Reflections from the 64th Electronic Components and Technology Conference

Sam Karikalan,
Assistant Program Chair, IEEE ECTC 2015

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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 Trewhella of IBM, Peter de Dobbelaere of Luxtera,

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

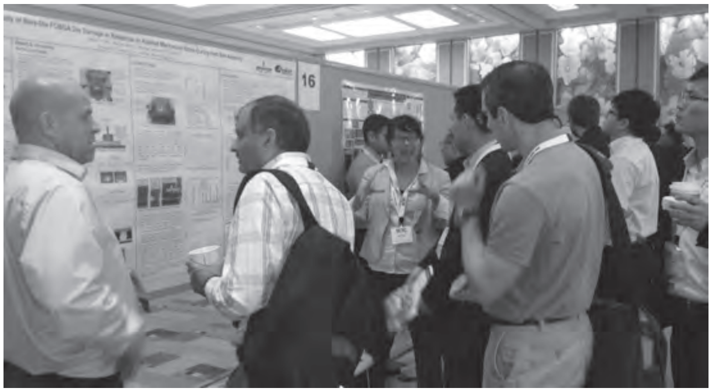
The 64th ECTC saw a record number of 101 exhibitors participate in the Technology Corner Exhibits.

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.