu of publications.

Guidelines for Nominators:

- A recipient of any CPMT Major Award will be eligible for nomination for another CPMT Major Award after two award cycles have passed. (i.e., Recipient of XX Award in 2013 becomes eligible for nomination for YY Award in 2016.)
- Past recipients of an award are not eligible to receive that same award. For lists of past awardees, see <http://cpmt.ieee.org/awards.html>
- An individual may submit only one nomination per award but may submit nominations for more than one award.
- An individual may submit only one endorsement per award but may submit endorsements for more than one award.
- It is the responsibility of the nominator to ensure quality documentation to assist the Awards Committee in evaluating the candidate.
- Outstanding Sustained Technical Contributions Award is designed for the "practitioner", while the Electronics Manufacturing Technology Award is for the "Corporate Leadership".
- Please send nominations to CPMT Society Awards Committee Chair by e-mail (preferred) or mail.

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E-Mail Alias And IEEE Web Account Needed 2014 CPMT Society Board of Governors Election On-Line

In order to vote in this year's CPMT Board of Governors election, members will need to have a valid e-mail alias on record with IEEE and also have an IEEE Web Account.

Eligible voting members will receive notification by e-mail soon with instructions for voting on-line. You will need an IEEE Web Account to access the ballot and cast your vote. This Web Account is the same one you may use for IEEE services such as renewing membership and accessing IEEE Xplore.

If you do not recall your Web Account username and password, or aren't sure whether you have established an account, please go

to <http://www.ieee.org/web/accounts> to recover your password or establish a new account.

Please be sure to update your IEEE membership record with your current e-mail alias. If you DO NOT HAVE AN E-MAIL address or would prefer to receive a paper ballot by mail, please send your name, mailing address and IEEE Member Number by 1 October to:



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IEEE Canada Honors CPMT Member



Gamal Refai-Ahmed, GE Global Research Center, USA; University of Toronto, Canada

At the 27th Canadian Conference on Electrical and Computer Engineering held in Toronto on 5 May 2014, IEEE Canada presented a number of awards recognizing achievements and service by its members.

Gamal Refai-Ahmed, CPMT member and Associate Editor of the IEEE Transactions on Components, Packaging and Manufacturing Technology, was one of those honored. He received the 2014 IEEE Canada Robert H. Tanner Industry Leadership Award, for sustained leadership in product development and industrial innovation.

New IEEE CPMT Senior Members

The members listed below were elevated to the grade of Senior Member between January and August 2014.

The grade of Senior Member is the highest for which application may be made and shall require experience reflecting professional maturity. For admission or transfer to the grade of Senior Member, a candidate shall be an engineer, scientist, educator, technical executive, or originator in IEEE designated fields for a total of 10 years and have demonstrated 5 years of significant performance.

Individuals may apply for Senior Member grade online at: www.ieee.org/web/membership/senior-members/index.html

Haruo Akahoshi
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Raj Master

Abdulfattah Obeid
Mingzhe Rong

Bhanu Sood
Arthur Zingher

CPMT Webinars

CPMT Webinars allow you to attend lectures on the latest technology development topics within the CPMT Society's scope, presented live, by experts in our field. They typically run from one to one and one half hours, with time allowed for questions and answers.

The webinars are made available as a no-cost benefit for CPMT Members.

Most webinars are recorded. Recordings of and/or presentations from past Webinars can be accessed by CPMT Members in the CPMT Webinar Archive on the CPMT website: <http://cpmt.ieee.org/cpmt-webinar-archive.html>.

Topics of past webinars include:

- Power Electronics Packaging, Reliability, and Thermal Management

- Packaging Challenges in a World Driven by the Internet of Things and Migration to the Cloud
- 3D Printing: From Prototype to Production
- Nanomaterials for Printed Electronics
- Thermo-Mechanical and Mechanical Reliability of Electronics
- Platform Independent Photonic Design Tools and Concepts
- Sub-Terahertz Photonics for Ultra-Wideband Wireless Communications
- HELIOS Results/Achievements
- Active plasmonics co-integrated with Si-photonics and electronics for on-chip interconnects
- Advanced Packaging for High Power LEDs
- Electro-optical Printed Circuit Board and Interconnect Technologies and their Application to Data Center and HPC Systems

More Value for your CPMT Membership

CPMT Members have access to technical content from a variety of sources—available free of charge—as a membership benefit. The CPMT website has a Members Only area with content that includes selected presentations from regional conferences, Chapter workshops, seminars and meetings; recordings and presentation files of past CPMT Webinars; and special offers.

To access Members Only content, go to <http://cpmt.ieee.org/members-only.html> and log in using your IEEE Web Account.

Student Branch Chapter News....

Seminar on Materials Engineering

*Jorge Costa, Chair, Tamara Oliveira, Vice-Chair
Raquel Paulucci, Communication Director, Barbara Souza,
Secretary
Gustavo Nogueira, Project Volunteer*

IEEE Student Branch UFABC
IEEE Components, Packaging and Manufacturing Technology
Society Student Chapter UFABC Federal University of ABC

Abstract: The Student Chapter Components, Packaging and Manufacturing Technology Society aims to become a reference in Latin America in the development and implementation of technical projects, because, besides being the first CPMT Chapter of the region, it is directly linked to the course materials engineering from the Federal University of ABC, which set the best course of Brazil in this type of engineering in the last year, integrating university, society and the third sector in favor of joint and sustainable development. The goal of the Seminar on Materials Engineering is to bring speakers who work in the area of materials engineering, who will speak of their day-to-day, and that can demonstrate what are the difficulties, obstacles, and goals of professionals.

I. Challenge

Of the classical areas of engineering materials : polymers, ceramics, metal, and the need to meet certain niche marketing and scientific, has created a new area of advanced materials, which requires engineering materials for a technical and scientific knowledge of polymers materials, ceramics, metals in different applications of traditional classes. This diversity brings to materials engineering student a hard time choosing which mode is specializing in the third sector to work because their technical knowledge and their contribution to society depend on its ability to deal with these materials. It is estimated that half of the materials used in our daily lives is the result of development in the last 12 years. Based on this, the IEEE CPMT Student Chapter of UFABC aims to bring speakers from various companies to talk about their experiences in the labor market, and the different areas that the future engineer materials can act, thus enabling a greater understanding of the different areas and dissemination of projects and actions of the CPMT Student Chapter.

II. Solution

The solution found to minimize the doubts of the students of Materials Engineering is to bring professionals with a strong technical background, combined with practicality and experience in projects implemented in these companies and passed on to society in general. In each lecture it was demonstrated that companies are increasingly skilled professionals to innovate and implement new technologies, it is a fundamental characteristic of the materials engineer able to work in the research field, production, development, characterization and selection of materials regardless of their area of training.

III. Strategy And Methodology Used

From the creation of the working group the members of the CPMT Student Chapter, Barbara Souza, Gustavo Nogueira, Jorge Costa, Raquel Paulucci and Tamara Oliveira, created a schedule for carrying out the project as theme “Seminar on Materials Engineering.” The duration set by the working group for this event was between the months of January to September 2014, with a lecture every month covering the fields of materials contemplated by the university course (polymers, ceramics, metals, and advanced materials). The events had a brief presentation of what are the student chapter CPMT UFABC and IEEE CPMT Society, and soon after assembling the tables for post-lecture discussion and passage of the word for the speaker was conducted. The first event occurred on March 19th at 17.00 at UFABC, who gave a talk which was Dr. Bruno Geoffroy Scuracchio Engineer of Innovation and Enterprise Search Thyssenkrup with the theme of Shot-peening. This lecture contained the participation of students and professors (figure 1) from the course materials engineering, and he held a discussion about the different types springs and their manufacturing processes.

Soon after the lecture was to set a table discussions (Figure 2), with Dr. Bruno Scuracchio, a representative of the student chapter CPMT Gustavo Nogueira and Professor Dr. Sidney Ferreira representing the course materials engineering of UFABC, in order to discuss the concepts presented by the speaker and thus emphasize the fundamental role of the materials engineer in the production of springs and the role of engineering and materials engineer in demand of new materials with specific properties, with the aim of decreasing the process needs that other areas have such information, energy and transport.

The second lecture took place on March 23rd, at 17:00 at the Federal University of ABC with Dr. Mauro de Souza Paraiso, materials engineer and Materials Quality Manager at Mercedes-Benz Brazil, with the theme “Materials Engineer in Automobile



Figure 1: From left to right; Prof. Dr. Everaldo Carlos Venacio, tutor CPMT chapter; Prof. Dr. Danilo Justino Carastan, vice coordinator of engineering materials Ufabc; Dr. Bruno Scuracchio, Prof.ª Dr.ª Renata Ayres Rocha, coordinator of engineering materials Ufabc; Prof. Dr. Sydney Ferreira Santos Ufabc.



Figure 2: From left to right; Dr. Bruno Scuracchio, Prof. Dr Sydney Ferreira and student Gustavo Nogueira.



Figure 3: Presentation of the lecture “Materials Engineer in automobile industry”.



Figure 4: From left to right: Dr. Mauro Se Souza Paraiso, Materials engineer and Materials Quality Manager at Mercedes- Benz; Prof. Dr. Everaldo Carlos Venacio, CPMT Student Chapter Conselour; Tamara Oliveira, vice-chair of CPMT Student Chapter.

industry” (figure 3). The presentation grew out of the laboratories and nonmetallic materials processes. He started by inducing seasons camshafts valves, and applications engineer in various processes in automobile companies. After the end of the lecture it was structured a table (Figure 4) to start discussions on the theme.

The seminars had maximum duration of two hours, with one hour lecture was given another half hour off questions from the



Figure 5: Food collected for donation in the two lectures.

mediators that made up the table, and the last half hour late questions from participants.

IV. Results

The seminar had the participation of the first two companies, Thyssenkrupp and Mercedes-Benz Brazil. It was suggested that each participant bring in one of the lectures a kilo of non-perishable food or a hygienic product that was later sent as donation. It was collected a total of 75 kg of non-perishable food (figure 5) with a total share of the total audience of 140 people. In order to interact with the participants of the lectures and answer all the questions that have been raised, the speakers were longer in the round table enabling an explanation of their experiences, difficulties and what is waiting for future materials engineers.

From this, it was demonstrated the importance of this event for students and businesses, because there was a beneficial gain for both sides.

For students in materials engineering applications, different ways of working, problem situations and cases of success were shown, besides knowing the processes of production enterprises. In contrast, the enterprises have space to attract future employees, show the diversity of areas which the engineer can act and so have a more active role within the university. Moreover, the visibility that the CPMT Student Chapter received in relation to pupils who are more interested in participating in events and projects CPMT, and enable companies to know and be nearer future projects and events of this student chapter

V. Conclusion

The purpose of the seminar was reached to disclose and present the projects of the student chapter CPMT for students, and thus motivate them in future projects and events. The discussions around the work area of materials engineering was something quite remarkable what has been covered with these first two lectures could address different ways that engineers can work metals, and thus help them to have more knowledge of certain areas, in addition to make them reflect what the role of the engineer in society. The seminars from May to September will yet occur.

VI. Thanks

The completion of this seminar is an effort and support of Barbara Souza, Gustavo Nogueira, Raquel Paulucci and Tamara Oliveira. We welcome Thyssenkrupp and Mercedes-Benz—Real companies who kindly allowed the coming of their professionals Dr. Bruno Geoffroy Scuracchio and Dr. Mauro de Souza Paraiso. In particular, thanks to Professor Dr. Everaldo Carlos Venancio (Student Chapter Conselour, former coordinator of the Engineering Materials UFABC) for his support, help on the organization and contacts with companies. Thanks to Professor Dr. Renata Ayres (Materials Engineering UFABC Course Coordinator) and Prof. Dr. Danilo Justin Carastan (vice-coordinator of the course of Materials Engineering UFABC) for all the support in designing and participating in seminars. Thanks to Prof. Dr. Sydney Ferreira who proposed to assist in the discussion table, and all the teachers who are helping us in other projects and thus contribute to the daily growth of the CPMT Student Chapter. Finally, thank all those who participated and made donations, supporting in designing and participating in seminars.

VII. Biographies



Jorge Costa, student of the Bachelor of Science and Technology / Materials Engineering, Federal University of ABC (UFABC), is a professor and coordinator of the network emancipatory social movement free community courses since 2011, was mechanical phenomena UFABC monitor in 2012. currently is social coordinator of the National Meeting of Students of Metallurgy, Materials and Mining (ENEMET 2014), an event that happens simultaneously to international congress of the Brazilian Association of Metallurgy, Mining and Materials (ABM). Joined the IEEE in 2013, is the mentor of the student chapter of IEEE CPMT-UFABC Materials Engineering and was elected as president of the chapter in the management 2013–2014.

Tamara Santos, is a graduate in Science & Technology / Materials Engineering at the Federal University of ABC since 2011, is a teacher in the Preparatory School UFABC since 2012.



Currently serves on the organizing committee of the National Meeting of Students of Metallurgy, Materials and Mining (ENEMET 2014) event that happens Simultaneously the International Congress of the Brazilian Association of Metallurgy, Mining and Materials (ABM), where the course is representative of Materials Engineering UFABC, is vice president of the IEEE-CPMT- UFABC and president of Women in Engineering UFABC, is an active member of the IEEE Student Branch UFABC active in many activities inside.



Raquel Domingues Paulucci, student in Science & Technology University Federal do ABC. Participated in the founding of the IEEE CPMT Chapter UFABC ad currently serves as Communications Director of the same. He also serves as secretary or the IEEE Student Branch of UFABC.



Barbara Souza de Paula Student in Bachelor of Technology / Materials Engineering at the Federal University of ABC. Works in Student Chapter IEEE CPMT UFABC, acting as secretary.



Gustavo Nunes Nogueira, student of Bachelor of Science and Technology / Materials Engineering from the Federal University of ABC. Member of IEEE for the period of 2013/2014, part of Chapter Materials Engineering (CPMT) in the management of innovation projects. Currently research on composites of polymeric materials with reinforcements for mechanical applications.

New CPMT Student Branch Chapter at Tsinghua University

Siyang LI, Student Branch Chapter Chair

The First Workshop of IEEE CPMT Student Branch Chapter at Tsinghua University was successfully held on August 18th 2014. The workshop was organized by Siyang LI, Chair of CPMT Student Branch Chapter, and Guoshuai Yang. About 30 students and teachers attended this event.

Branch Chapter Advisor, Liangliang Li, gave welcome address. Qing Li from IEEE Client Services gave an introduction on the activities of IEEE Student Branch in China. President of IEEE CPMT, Dr. Jie Xue, and Student Program Director, Prof. Kwang-Lung Lin, attended the workshop and gave academic talks. Prof. Jian Cai and Prof. Guisheng Zou



from Tsinghua University also shared their research work with the attendees.

After the workshop, some attendees visited the labs in Institute of Microelectronics and School of Materials Science and Engineering. Opinions on promoting future student activities were exchanged during this event.

Publication News....

2013 CPMT Best Transactions Paper Awards

Each year, the Editors of the IEEE Transactions on Components, Packaging and Manufacturing Technology select the best papers published in the prior year. The papers are selected from among 240 published papers and represent the best, based on criteria including originality, significance, completeness and organization.

The awards were presented at the 64th Electronic Components and Technology Conference (ECTC), May 2013.

Subscribers to this publication can access the papers on-line in IEEE Xplore at: <http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=5503870>

Packaging Technologies Category

“SUPERHYDROPHOBIC NANOCOMPOSITE COATING FOR RELIABILITY IMPROVEMENT OF MICROELECTRONICS” Yan Liu, Ziyin Lin, Kyoungsik Moon, and Ching Ping Wong; Volume 3, Number 7, July 2013

Abstract: We developed superhydrophobic (SH) silica/epoxy nanocomposite coating as an encapsulant to improve device reliability. The SH surface was generated by spin-coating of a silica/epoxy nanocomposite, followed by an oxygen reactive ion etching that exposes silica nanostructures for high surface roughness, and a subsequent hydrophobic treatment for low surface energy. As a result, a water contact angle of 161.2° and a contact angle hysteresis of 1.7° were achieved under an optimized condition. Such SH coating showed good stability under humidity at elevated temperatures and was applied on the triple track resistor (TTR) test coupons. It is found that the self-cleaning encapsulant successfully improves the test device reliability, and the coated TTR showed less degradation of resistance and leakage current in the temperature humidity bias test. In addition, the effect of different types of epoxy resin on reliability improvement was studied.

URL: http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6509424&refinements%3D4268720971%26sortType%3Dasc_p_Sequence%26filter%3DAND%28p_IS_Number%3A6552858%29

Advanced Packaging Category

“EVALUATION OF ANISOTROPIC CONDUCTIVE FILMS BASED ON VERTICAL FIBERS FOR POST-CMOS WAFER-LEVEL PACKAGING” Mamadou Diobet Diop, Member, IEEE, Moufid Radji, Senior Member, IEEE, Anas A. Hamoui, Yves Blaquière, Member, IEEE, and Ricardo Izquierdo, Member, IEEE; Volume 3, Number 4, April 2013

Abstract: In this paper, we investigate the mechanical and electrical properties of an anisotropic conductive film (ACF) on the basis of high-density vertical fibers for a wafer-level packaging (WLP) application. As part of the WaferBoard, a reconfigurable circuit platform for rapid system prototyping, ACF is used as an intermediate film providing compliant and vertical electrical connection between chip contacts and a top surface of an active wafer-size

large-area IC. The chosen ACF is first tested by an indentation technique. The results show that the elastic-plastic deformation mode as well as the Young’s modulus and the hardness depend on the indentation depth. Second, the efficiency of the electrical contact is tested using a uniaxial compression on a stack comprising a dummy ball grid array (BGA) board, an ACF, and a thin Al film. For three bump diameters, as the compression increases, the resistance values decrease before reaching low and stable values. Despite the BGA solder bumps exhibit plastic deformation after compression, no damage is found on the ACF film. These results show that vertical fiber ACFs can be used for nonpermanent bonding in a WLP application. URL: http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6459614&refinements%3D4269304253%26sortType%3Dasc_p_Sequence%26filter%3DAND%28p_IS_Number%3A6490033%29

Components: Characterization and Modeling Category

“POWER MULTIPLEXING FOR THERMAL FIELD MANAGEMENT IN MANY-CORE PROCESSORS” Minki Cho, Chad Kersey, Student Member, IEEE, Man Prakash Gupta, Nikhil Sathe, Satish Kumar, Sudhakar Yalamanchili, Senior Member, IEEE, and Saibal Mukhopadhyay, Senior Member, IEEE; Volume 3, Number 1, January 2013

Abstract: This paper presents the effect of proactive spatio-temporal power multiplexing on the thermal field in many-core processors. Power multiplexing migrates the locations of active cores within a chip after each fixed time interval, referred to as the migration interval, to redistribute the generated heat and thereby reduce the peak temperature and spatial and temporal nonuniformity in the thermal field. Clock and supply gating is used to minimize the power of the deactivated cores. The control of the migration interval is studied considering a 256-core processor at the predictive 16-nm node to evaluate the conflicting impact of the migration interval on thermal field and system performance.

URL: http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6363584&refinements%3D4269325898%26sortType%3Dasc_p_Sequence%26filter%3DAND%28p_IS_Number%3A6403911%29

Electrical Performance of Integrated Systems Category

2013 “OPTIMUM ORDER ESTIMATION OF REDUCED MACROMODELS BASED ON A GEOMETRIC APPROACH FOR PROJECTION-BASED MOR METHODS” Behzad Nouri, Student Member, IEEE, Michel S. Nakhla, Life Fellow, IEEE, and Ramachandra Achar, Fellow, IEEE; Volume 3, Number 7, July 2013

Abstract: Estimation of the optimal order of reduced models in existing macromodeling techniques is a challenging task and is often based on heuristics. In this paper, a new algorithm is described for estimating the minimum acceptable order for reduced models of linear systems to ensure accurate as well as efficient transient behavior. The precise determination of the optimum order for a reduced system is based on evaluation of the number of false nearest neighbors.

URL: http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6517462&refinements%3D4269155255%26sortType%3Dasc_p_Sequence%26filter%3DAND%28p_IS_Number%3A6552858%29

Electronics Manufacturing Category

“3-D NUMERICAL AND EXPERIMENTAL INVESTIGATIONS ON COMPRESSION MOLDING IN MULTICHIP EMBEDDED WAFER LEVEL PACKAGING” Lin Ji, Dexter Velez Sorono, Tai Chong Chai, and Xiaowu Zhang, Senior Member, IEEE; Volume 3, Number 4, April 2013

Abstract: This paper focuses on the 3-D numerical methodology development of wafer level compression molding. With its

successful application in a two-die-package embedded wafer level encapsulation, flow patterns, velocity, and pressure distributions are compared for different die size and die thickness. The computed flow-induced forces indicate which zone has a high risk of die sliding. The simulated molten molding compound flow fronts are compared with actual molding short shot samples. The key advantage of this numerical study is that it helps detect the molding defects quickly and improve moldability problems efficiently, in order to reduce manufacturing cost and design cycle time.

URL: http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6397588&refinements%3D4269054289%26sortType%3Dasc_p_Sequence%26filter%3DAND%28p_IS_Number%3A6490033%29

Conference News....

Reflections from the 64th Electronic Components and Technology Conference

*Submitted by Sam Karikalan,
Assistant Program Chair, IEEE ECTC 2015*

One Thousand One Hundred and Seventy ... that was the number of attendees that took advantage of the 36 oral and 5 interactive presentation sessions, 18 Professional Development Courses (PDCs), and the 5 special, panel, and plenary sessions and seminars at the 64th Electronic Components and Technology Conference (ECTC) held at the Walt Disney World Dolphin Resort, Lake Buena Vista, Florida, USA, from May 27 to May 30, 2014. The number of the Technology Corner Exhibitors crossed the 100 mark for the first time in ECTC history, which may be an indicator of the current health of our industry and a reminder of the important role ECTC plays in bringing the key players together under one roof.

Preparations for ECTC 2014 started almost a year ago, when members of its ten different technical committees critically reviewed the 593 abstracts that were submitted, ultimately leading to 369 presentations (62% acceptance rate). 45% of these abstracts were submitted by universities, 44% by corporations, and 11% by research institutions. The abstracts came from 33 different countries, the highest number in the recent history of ECTC. The US contributed about one-third of these abstracts and it also topped the ranking of countries with the largest number of accepted abstracts. The notable phenomenon in this ranking list was the steady rise

of China from a shared 7th position in 2011 all the way to the 3rd position in 2014.

The session line-ups were finalized by the Technical Program Committee in the planning meeting near Dallas, Texas, USA, on November 6 and 7, 2013. As in the recent past, the Executive Committee had formed a 3D/TSV workgroup, this year under the leadership of Bing Dang from IBM, to jointly evaluate all abstracts on TSV based 2.5D/3D integration. This workgroup came up with 9 sessions, which is interestingly smaller than the 12 sessions in the previous year. The Subcommittee chairs and session chairs did a great job in the follow up with the authors for the manuscripts and presentation material, which enabled a smooth run-up to the conference. Special thanks to Gail Wesling and Paul Wesling for gathering all the paper manuscripts from the authors, getting them through the Crosscheck process, and making them publication ready on time.

The conference began on Tuesday, May 27th, morning with the Professional Development Courses. The number of PDCs this year saw an increase from the usual 16 to 18, due to the concurrent running of the IEEE iTHERM conference at the same location. The number of PDC attendees also increased from 333 last year to 417 this year. Each day's program, starting on this Tuesday all the way through Friday, was preceded by a Speakers Breakfast in which the presenters and session chairs met and took care of the preparatory work for their respective session / courses. The PDC Chair, Kitty Pearsall, provided instructions to the PDC instructors and Proctors at such breakfast on Tuesday, and Alan Huffman, the Program



The 64th ECTC attendance was a record for the Orlando location.



Vice General Chair, Beth Keser of Qualcomm, talking to students at the Student Reception.



Choong-Un Kim of University of Texas receives the 2013 ECTC Best Session Paper Award from the General Chair, Wolfgang Sauter.

Chair, did that for the benefit of the Session chairs and speakers on the other three days.

Concurrent with the PDCs, the conference attendees were treated on Tuesday morning with a Special Session on “Flexible Electronics – Packaging Technology and Application Trends”, chaired by Karlheinz Bock of Fraunhofer EMFT & University of Berlin. The speakers in this session were Vivek Subramanian of UC Berkeley, Jan Vardaman of TechSearch International, Christoph Kutter of Fraunhofer EMFT, Mitsuru Hiroshima of Panasonic, and Nancy Stoffel of GE Global Research. There was another special session in the afternoon that day on “Wireless Power Transfer Systems”, organized by the Electronic Components and RF Subcommittee and co-chaired by Manos Tentzeris of Georgia Institute of Technology and Craig Gaw of Freescale Semiconductor. Invited talks were given by Michael de Rooji of EPC, Lilly Huang of Intel, Yogesh Ramadass of Texas Instruments, Francesco Carobolante of Qualcomm Technologies, Inc., and Robert Andosca of Microgen Systems. With the explosive growth in mobile electronics and with the wearables market ready for take-off, no wonder, this session was well attended.

The ECTC Student Reception was hosted by Valerie Oberson of IBM Corporation on Tuesday evening, at the picturesque setting of the Cabana Deck, in the outdoors portion of the Walt Disney World Dolphin Resort. A steady stream of student attendees came by and talked to professionals from companies such as IBM, Intel, Qualcomm, and Broadcom, on successful career paths and opportunities. This reception was sponsored by IBM Corporation. Right after this, a General Chair’s Reception was given for Speakers and Session Chairs, at the Crescent Terrace. These receptions provided a fantastic start to those four days of intense networking among the conference attendees.

Tuesday’s program ended with the ECTC Panel Session, which had the distinction of being co-chaired by two Presidents of the IEEE CPMT Society. Ricky Lee of Hong Kong University of Science and Technology, who is the immediate past President of the CPMT Society, and Jie Xue of Cisco Systems, Inc., who is its current President, both co-chaired this panel discussion on “Emerging Technologies and Market Trends of Silicon Photonics”. Michael Watts of MIT, Stephane Bernabe of CEA-LETI, John Cunningham of Oracle, Jean Trehwella of IBM, Peter de Dobbelaere of Luxtera,



One of the packed technical sessions of the 64th ECTC.



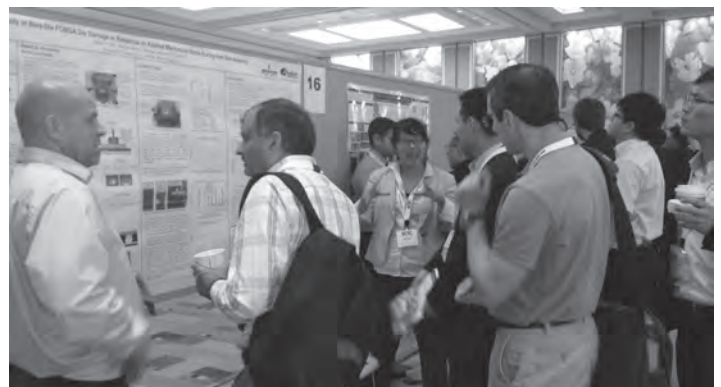
The 64th ECTC saw a record number of 101 exhibitors participate in the Technology Corner Exhibits.

and Madeleine Glick of APIC Corporation were on the panel, discussing this key enabling technology for high speed data transport.

Wednesday marked the start of technical paper presentation sessions, with 6 sessions running in parallel, both in the morning and in the afternoon each day. The smaller number of 3D TSV sessions this year certainly did create some buzz during the conference if 2.5D and 3D integration, as a technology area, was experiencing diminishing interest. Well, it could be that the processes and technologies enabling 2.5D and 3D integration have reached such maturity that there is less material to report at a conference like ECTC that is a forum for new technologies and developments. Non-3D sessions on varied topics such as flip chip technologies and wafer level packaging also found great interest among the attendees, as a large number of them showed up in such sessions. Some of these sessions often had over 200 people listening to the presentations at any given time.

The keynote speech at the ECTC luncheon on Wednesday was given by Peter L. Bocko, Chief Technology Officer of Corning Glass Technologies. While Peter discussed the subject of glass gaining wider acceptance in the packaging industry as an interposer substrate material, he also provided a very good insight into the evolving role of glass in human history and the use of it as a cultural vehicle of artistic expression. Awards for best and outstanding papers from the ECTC 2013, both in oral presentation sessions and interactive sessions, were presented by the ECTC 2014 General Chair, Wolfgang Sauter, at this luncheon. Also presented was the Intel Best Student Paper Award for ECTC 2013.

The Technology Corner Exhibits area was bustling with activity during every break between the presentation sessions. The exhibitors seemed happy with the steady stream of visitors to their booths. Corning's "Welcome to the Glass Age" booth was one of the highlights of the exhibits and showcased the first ever 300 mm glass interposer wafer with pre-fabricated through-glass vias. The exhibitors hosted a reception on Wednesday evening that provided more opportunities for technical and business discussions between them and the other attendees of the conference.



The Interactive Presentations were impressive, as a large number of attendees flocked to the poster boards.

Wednesday evening also saw the ECTC Plenary Session on "Packaging Influence on System Integration and Performance" draw a good number of people. The ECTC Executive Committee's new push into bringing more system performance focus seemed to go well with the conference attendees as well. Nancy Stoffel of GE Global Research chaired this session, with Jon Casey of IBM, Stephane Lessard of Ericsson, Raj Master of Microsoft Corporation, Li Li of Cisco Systems, and Nozad Karim of Amkor Technology as the invited speakers at this session. The mention of the lack of EDA infrastructure for 3D integration by one of the speakers enabled a lively Q&A session with the audience.

The IEEE CPMT Society President, Jie Xue, presided over the luncheon on Thursday and presented the CPMT Society Awards. The 2014 IEEE CPMT Award was presented to Avram Bar-Cohen of University of Maryland, for his contributions through leadership, education, and advocacy to thermal design, modeling, and analysis of electronic components, and for original research on heat transfer and liquid-phase cooling. The Electronics Manufacturing Technology Award was presented to Raj Master of Microsoft Corporation, the Sustained Technical Contribution award to Madhavan Swaminathan of Georgia Institute of Technology, the Exceptional Technical Achievement Award to Pradeep Lall of



The Gala Reception was the time for socializing after a day full of technical brainstorming ... wait ... need to head to the 2014 CPMT Seminar right after this!!!

Auburn University, and the David Feldman Outstanding Contribution Award to Ricky Lee of HKUST. Also presented at this luncheon were the 2014 Outstanding Young Engineer Award and the Regional Contribution Awards.

The ECTC 2015 Program Committee meeting was held on Thursday evening. Henning Braunisch, who will serve as the Program Chair for ECTC 2015, chaired this meeting and presented the statistics of the 64th ECTC and also the timeline for run up to the 65th ECTC that will be held in San Diego next year. The CPMT Representative on the ECTC Executive Committee, C. P. Wong, introduced Sam Karikalan of Broadcom Corporation as the Assistant Program Chair of the 65th ECTC. This meeting also enabled the ECTC technical program Subcommittees to get in touch with potential new members of their committees.

The Gala Reception on Thursday maintained its reputation as the most fabulous gathering of the conference attendees, exhibitors, sponsors, and their guests, jointly celebrating the success

of the 64th ECTC, with great food and socializing. The 2014 CPMT Seminar on “Latest Advances in Organic Interposers” followed the Gala Reception, with Kishio Yokouchi of Fujitsu and Venky Sundaram of Georgia Institute of Technology as its co-chairs. Yasumitsu Orii of IBM – Japan, Suresh Ramalingam of Xilinx, Tadashi Kodaira of Shinko Electric, and Mitsuya Ishida of Kyocera participated in this seminar as invited speakers. With organic interposers promising the traditional supply chain to the integrated device manufacturers (IDMs), there was tremendous interest in this seminar even though it went on past 10:00 PM on that day.

Friday’s Luncheon had the usual fun and excitement, with Tom Reynolds, the ECTC Treasurer, conducting the raffle drawing. The luncheon ball room filled up with the Oohs and Aahs whenever he announced the winning numbers with all that thrill and suspense. The technical sessions continued past 5:00 PM on Friday as well, showing the depth and breadth of the material presented at ECTC as always.

Besides the ECTC paper presentations, the 2015 iNEMI Roadmap North American Workshop was also held concurrently with the conference program on Tuesday and Wednesday. The ITRS Assembly & Packaging Working Session was held all-day on Tuesday. Both these sessions were open to all conference attendees.

Overall, the 64th ECTC was a great success in terms of its record attendance for the Orlando location and the participation from the record number of exhibitors. The ECTC Executive Committee sincerely thanks all the attendees, exhibitors, and conference sponsors for their support. The 65th ECTC will be held at the Sheraton San Diego Hotel & Marina, San Diego, California, USA, May 26–29, 2015. Beth Keser of Qualcomm Technologies, Inc., will be the General Chair of this conference. The Call for Papers and PDC Proposals will be available on www.ectc.net and the abstract submission will close on October 13, 2014. So, get those abstracts ready and submit them as soon as abstract submission opens online.

See you all in San Diego in 2015!



The 64th ECTC Executive Committee.

EPTC 2014

16th Electronics Packaging Technology Conference
3 – 5 December, Marina Bay Sands, Singapore

The 16th Electronics Packaging Technology Conference (EPTC 2014) is an International event organized by the IEEE Reliability/CPMT/ED Singapore Chapter and sponsored by IEEE CPMT Society. EPTC 2014 will feature technical sessions, short courses/forums, an exhibition, social and networking activities. 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.

HIGHLIGHTS

- An evening panel session on 3rd Dec evening that will be chaired by Prof. Dim-Lee Kwong, Executive Director of Institute of Microelectronics, Singapore. Four senior leaders in the semiconductor industry will come together to discuss the topic on “Internet of Things — What is its roles, opportunities and challenges to IC Packaging?”
- Six professional development short courses will be conducted on 3rd Dec 2014 by the technical experts from industry and academia.
- Two keynote addresses on the packaging technology trends & advancement on 4th Dec morning, by both Prof. Dim-Lee Kwong and Mr Subramani Kengeri, Vice President of Advanced Technology Architecture, GLOBALFOUNDRIES.
- Five invited paper speakers from both industry and academia to present their latest research and development activities.
- An exhibition corner from the leading semiconductor companies will be showcasing their latest technologies, services and products on 4th & 5th Dec 2014.

INVITED PAPERS

High Temperature Storage Reliability Investigation of the Al-Cu Wire Bond Interface
Mr. Rainer Pelzer, *Infineon Technologies, Austria*

Ultrahigh Speed Transceiver Package with Stacked Silicon Integration Technology
Dr. Hong Shi, *Xilinx, Inc, USA*

Reliability Physics and Probabilistic Design for Reliability (PDR): Role, Attributes, Challenges
Dr. E.Suhir, *Portland State University, USA*

Innovative Wafer Level Package Manufacturing in Flexible™ Line
Dr. Yoon Seung Wook, *STATS ChipPAC Ltd, Singapore*

Towards Adequate Qualification Testing of Electronic Products: Review and Extension
Dr. Golta Khatibi, *Vienna University of Technology, Austria*

SHORT COURSES

Chip-Package Interaction Challenges & Solutions

3D-Reliability Challenges


Advanced Failure Analysis of New IC Packaging


Probabilistic Design for Reliability (PDR) Concept, and the Roles of Failure Oriented Accelerated Testing (FOAT) and Predictive Modeling (PM)

Analog and Power Electronic Packaging

Advanced N/MEMS Device Packaging and Processes Development

EPTC 2014: website: <http://www.eptc-ieee.net> Email: eptc2014.secretariat@atenga.sg

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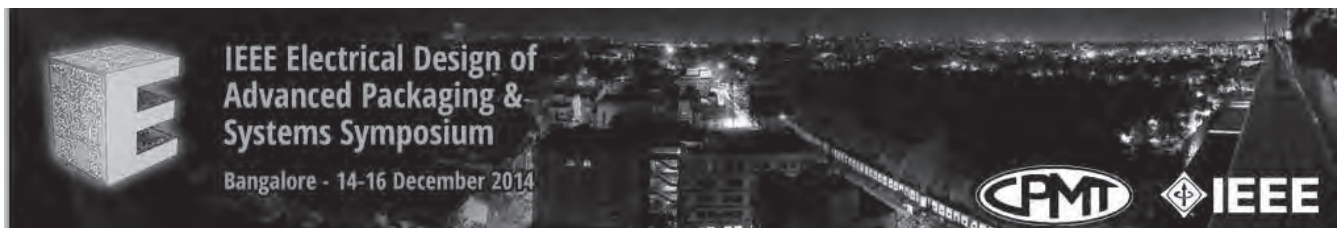


36th International Electronics Manufacturing Technology Conference

11th November - 13th Nov, 2014 at Renaissance Johor Bahru Hotel, Johor, Malaysia

<http://ewh.ieee.org/r10/malaysia/cpmt/>

- 5 technical courses offered by industry leaders on *3D advanced packaging, package reliability and mechanics, advanced failure analysis techniques, embedded technologies, power electronics and high temperature power module design.*
- 9 keynotes covering **latest technology and industry trend in electronics packaging**
- A **panelist forum** titled “**IoT: Roles of Packaging and Industry Trends**”, will touch on packaging cost and its margin in product; 18” wafer investment versus Panel/FOWLP; SiP versus SoC; and low cost innovation.
- Technical paper presentation tracks featuring >90 technical papers & posters from around the industry and academia
- **More than 15** exhibitors from the renowned microelectronics industries and supply chain



<http://www.edaps2014.org/>

The **IEEE Electrical Design of Advanced Packaging and Systems (EDAPS) Symposium** has been one of the main events in the Asia Pacific region with a focus on the electrical design of chip, package and systems for electronics applications. For more than a decade, this symposium has attracted world class researchers from both academia and industry to share their state-of-the-art results in chip, package and printed circuit board design and measurements. The symposium consists of keynote and invited talks from experts, paper presentations, industry exhibition, tutorials and an informal social setting for networking.

Bangalore- the Garden City is the capital of the Indian state of Karnataka. located on the Deccan Plateau in the south-eastern part of Karnataka, Bangalore is a hub for software and electronic design activities and is also known as the Silicon Valley of India.

SPI 2015

CALL FOR PAPERS

19th IEEE Workshop on
Signal and Power Integrity
May 10th – 13th, 2015
Berlin, Germany



Workshop Chairman

Ivan Ndip

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Program Co-Chairs

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Madhavan Swaminathan

Georgia Institute of Technology,
Atlanta (USA)

Information for Authors

Over the past eighteen years, the IEEE Workshop on Signal and Power Integrity has evolved into a forum of exchange on the latest research and developments on innovative schemes for signal and power integrity, and in the field of interconnect modeling, simulation and measurement at chip, board and package levels. The workshop is also meant to bring together developers and researchers from industry and academia in order to encourage cooperation.

In view of last year's success, the Committee is looking forward to the 19th Edition which will convene in Berlin, Germany. The symposium will include both oral and poster sessions. A number of prominent experts will be giving tutorials on areas of emerging interest.

Topics of Interest

- Innovative schemes for SI and PI
- Noise reduction techniques
- High-speed link design and modeling
- Power distribution networks
- Electronic packages and microsystems
- 3D technologies for IC and packages
- RF, microwave, mixed signal packaging
- Nano-interconnects and nano-structures
- Electromagnetic theory and modeling
- Transmission line theory and modeling
- Macro-modeling, reduced order models
- Simulation tools for SI and PI
- Electromagnetic Compatibility
- Design methodology/flow
- Measurements
- Jitter and noise modeling
- Chip-package co-design
- Novel CAD concepts

Important Dates:

Submission of a 2 or 4 Page
Manuscript by
January 31st, 2015

Notification of Acceptance:
February 28th, 2015



For further details, visit our website www.spi2015.org

ASMC

May 3–6, 2015



ASMC 2015 SEMI Advanced Semiconductor Manufacturing Conference ○ Saratoga Springs, New York 

ASMC 2015 CALL FOR PAPERS

Abstract Deadline: October 31, 2014

www.semi.org/asmc2015

For over 25 years, ASMC has been a leading international technical conference for exploring solutions to improve the collective microelectronics manufacturing expertise. Solving the challenges presented by semiconductor manufacturing is an ongoing collaborative effort by users, device makers, equipment and materials suppliers and academia. ASMC provides an unparalleled platform for semiconductor professionals to network and learn the latest information in the practical application of advanced manufacturing strategies and methodologies. The conference is now soliciting abstracts in 18 topic areas from professionals involved in all areas of semiconductor manufacturing. In addition to publication in the conference proceedings, select papers will be invited to participate in a special section of ASMC 2015 to be featured in the *IEEE Transactions on Semiconductor Manufacturing*.

New Topic Category in 2015—The *Fabless Experience* explores challenges faced by fabless semiconductor companies.

AUTHOR INSTRUCTIONS

Original, non-commercial and non-published works are being solicited in 18 specific categories. Papers co-authored between device manufacturers, equipment or materials suppliers, and/or academic institutions that demonstrate innovative, practical solutions for advancing semiconductor manufacturing are highly encouraged. Peer-reviewed papers are selected based on a clear outline of problem, analysis, solution/results and conclusion. Authors are requested to provide an extended abstract of no more than one page of text (max. of 1000 words, MS Word or PDF) with an additional page for supporting data and figures. Authors should summarize the topic and theme in as much detail as allowed by the word count limitation. Include title, author(s), company affiliation(s), contact information, topic and five key words describing the work. Management approval and travel permissions should be secured in advance. Authors who prefer to present in the poster session must indicate this request on the abstract. For templates and further instructions, visit: www.semi.org/asmc2015.

Abstracts must be uploaded to the ASMC Collection Site: <http://semi.omnicms.com/semi/asmc2015/collection.cgi>

IMPORTANT DATES (subject to change)

Abstracts Due:	October 31, 2014	Final Manuscripts Due:	April 20, 2015
Author Notification:	December 19, 2014	Presentations Due:	April 27, 2015
Manuscripts Due:	March 3, 2015	Conference Dates:	May 3-6, 2015

AWARDS

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Dates: October 8–15, 2014

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Location: Taipei, Taiwan

Dates: October 22–24, 2014

Name: 2014 IEEE 20th International Symposium for Design and Technology in Electronic Packaging (SIITME)

Location: Bucharest, Romania

Dates: October 23–26, 2014

Name: 2014 IEEE 23rd Electrical Performance of Electronic Packaging and Systems (EPEPS)

Location: Portland, OR USA

Dates: October 26–29, 2014

Name: 2014 IEEE CPMT Symposium Japan (ICSJ)

Location: Kyoto, Japan

Dates: November 4–6, 2014

Name: 2014 11th China International Forum on Solid State Lighting (SSLCHINA)

Location: Guangzhou, China

Dates: November 6–8, 2014

Name: 2014 IEEE 36th International Electronics Manufacturing Technology Conference (IEMT)

Location: Johor, Malaysia

Dates: November 11–13, 2014

Name: 2014 IEEE 16th Electronics Packaging Technology Conference (EPTC)

Location: Singapore

Dates: December 3–5, 2014

Name: 2014 IEEE Electrical Design of Advanced Packaging & Systems Symposium (EDAPS)

Location: Bangalore, India

Dates: December 14–16, 2014

Name: 2015 26th Annual SEMI Advanced Semiconductor Manufacturing Conference (ASMC)

Location: Saratoga Springs, NY USA

Dates: May 3–6, 2015

Abstract Submission Date: October 31, 2014

Name: 2015 IEEE 19th Workshop on Signal and Power Integrity (SPI)

Location: Berlin, Germany

Dates: May 10–13, 2015

Abstract Submission Date: January 31, 2015

Name: 2015 IEEE 65th Electronic Components and Technology Conference (ECTC)

Location: San Diego, CA USA

Dates: May 26–29, 2015

Abstract Submission Date: October 13, 2014

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