

Summary of 38th IEMT Conference 2018, City of Melaka

(Compiled by Dr. Kim Shyong Siow, Ms. Vaithilingam Paramesvari,
Mr. Jit-Shen Sim, photos by Mr. Chee Yang Ng)

It was poetically fitting that the IEMT Conference of 2018 was held in the Historic City of Melaka, having successfully made its presence felt in the other Historic City of Georgetown in 2016. Having hosted the event in 2010, Melaka embraced its Prodigal Conference's return with open arms, welcoming delegates from around the world once again in what has become the flagship conference of IEEE Santa Clara.

Volunteers from three sectors: local multinational semiconductor companies such as Infineon Technologies, Intel, ON Semiconductor, Carsem, Atotech, Lumileds, NXP, STMicroelectronics and Tactilis, local universities Universiti Kebangsaan Malaysia (UKM), Universiti Teknologi Malaysia (UTM) and Universiti Sains Malaysia (USM) along with the semi-governmental body CREST (Collaborative Research in Engineering, Science & Technology), formed the organizing committee that would bring the conference to fruition. 15 months of hard-work, enabled by multi-party conferencing, sprinkled with a gamut of emotions ranging from anticipation to angst and disappointment to delight, overtly fueled by the desire to bring the best conference to the society (covertly driven by the fear of failure), culminated in the 3-day Conference held from 4th to 6th September 2018 at the Ramada Plaza Hotel in the heart of Melaka city.

The IEMT 2018 Organizing Committee

The conference kicked off with a bang on the 4th of September with 7 short-courses covering the diverse topics of

- **Failure Analysis of Engineering Materials for Application in IoT** (Prof. Dr. Kuan Yew Cheong – USM),
- **Electromigration- The hurdle for Miniaturization of High Power Devices** (Dr. Ning-Cheng Lee – Indium)
- **PDC – Packaging for MEMS and Sensors** (Dr. Theuss Horst – Infineon)
- **Cu Wire Bonding for Automotive Grade Semiconductor Products Packaging** (Mr. Mark Luke Farrugia – NXP)
- **Chip to Package Interactions: Trends, Developments and Integration Challenges** (Dr. Srinivasa Yeduru – Infineon)

- **Wire Bond Advancement: Smart Equipment for Smart Manufacturing** (Mr. Nelson Wong – Kulicke & Soffa)
- **Breakthrough in Semiconductor Packaging Problem Solving Through Quality Function and Statistical Methodologies** (Mr. LF Chan – LF Training)

The short-course topics were well-received, garnering 138 participants who were impressed by the depth of knowledge as well as the breadth of coverage of the short-courses.



Dr. YY Tan (Left) and Mr. SF Wong (2nd from Right) with the Short-Course Speakers

The second day of the conference saw a Grand Ballroom packed with participants hungry for knowledge and information to be shared by the impressive line-up of speakers. After the welcome speeches by the IEMT2018 General Chair, Dr. Yik-Yee Tan and the IEEE EPS Malaysia Chapter Chair, Mr. Shaw Fong Wong, the evergreen Dr. Bill Chen took to the stage with an engaging speech that brought us back through memory lane, way back to before 2017, when the EPS – Electronics Packaging Society was still known by the tongue-numbing acronym of CPMT – Components, Packaging and Manufacturing Technologies.



Packed Grand Ballroom for the Opening on 2nd Day

Emcees Dr. Yew Hoong Wong, Bernard Lim and Jit-Shen Sim moderated the events in the main ballroom. The conference had the good fortune of witnessing 7 keynote speeches, each

presented by renowned experts in their respective areas. The first two keynote addresses were delivered by Mr. Qin Deng (IBM) *The AI Driven Manufacturing Transformation is Imminent* and Ms. Claire Troadec (Yole Developpement) *Automotive Industry Transformation: EV/HEV impact on Power Modules, Design Changes and Packaging innovations!* Both keynote addresses showed key trends, challenges and opportunities for the semiconductor industry, keeping the audience engaged throughout the presentations. In the afternoon session, the 3rd Keynote address by Dr. Bill Chen (ASE) *Heterogeneous Integration through SiP from Design to Manufacturing* kept the audience equally engaged and this was no mean feat, considering that the keynote was given at 3pm, when bellies were full from the sumptuous lunch provided by the host hotel. The next three keynote addresses were presented in quick succession on the 3rd morning of the conference: Dr. NorAzmi Alias (CREST) *Opportunities and Challenges for Semiconductor and Optoelectronic Packages in the Emerging Markets of 4th Industrial Revolution (4IR)* focused on Digital Healthcare trends, Dr. Gaurang Choksi (Intel) *Enabling Heterogeneous Packaging: A Perspective on Challenges & Opportunities* focused on the multiple challenges in Heterogeneous Integration and Dr. Qian Wang (Tsinghua University) *Growth of China's Semiconductor Advanced Packaging – A Win-Win in a World-Wide Context* opened our eyes towards the packaging industry in China. Rounding off the keynote addresses, the final keynote was presented in the evening by Mr. Alexander Mueller (Infineon) *Packaging for Automotive: Challenges and Solutions*, giving us a glimpse of the challenges facing the automotive packaging world.



Keynote Speaker Dr. Bill Chen

Adding more spice to the program, a panel discussion was introduced in this Conference, right after lunch on the second day. Moderated by Mr. Jit-Shen Sim (Infineon), the panelists Ms. Claire Troadec (Yole Developpement), Mr. Laurent Herard (STMicroelectronics) and Mr. Alexander Mueller (Infineon) shared their perspectives on the megatrends of New Mobility Services, Electrification, Digitization and Autonomous Driving in the automotive industry. Packaging paradigm shifts, challenges and related strategies were also put on the table for discussions. Overall, the one-hour was well spent in a balance of technical facts, opinions and sharing of knowledge even from the audience. On top of the already excellent program

line-up, kudos to the Program team of Swee Har, Eng Hoo and Bernard for this additional gem.



Panel Discussion on the Automotive Industry (Moderator Jit-Shen Sim, Conference Advisor Chee Hiong Chew, Mr. Alexander Mueller, Ms. Claire Troadec, Mr. Laurent Herard)

For those hankering for some statistics about the conference, here are some numbers to sate your appetite:

- 490 total participants
- 138 Short-Course attendees
- 62 Oral Papers
- 22 table exhibits
- 17 invited Papers
- 17 poster papers
- 17 International Advisory Board (IAB) members
- 7 Short courses
- 7 Keynote addresses

The conference accomplished several record-breaking feats, accumulating the highest sponsorship with 22 display booths – congratulations to the Sponsor & Exhibition team of Chan Wah Chai, Lily Khor and Eng-Lim. The former achievement surely brought a smile of relief to the treasurers, Shutesh and Kai Chat. IEMT2018 also achieved the highest number of participants at 490. This feat would not have been possible without the tireless efforts by the Publicity and Publication team of Chee Yang, Kim Shyong and Yew Hoong, aided of course by the International Advisory Board consisting of 17 members from across the globe. Coupled with the timely selection of the 7 short-course workshops, this was also a job well done by the International Liaison team of Poh Leng, Mun Leong and Jit-Shen. The Technical team of Prof. Nasir, Prof. Cheong, Choong Kooi, Hoo Kooi and Zal should also be lauded for wading through >100 abstract submissions to arrive at a final 62 oral paper and 17 poster paper presentations. These were presented à la quad-core during the conference: in four separate break-out rooms while the posters were presented along the main walkway, visible to all conference participants.

Throughout the conference, the secretariat team, led by Param, did a fantastic job of maintaining order, accommodating changes and last-minute registrations. They did such a good job that we barely noticed them because no

news is good news. Kudos to Madam Secretary Param and her team!!!

But what is a conference in a much-touted historic city if there was no chance to soak in the sights, sounds and smell of the host city? With this rhetorical question in mind, the Logistics and Social Tour team of Nor Azman, Kenneth and MdNasir Mislán treated conference participants to a pre-Gala Dinner excursion through the city of Melaka in an idyllic boat-ride, coasting along the Sungai Melaka, river breeze gently caressing faces and billowing hair as we welcomed dusk in this historic city. After disembarking from the boats, participants had the opportunity to hitch a ride in colorful trishaws as the sun set further, casting an ethereal glow as we made our way back to the hotel for the Gala Dinner.



Cruise on the Melaka River and Beca (Trishaw) Ride

The Gala Dinner got off to an explosive start with delectable dances that showcased the variety of races in Malaysia. Mr. Chee Hong Lee, President and Managing Director of Infineon Malaysia, set the ball rolling with his Opening Address, cementing his commitment to the conference (Infineon had sent about 100 participants to the conference). The scrumptious servings of local cuisine, the cheerful conversations among table mates and the melodious music from the live band all conspired to create the perfect ambience for a gala dinner, and not even a technical talk during the banquet could ruin the atmosphere. In fact, Dr. Ricky Lee's SMART Talk was so inspiring it got a rapturous round of applause from the still sober audience. Of course it helped that Dr. Lee concluded his talk with the assertion that "the louder you clap, the smarter you are". Throughout the dinner, the lovely emcee, Poh Leng, kept the audience informed and inspired.



Mr. Chee Hong Lee (President and Managing Director of Infineon Melaka)

Engineers are nurtured to take pride in sharing knowledge but it is human nature to compete among ourselves. No conference would be complete without some friendly competition. Judged by Prof. Nasir, Prof. Cheong, Dr. Poh-Leng Eu, Dr. Shutesh Krishnan and Mr. Hoo Kooi Lim (now you know who to thank/blame), the Best Poster was awarded to Dr. Lai Chun Yung (Infineon) for his paper entitled *Investigation of the Solder Void Formation Mechanism After High Temperature Stress Process by 3D CT Scan and EDX Analysis*. The Best Student Paper went to Yan-Cheng Liu, Hsien-Chie Cheng and Zong-Da Wu of Feng Chia University, Taiwan with the paper entitled *Evaluation of Out-of-plane Deformation of Fan-out Wafer-level Packaging* while the Best Industry Paper was awarded to Yung Hsiang Lee, Wei Keat Loh and Ian Chin of Intel with *Electronic Packaging Moisture Interaction Study*.



All good things have an end (except the sausage which has two) and so it was that the Conference ended after all lucky draw prizes were distributed. Not even the World Cup witnessed so many heartaches in this final session as many of lucky draw winners turned up unlucky, having left the conference early (you know who you are) thus disqualifying themselves from the prizes. After all the laughter and claps, it was time to bring down the curtains on IEMT2018, dubbed the best conference in Melaka, JB and some say Batam. Alas, the bitter-sweet moment of friends and acquaintances having to part ways after a successful conference came to pass but then again, there is always the next conference in two years' time. See you in Putrajaya, Malaysia in 2020!

