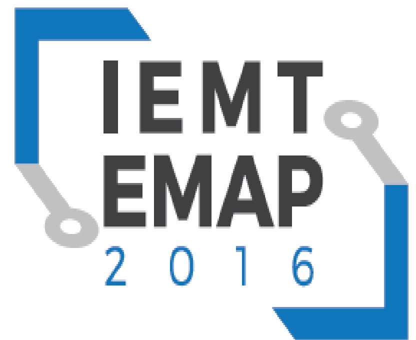

September 20-22nd, 2016

G Hotel • Penang, Malaysia

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MALAYSIA
CLAIMABLE

Overview of IEMT-EMAP Conference

<u>IEMT</u>: International Electronics Manufacturing Technology
(2006, 2008, 2010, 2012, 2014, 2016 (In Progress))
<u>EMAP</u>: Electronics Materials and Packaging Conference
(2004, 2009, 2016 (In Progress))

IEMT is an international event organized by the IEEE CPMT Malaysia Chapter (rotation by cities) with co-sponsorship from CPMT society of IEEE, Santa Clara Valley Chapter.

- A major forum, providing opportunities to network and meet leading experts, in addition to exchange of up-to-date knowledge in the field.
- Since 1990's, IEMT has gained reputation as a premier electronic materials and manufacturing technology conference and well attended by experts all over the world.
- CPMT Malaysia took up the full conference ownership by Y2006.
- This year, we are organizing a ***joint conference between IEMT-EMAP2016***, to be held at G-Hotel, Penang, Malaysia.

Organizing Team

IEMT-EMAP 2016

The International Electronics Manufacturing Technology (IEMT) Conference is the premier IEEE event devoted to the manufacture 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. The 37th International Electronics Manufacturing Technology (IEMT) - 18th Electronics Materials & Packaging (EMAP) Conference IEMT 2016 is being organized by the IEEE CPMT Malaysia Chapter with co-sponsorship from IEEE Santa Clara Valley Chapter.

- ☐ 5 Short Courses
- ☐ 8 Keynote Speakers
- ☐ 16 Invited Papers
- ☐ Oral Papers
- ☐ Poster Papers
- ☐ Exhibition Booths

2 SPECIAL SESSIONS

- ☐ CREST Session
- ☐ Akrometrix Session

Conference web link
http://ewh.ieee.org/r10/malaysia/cpmt/Home/iemt/2016/iemt2016.html

Download the Apps from Apple Apps Store and Google Apps Store

Secretariat

Hafiza Hamid
iemt-emap2016@crest.my
Collaborative Research in Engineering, Science & Technology
sains@ usm
Block C, Ground Floor
No. 10 Persiaran Bukit Jambul
11900 Bayan Lepas
Pulau Pinang, Malaysia
Tel: +604 652 0088

Online Registration Link:

http://goo.gl/forms/ZuVlzgewfKG8ZHyW2

Short Courses

Klaus Mueller
Infineon Technologies. Germany

Trends in Material Development – upcoming requirements concerning reliability
A comprehensive overview about semiconductor technology trends and their impact on the development of packaging materials. The course will show the upcoming challenges of selecting materials with the focus on enhanced performance and greater functionality. The future materials must fulfill superior characteristics (e.g., conductivity, insulating behaviour, high temperature and voltage stability) under condition of proper cost management.

Ning-Cheng Lee
Indium Corporation, USA

Achieving High Reliability for Lead-Free Solder Joints
This course covers detailed material considerations required for achieving high reliability for lead-free solder joints. Electro migration, corrosion, and tin whisker will also be discussed. The emphasis of this course is placed on the understanding of how the various factors contribute to the failure modes, and how to select proper solder alloys and surface finishes for achieving high reliability.

Charlie Lu
Taiwan Printed Circuit Association (TPCA), Taiwan R.O.C

Chip-to-Package Interconnect Technology: Fundamentals and Future Trend
A review most of the conventional and newly developed chip-to-package interconnect technologies, including wire bonding, flip chip bonding, tape automatic bonding, via-interconnect, and surface activated bonding, etc. The characteristics, limitation, application, and future trend of each technology will be analysed by the nature of the process technique and material selection. This course is aimed to provide the forward-looking insight to the chip-to-package interconnect technology.

Christopher Breach
ProMat Consultants, Singapore

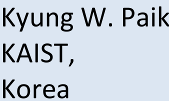
Copper Ball Bonding Materials, Intermetallics & Reliability
Attendees of this short course will learn about copper wires and wire properties, the materials science that underlies the bonding process, intermetallics and the kinetics of intermetallic growth and failures related to wires and intermetallic degradation during reliability tests. This course is suitable for quality & reliability engineers and scientists, packaging development engineers and technicians and managers.

Seung Wook Yoon
STATS ChipPAC, JCET Group, Singapore

Fan-out Wafer Level Packaging (FO-WLP) – Innovative and Novel Solutions of Advanced Packaging .
This course will give an overview and technical deep-drive of the FO-WLP technology. The market drivers, applications, cost benefits, industry readiness and challenges facing industry-wide adoption will be discussed. Typical FO-WLP configurations will be reviewed in terms of their construction, manufacturing processes and electrical / thermal / mechanical performance, together with package and board level reliability. Since the technology marks the convergence of fab, assembly, and test, the discussion will address questions on business model and technology challenges.

Eric WP Chan
Intel Corporation,
Malaysia

Development in Internet of Things (IoT) and Opportunities for "Packaging the IoT"



Kyung W. Paik
KAIST,
Korea

Anisotropic Conductive Films (ACFs) Interconnection Technology for Wearable

Rolf Aschenbrenner
Fraunhofer IZM,
German

Panel Level Embedding for Power and Sensor Applications

Andy C Mackie
Indium Corporation,
USA

The Future of Power Device Packaging: Materials and Assembly Processes

Keynote Paper

Industry leading speakers are invited to deliver their sharing of the latest industry trends and opportunities

David Lacey
Osram Opto
Semiconductors,
Malaysia

Material challenges for optoelectronic packages in lighting applications.

Ricky Lee
HKUST, Hong Kong

Packaging and Integration Technologies for the Era of Internet of Things

Pierric Gueguen
Yole Development,
France

Technological challenges and market trends for power packaging

William T. Chen
ASE Group, USA

Heterogeneous Integration Roadmap to the Brave New Interconnected World

Kishio Yokouchi

FUJITSU Interconnect Technologies, Lit.

Japan

Board Interconnect Technologies for Supercomputer "K" and the Next Generation

Hsiang-Chen Hsu

I-Shou University

Taiwan R.O.C

A Study on Package-on-Package with Through Molding Vias Using Laser Technology

Ming-Yi Tsai

Chang Gung University

Taiwan

Keep-out Zone and Mechanical Strength of Cu-TSV Chips Used in 3DIC

Seung Wook Yoon

STATS ChipPAC, JCET Group

Singapore

eWLB/FO-WLP : Novel Fan-Out Interconnect Solution

Invited Paper

Invited Distinguished Speakers' Papers

Rajkumar a/l Durairaj,

Universiti Tunku Abdul Rahman Malaysia

Investigation on the synthesis and conductivity mechanism of Graphene based Isotropic Conductive Adhesives

Siow Kim Shyong

Universiti Kebangsaan Malaysia

Navigating the patent minefield of sintered silver (Ag) as a die-attach material in microelectronic packages.

Mariatti Jaafar

Universiti Sains Malaysia

Application of Nanofillers in Polymer Composites for Electronic Packaging

Mohd Nasir TAMIN,

Universiti Teknologi Malaysia

A Unified Framework for Solder Joint Reliability Assessment based on Damage Mechanics

Mohd Zulkifly Abdullah,

Universiti Sains Malaysia

Numerical prediction of resistor self-alignment during reflow soldering process

Ranjan Rajoo

Global Foundries Singapore

Solder Interconnection: Evolution & Revolution

A. S. M. A. Haseeb

University of Malaya

Nano meter Sized Metallic Additions to Lead-Free Interconnects: Effects on Microstructure and Properties

Shi-Wei Ricky Lee

Hong Kong University of Science and Technology

Precise Junction Temperature Mapping for Flip-chip Light Emitting Diodes by Infrared Thermography

Invited Paper

Invited Distinguish Speaker's Papers

Charlie Lu

TPCA

Taiwan

Review on the Newly Developed Fan-out Packages from Innovative Viewpoint

Sung Yi

Portland State University

USA

Thin Packaging Technology

CP Hung

ASE Group

Taiwan R.O.C

New Era SiP Technologies with 3D Interconnection

Lim Sze Pei

Indium Corporation

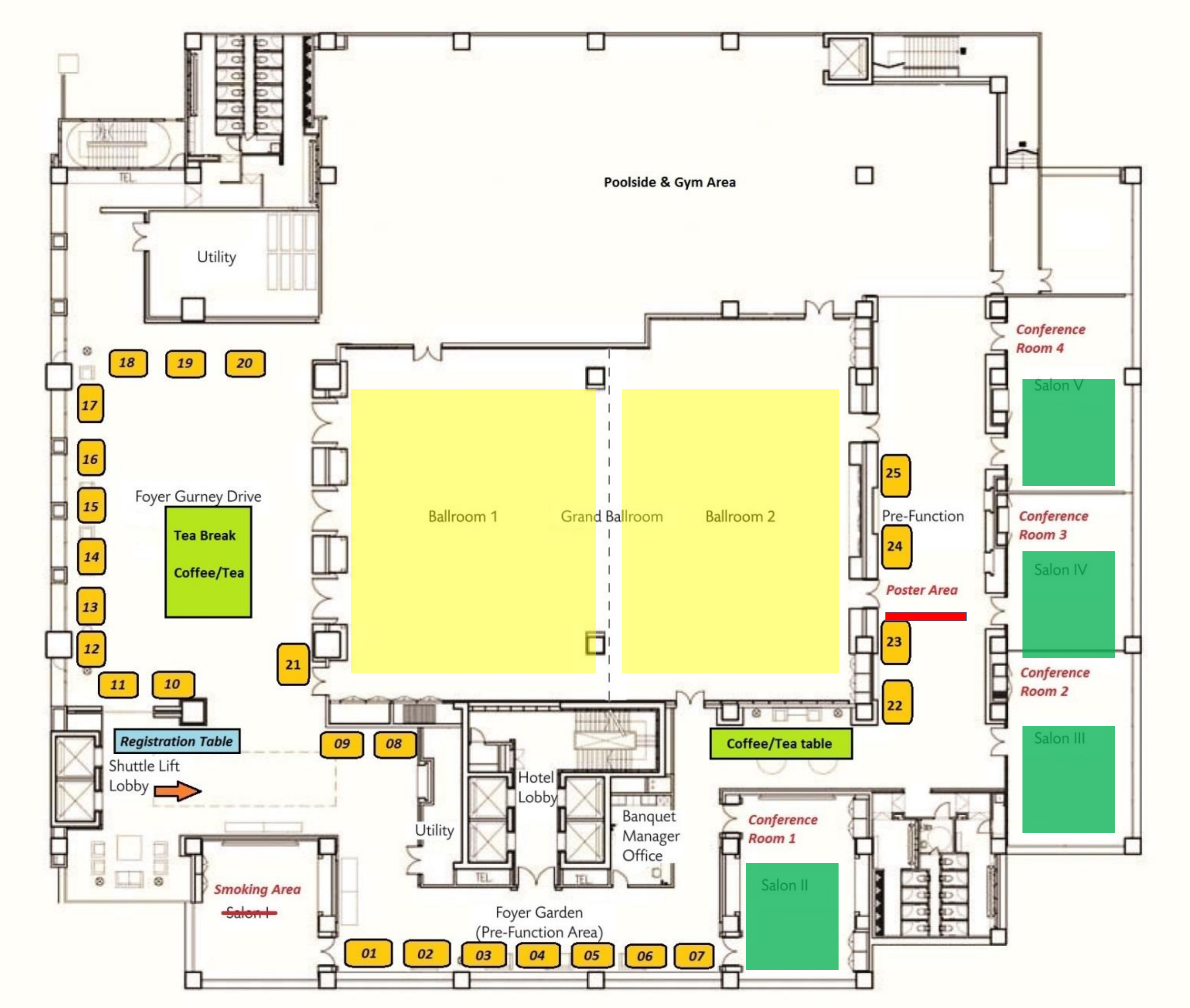
Malaysia

No Clean Material for Advanced Packaging Assembly

Conference Hotel Layout

G Hotel Penang

Level 3



Functions	Location	Hotel Area
Registration		Reception Area
Opening, Closing, Keynote Sharing		Ballroom 1,2
Oral Presentation		Conference Room 1,2,3,4
Poster Presentation		Pre-Function
Exhibitor		Foyer, Pre-function

IEEE COMPONENT, PACKAGING AND MANUFACTURING TECHNOLOGY SOCIETY

REPLY FORM FOR SPONSORSHIP & EXHIBITION IEMT-EMAP 2016

Organization :	
Address :	
Telephone :	Facsimile :
Person In Charge :	Signature :
Email Address :	

"I / We would like to inform the organizing committee of IEMT-EMAP 2016 that our company/ organization has agreed to participate in IEMT-EMAP 2016 for the item(s) ticked below:

Type	Cost	Tick your selection	Logo on banner	Logo on the conference bag	Logo on program book	Logo on sponsored item	Exhibition Booth	Details in Softcopy Proceeding (2)	Remarks
Platinum Sponsors	RM15,000		Yes	Yes	Yes		Yes	Yes	3 seats for short course, conference & dinner
Gold Sponsors	RM12,000		Yes		Yes		Yes	Yes	3 seats for conference & dinner
Silver Sponsors	RM8,000		Yes		Yes			Yes	2 seats for conference & dinner
Bronze Sponsors	RM5,000				Yes			Yes	1 seat for conference & dinner
Sponsors						Yes(1)		Yes	eg. Thumbdrive, Pens etc
Exhibitors	RM6,000						Yes	Yes	~ 1.5x6 feet bench & 2 seats for lunch
Conference Dinner : Sponsor 1 Table Seats	RM1,500								Sponsor may invite their guests to attend the dinner. Table with 10 seats

(1) Sponsor's logo

(2) Sponsor's logo and address

Note: Availability of space for exhibition is based on first come first serve basis. Price quoted is in Malaysia Ringgit. Exhibition will be for 2 days.

Enclosed herewith a Crossed Cheque / Bank Draft / Money Order / Postal Order or Governement Local Order No. ____________________________ being a full payment of RM__________________________ issued in favor of "IEEE CPMT MALAYSIA".

Signature:___________________________ Date: ______________________

(Mr/Mrs/Ms/Dr/Ir)

Sponsorship & Exhibition Enquiry:

Email : lilykhor@carsem.com

Email : kooi.choon.ooi@philips.com

Email : cwchai@unisemgroup.com

Institute of Electrical and Electronics Engineers

37th International Electronics Manufacturing Technology/18th Electronics Materials & Packaging Conference (IEMT-EMAP 2016)
G Hotel, Penang, Malaysia. 20th – 22nd September, 2016

IEEE Component, Packaging and Manufacturing Technology Society

CONFERENCE REGISTRATION FORM

A. Participant's Information (use additional sheet if needed).

Name	Designation	Preferred Name on Badge	IEEE Membership No.
1. ------------------------------------	-----------------------------	----------------------------------	------------------------------
2. ------------------------------------	-----------------------------	----------------------------------	------------------------------

B. Contact Information

Organization : _______________________ Dept : ______________ Tel : _______________ Fax : _______________
Mailing Address : ____
____

City/State : ______________ Zip : _____________ Country : ______________ Email : _______________________

REGISTRATION FEE DETAILS

PART I : CONFERENCE REGISTRATION (Please tick (√) on the appropriate box/boxes accordingly).

CONFERENCE ON 21ST & 22ND SEPTEMBER 2016 (2 FULL DAYS). EARLY BIRD REGISTRATION FEE (BEFORE 15TH AUGUST 2016)			
CATEGORIES	CONFERENCE FEE	SHORT COURSE FEE	CONFERENCE + SHORT COURSE
[ ] SPEAKERS	[ ] RM650	[ ] RM600	[ ] RM1200
[ ] IEEE MEMBER	[ ] RM750	[ ] RM600	[ ] RM1250
[ ] NON IEEE MEMBER	[ ] RM850	[ ] RM700	[ ] RM1500
[ ] FULL TIME STUDENTS	[ ] RM600	[ ] RM500	[ ] RM1000
LATE FEE CHARGE – A late fee charge of RM100 will be imposed to all registrations that are submitted after 15th August 2016			
Note: 1 Ringgit (MYR) is approximately US$0.23. All fees are inclusive of 6% GST.		TOTAL AMOUNT	

- **Conference** registration fee on **21st and 22nd September 2016** includes daily luncheons, 2 coffee breaks, program book and softcopy of proceedings.
- **Short Course** registration fee on **20th September 2016** includes one luncheon, 2 coffee breaks and a set of course notes.

PART II : SHORT COURSE REGISTRATION (Please tick (√) on the respective box accordingly)

SHORT COURSE ON 20ST SEPTEMBER 2016 (1 FULL DAY)

MORNING SHORT COURSE (8:15 – 12:15 PM) | AFTERNOON SHORT COURSE (1:30 – 5:30 PM)

[ ] **Short Course I (Full Day)**
Topic : **Chip-to-Package Interconnect Technology: Fundamentals and Future Trend**
Instructor : Charlie Lu
Taiwan Printed Circuit Association (TPCA), TAIWAN

[ ] **Short Course II (Full Day)**
Topic : **Fanout Wafer Level Packaging (FO-WLP) – Innovative and Novel Solutions of Advanced Packaging**
Instructor : Dr. Yoon Seung Wook
STATSChipPAC-JCET, SINGAPORE

[ ] **Short Course III (Full Day)**
Topic : **Copper Ball Bonding Materials, Intermetallic & Reliability**
Instructor : Dr. Christopher Breach
ProMat Consultants, SINGAPORE

[ ] **Short Course IV-A (Half Day)**
Topic : **Trends in Material Development – Upcoming Requirements Concerning Reliability and Applications**
Instructor : Dr. Klaus Mueller
Infineon Technologies, GERMANY

[ ] **Short Course IV-B (Half Day)**
Topic : **Achieving High Reliability for Lead-Free Solder Joints**
Instructor : Dr. Ning Cheng Lee
Indium Corporation, USA

PAYMENT DETAILS (IN MALAYSIAN RINGGIT)

Registration is limited so please register early. To register, fill out registration form, and send along with check or bank draft payment. Please do not mail if previously faxed. All payment for the registration is to be made payable in Ringgit Malaysia to : **IEEE CPMT MALAYSIA.**

[ ] **Cheque/Bank Draft** Cheque/Bank Draft No : ________________ Bank Name : ____________________
(Only cheque or bank draft drawn in Malaysian bank are acceptable)

[ ] **Credit Card Payment** Please pay online.

Mail or fax registration form to :
IEMT-EMAP 2016 Secretariat, (Attention : Hafiza Hamid)
CREST, Sains@USM, Block C, Ground Floor, No. 10, Persiaran Bukit Jambul,
11900 Bayan Lepas, Penang, MALAYSIA
Tel : +6-04-652-0088 Fax : +6-04-652-0099
Email : iemt-emap2016@crest.my Conference website : http://ewh.ieee.org/r10/malaysia/cpmt/Home/iemt/2016/iemt2016.html

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www.ghote.com.my

Accommodation And Conference Venue

Ultra chic with stunning contemporary interiors, G Hotel Gurney houses 312 rooms and is located in a prominent location next to upscale shopping malls and renowned hawker eateries nearby. The hotel is the perfect point of departure for discovering Penang wonders like tourist attractions, UNESCO world heritage sites and beaches. G Hotel Gurney aims to deliver a refreshing guest experience through its modern facilities & impeccable service standards.

FACILITIES

SURF @ G | GYMNASIUM | INFINITY POOL | DANAI SPA | BAPTAIN HAIR SALON

RESTAURANTS AND BARS

TASTE CAFE Serving an array of International buffet spread and local savouries whilst offering guest a relaxing ambience with an indoor & outdoor alfresco area.
The hotel offers several bars including G lounge, Tree Bar and G Pool Bar

ROOMS

Featuring beautiful views of the coast, the air-conditioned rooms at G Hotel are decorated in soothing neutral colours. Each is equipped with a satellite TV, free minibar and tea/coffee making facilities.

PROMINENT LOCATION ON THE BUSTLING PERSIARAN GURNEY

IEMT - EMAP 2016 PROGRAM OVERVIEW : 20th - 22nd SEPT 2016

SHORT COURSES : 20th SEPTEMBER 2016, TUESDAY				
0800 - 0830	Registration at Secretariat			
	ROOM : SALON II	ROOM : SALON III	ROOM : SALON IV	ROOM : SALON V
0830 - 1730 (Inclusive of lunch and cofee breaks)	FULL DAY	FULL DAY	FULL DAY	MORNING SESSION
	Chip-to-Package Interconnect Technology: Fundamentals and Future Trend *Charlie Lu* *Taiwan Printed Circuit Association (TPCA), TAIWAN*	**Fanout Wafer Level Packaging (FO-WLP) – Innovative and Novel Solutions of Advanced Packaging** *Seung Wook Yoon* *STATSChipPAC-JCET, SINGAPORE*	**Copper Ball Bonding Materials, Intermetallic & Reliability** *Christopher Breach* *ProMat Consultants, SINGAPORE*	**Trends in Material Development – Upcoming Requirements Concerning Reliability and Applications** *Klaus Mueller* *Infineon Technologies, GERMANY*
				AFTERNOON SESSION
				Achieving High Reliability for Lead-Free Solder Joints *Ning Cheng Lee* *Indium Corporation, USA*

EXHIBITION - 21st SEPTEMBER 2016, WEDNESDAY	
0930 - 1700	Tabletop Display Outside of Conference Room

CONFERENCE SESSIONS (DAY 1) : 21st SEPTEMBER 2016, WEDNESDAY				
0730 - 1730	Registration at Secretariat			
0730 - 0815	Opening Ceremony & Keynote Addresses at Grand Ballroom			
	Guests and Participants Arrival Into Grand Ballroom.			
0830 - 0915	Welcome Speech by Tze Yang Hin, IEMT-EMAP 2016 General Chair Opening Speech by Wong Shaw Fong, Chairman, IEEE-CPMT Malaysia Chapter Conference Opening Address by the President, IEEE-CPMT Society, Represented by William Chen *Heterogeneous Integration : Roadmap to the Brave New Interconnected World*			
0915 - 1000	***Keynote Address I: Development in Internet of Things (IoT) and Opportunities for "Packaging the IoT"*** Eric Chan, *Intel Corporation, MALAYSIA*			
1000 - 1045	**Keynote Address II: Panel Level Embedding For Power and Sensor Applications** Rolf Aschenbrenner, *Fraunhofer Institute for Reliability and Microintegration Berlin (IZM), GERMANY*			
1045 - 1110	Coffee Breaks/Poster Session			
	ROOM : SALON II	ROOM : SALON III	ROOM : SALON IV	ROOM : SALON V
1110 - 1250	SESSION A1 ADVANCED PACKAGING I	SESSION B1 PROCESS	SESSION C1 CREST SESSION	SESSION D1 AKROMETRIX SESSION
1250 - 1400	Buffet Lunch			
1400 - 1445	***Keynote Address III: Anisotropic Conductive Films (ACFs) Interconnection Technology for Wearable Electronics Applications*** KW Paik, *KAIST, KOREA*			
1445 - 1530	***Keynote Address IV: The Future of Power Device Packaging: Materials and Assembly Processes*** Andy MacKie, *Indium Corporation, USA*			
1530 - 1600	Coffee Break/Poster Session			
	ROOM : SALON II	ROOM : SALON III	ROOM : SALON IV	ROOM : SALON V
1600 - 1720	SESSION A2 ADVANCED PACKAGING II	SESSION B2 SOLDER MATERIALS I	SESSION C2 THERMO-MECHANICAL	SESSION D2 DESIGN
1900 - 2300	DINNER/CULTURAL SHOW			
	DINNER AND CULTURAL PERFORMANCE BY MALAYSIAN TOURISM			
	(Dinner/Cultural Show in the Grand Ballroom)			

EXHIBITION - 22nd SEPTEMBER 2016, THURSDAY	
0930 - 1700	Tabletop Display Outside of Conference Room

CONFERENCE SESSIONS (DAY 2) : 22nd SEPTEMBER 2016, THURSDAY				
0730 - 0830	Registration at Secretariat			
0830 - 0915	***Keynote Address V: Material Challenges for Optoelectronic Packages in Lighting Applications*** David Lacey, *Osram Opto Semiconductors, MALAYSIA*			
0915 - 1000	***Keynote Address VI: Technological Challenges and Market Trends For Power Packaging*** Pierric Gueguen, *Yole Developpment, FRANCE*			
1000 - 1030	Coffee Breaks/Poster Session			
	ROOM : SALON II	ROOM : SALON III	ROOM : SALON IV	ROOM : SALON V
1030 - 1230	SESSION A3 SUBSTRATE TECHNOLOGY	SESSION B3 WIREBOND	SESSION C3 RELIABILITY I	SESSION D3 MATERIALS
1230 - 1400	Buffet Lunch			
	ROOM : SALON II	ROOM : SALON III	ROOM : SALON IV	ROOM : SALON V
1400 - 1600	SESSION A4 SOLDER MATERIALS II	SESSION B4 MATERIALS & PROCESSING	SESSION C4 RELIABILITY II	SESSION D4 TEST & METHODOLOGY
1600 - 1620	Coffee Break/Poster Session			
1620 - 1705	***Conference Closing Address Keynote Address VII: Packaging and Integration Technologies for the Era of Internet of Things*** Ricky Lee, *Hong Kong University of Science and Technology, HONG KONG*			
AWARD PRESENTATION AND CENFERENCE CLOSING CEREMONY				