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PROGRAM & PROCEEDING

IEMT 2012

35th IEEE CPMT

International Electronics

Manufacturing Technology Conference

6th - 8th November, 2012

Kinta Riverfront Hotel, Ipoh, Perak, Malaysia

IEMT 2012 PROGRAM OVERVIEW : 6 NOV - 8 NOV 2012

SHORT COURSES : 6th NOVEMBER 2012, TUESDAY

Time				
0800 - 0830	Registration at Secretariat (Room TBD)			
0830 - 1730 (Inclusive of lunch and cofee breaks)	ROOM A (FULL DAY)	ROOM B (FULL DAY)	Morning Session ROOM C	Afternoon Session
	Analog Electronics Testing and Product Engineering	Achieving I Reliability For Lead-Free Solder Joint - Material Consideration.	Progressive Advances in High Density Substrates & Packaging to Deliver More than Moore	Advanced Failure Analysis Of Semiconductor Packaging
Instructor(s)	Prof. Richard Gale, Ph. D., P. E. Texas Tech University, USA	Dr. Ning-Cheng Lee, Indium Corporation, USA	Dr. Andy Tseng, Advanced Semiconductor Engineering, USA	Mr. Xue Ming, Infineon, SINGAPORE

EXHIBITION - 7th NOVEMBER 2012, WEDNESDAY

Time	
0930 - 1700	Tabletop display outside of Conference Room

CONFERENCE SESSIONS (DAY 1) : 7th NOVEMBER 2012, WEDNESDAY

Time				
0730 - 1730	Registration at Secretariat (Room TBD)			
	Opening Ceremony & Keynote Addresses at Grand Ballroom			
0730 - 0815	Guests and participants arrival into Grand Ballroom.			
0830 - 0915	Welcome Speech by Ms. Lily Khor, IEMT2012 General Chair Opening Speech by Mr. Wee Teck Lim, Chairman, IEEE-CPMT Malaysia Chapter Conference Opening Address by the President, IEEE-CPMT Society, Represented by Dr. Rolf Aschenbrenner			
0915 - 1000	Keynote Address I: Packaging For Automotive Electronics - Callenges And Trends. Dr. Jens Oetjen, Infineon Munich, GERMANY			
1000 - 1045	Keynote Address II: Embedded IC and Passives Technology For Wireless Communication Applications Assoc. Prof. Dr. Sung Yi, Portland State University, USA			
1045 - 1110	Coffee Breaks/Poster Session			
	ROOM	ROOM	ROOM	ROOM
1110 - 1250	SESSION A1 Process I	SESSION B1 Reliability And Modeling	SESSION C1 Pb Free Technology I	SESSION D1 3D Packaging & WLP
1250 - 1400	Buffet Lunch			
1400 - 1445	Keynote Address III: Wafer Level Packaging and MEMS Sensors Mr. Won Kyu Jeung, Samsung Electro-Mechanics Co., KOREA			
1445 - 1530	Keynote Address IV: Test Cost Trends And Opportinities. Mr. Marc Mydill, Texas Instruments, USA.			
1530 - 1600	Coffee Break/Poster Session			
	ROOM	ROOM	ROOM	ROOM
1600 - 1720	SESSION A2 Manufacturing & Tool	SESSION B2 iNEMI	SESSION C2 Die Attach Materials	SESSION D2 MEMS & Sensors
1830 - 2300	Dinner/Cultural Show			
	Dinner - Keynote Address V: An efficient and flexible R&D approach for the Semicon Industry. Mr. LW Yong, Carsem, MALAYSIA			
	(Dinner/Cultural Show in the Grand Ballroom)			

EXHIBITION - 8th NOVEMBER 2012, THURSDAY

Time	
0930 - 1700	Tabletop display outside of Conference Room

CONFERENCE SESSIONS (DAY 2) : 8th NOVEMBER 2012, THURSDAY

Time				
0730 - 0830	Registration at Secretariat (Room TBD)			
0830 - 0915	Keynote Address VI: Emerging Technology Trends And The Challenges Around Assembly and Test In Launching Next Generation Networking Products Dr. Kim Hyland, Sr. Director of Manufacturing Operations Engineering, Cisco USA			
0915 - 1000	Keynote Address VII: I-Manufacturing Ms. Sharon Ko, Carsem, MALAYSIA			
1000 - 1030	Coffee Breaks/Poster Session			
	ROOM	ROOM	ROOM	ROOM
1030 - 1230	SESSION A3 Interconnect I	SESSION B3 Process II	SESSION C3 Pb Free Technology II	SESSION D3 Thermo-Mechanical & Flow Modeling
1230 - 1345	Buffet Lunch			
1345 - 1430	Keynote Address VIII: ATE Based System Level Test as An Enabler for High Volume Heterogeneous 3D IC Mr. Gregory Smith, Teradyne, USA			
	ROOM	ROOM	ROOM	ROOM
1430 - 1550	SESSION A4 Interconnect II	SESSION B4 Test I	SESSION C4 Materials I	SESSION D4 Advanced Packaging I
1550 - 1620	Coffee Break/Poster Session			
	ROOM DAHLIA	ROOM MAWAR	ROOM MELATI	ROOM TERATAI
1620 - 1740	SESSION A5 Wirebond	SESSION B5 Test II	SESSION C5 Materials II	SESSION D5 Advanced Packaging II
	Award Presentation and Conference Closing Ceremony			

ORGANIZING COMMITTEE MEMBERS of IEMT 2012

General Chair:	Lily Khor, *Carsem*
Past General Chair:	Azhar Aripin, *ON Semiconductor*
Program Chair:	1) Wong Shaw Fong, *Intel Technology* 2) Prof. Dr. A. S. M. A. Haseeb, *University Malaya*
Secretariat:	Jessica Kong, *Carsem*
Keynote/Short Course Chair:	1) Mario Bolanos, *Texas Instruments* 2) Tan Lan Chu, *FreeScale Semiconductor* 3) Logendran Bharatham, *FreeScale Semiconductor* 4) Navas Khan Oratti Kalandar, *FreeScale Semiconductor*
Technical Chair:	1) Prof. Dr. Mohd Nasir Tamin, *Universiti Teknologi Malaysia* 2) Chew Chee Hiong, *ON Semiconductor*
Sponsorship:	1) Ooi Kooi Choon, *Fairchild Semiconductor* 2) Chai Chan Wah, *Unisem*
Exhibition Chair:	Dr. Hin Tze Yang, *Altera Corporation*
Publication Chair:	1) Assoc. Prof. Ir. Dr. Cheong Kuan Yew, *Universiti Sains Malaysia* 2) Khor Swee Har
Publicity/Website Dev Chair:	Lim Wee Teck, *ON Semiconductor*
Social/Tour:	Oo Choo Yee, *Carsem*
Logistic Chair:	Cheah Kar Wai, *Carsem*
Finance Chair:	Azhar Aripin, *ON Semiconductor*
Publicity Chair:	Paul Westling, *IEEE, USA*
International Liaison:	1) Dr. Annette Teng, *Silanna, Australia* 2) Dr. Chee Choong Kooi, *Intel Technology* 3) Tan Yik Yee, *Infineon*

DETAILED CONFERENCE PROGRAM

Short Course Instructors

(6th November, 2012)

ANALOG ELECTRONICS TESTING AND PRODUCT ENGINEERING

(SC I - Full Day Course)

Dr. Richard Gale, Ph. D., P. E.
Professor and Associate Chair, Graduate Studies
Electrical and Computer Engineering
Texas Tech University, US

ACHIEVING HIGH RELIABILITY FOR LEAD-FREE SOLDER JOINTS - MATERIALS CONSIDERATION

(SC II - Full Day Course)

Dr. Ning-Cheng Lee
Vice President of Technology
Indium Corporation

PROGRESSIVE ADVANCES IN HIGH DENSITY SUBSTRATES & PACKAGING TO DELIVER MORE THAN MOORE

(SC III-A - Half Day Course – Morning Session)

Dr. Andy Tseng
Director of Technical Marketing.
ASE US, California, USA

ADVANCED FAILURE ANALYSIS OF SEMICONDUCTOR PACKAGING

(SC III-B - Half Day Course – Afternoon Session)

Mr. Xue Ming,
Infineon Technologies Asia Pacific

DETAILED CONFERENCE PROGRAM

Keynote Speakers
(7th November, 2012)

PACKAGING FOR AUTOMOTIVE ELECTRONICS – CHALLENGES AND TRENDS

Dr. Jens Oetjen
Senior Manager, Package Technology Concepts, ATV PTP PCK PTC
Infineon Technologies,
Munich, Germany

EMBEDDED IC AND PASSIVE TECHNOLOGY FOR WIRELESS COMMUNICATION APPLICATIONS

Associate Professor Dr. Sung Yi
Mechanical and Materials Engineering Department
Portland State University
Portland, Oregon, USA

WAFER LEVEL PACKAGING AND MEMS SENSORS

Mr. Won-Kyu Jeung
Central R&D Institute
Samsung Electro-Mechanics Co., LTD

TEST COST TRENDS AND OPPORTUNITIES

Mr. Marc Mydill
TI Fellow, Manager Test Technology Center
Texas Instruments Inc.

DETAILED CONFERENCE PROGRAM

Keynote Speakers

(8th November, 2012)

EMERGING TECHNOLOGY TRENDS AND THE CHALLENGES AROUND ASSEMBLY AND TEST IN LAUNCHING NEXT GENERATION NETWORKING PRODUCTS

Mr. Kim Hyland
Sr. Director of Manufacturing Operations Engineering
Customer Value Chain Management operations
Cisco Systems

I-MANUFACTURING

Ms. Sharon Ko
General Manager
Carsem (M) Sdn. Bhd.

ATE BASED SYSTEM LEVEL TEST AS AN ENABLER FOR HIGH VOLUME HETEROGENEOUS 3D IC

Mr. Gregory Smith
Manager
Computing and Communications Business Unit
Teradyne

AN EFFICIENT AND FLEXIBLE R&D APPROACH FOR THE SEMICONDUCTOR INDUSTRY

(Conference Dinner, 7th November, 2012)

Mr. LW Yong
Chief Technology Officer
Carsem (M) Sdn. Bhd.

DETAILED CONFERENCE PROGRAM

Oral Presentation

Day 1 (7th November 2012, Wednesday)
Time: 1110 – 1250 (Session 1)

Session A1- Process I
Session Chair:

A1.1 1110 IEMT2012-P070
Material Characterization of High Thermally Conductive Die Attach Pastes for Power Applications
EL Chung & Eric Erfe
Carsem (M) Sdn. Bhd., MALAYSIA

A1.2 1130 IEMT2012- P141
Effect of Die Attach Adhesive on the Uniformity of Junction Temperature of LED Chips
S. W. Ricky Lee & Mian Tao
Hong Kong University of Science and Technology, HONG KONG

A1.3 1150 IEMT2012- P086
Elimination of Epoxy Bridging in Diebond Process
Novin Yap, Caloy Hermosura & Freddie Pascual
ON Semiconductor, PHILIPPINES

A1.4 1210 IEMT2012- P103
Die Attach Capability on Ultra Thin Dies with Less than 20µm Silicon Chip Thickness
Zakaria Abdullah
Infineon Technologies, MALAYSIA

A1.5 1230 IEMT2012-P001
Sintering of Ag80-Al20 Nanoalloy for High Temperature Die Attach Applications on Silicon Carbide-Based Power Devices: The Effects of Ramp Rate and Dwell Time
Vemal Raja Manikam Khairunisak Abdul Razak & Kuan Yew Cheong
University Science Malaysia, MALAYSIA

Session B1- Reliability & Modeling

Session Chair:

B1.1 1110 IEMT2012- P071
On the Drop Impact Performance of WLCSP with Different RDL Technologies
Yiyi MA & Wei-Zhen Goh
ST Microelecctronics, SINGAPORE

B1.2 1130 IEMT2012- P046
Understanding of Physics-of-Failure in Power Packages by Mechanical Modeling and Reliability Tests
Xueren Zhang
ST Microelectronics, SINGAPORE

B1.3 1150 IEMT2012- P079
Correlation Study on Moisture Soak Equivalent Between MSL1 (85/85% Soaking 168 hours) and Autoclave Test in term of Weight Gain and Delamination
Jason Ng Boon Lim
Fairchild Semiconductor,MALAYSIA

B1.4 1210 IEMT2012- P142
Solder Parameter Sensitivity for Package-On-Package (POP) Fatigue Life Prediction
Ishak Abdul Azid
University Science Malaysia, MALAYSIA

B1.5 1230 IEMT2012- P066
Extended Cohesive Zone Model for Stimulation of Solder/IMC Interface Cyclic Damage Process in Pb-free Solder Interconnects
A.F.M. Yamin[1], N.M. Shaffiar[1], W.K. Loh[2] & M.N. Tamin[1]
[1]University Technology Malaysia, MALAYSIA
[2]Intel Technology Sdn. Bhd., MALAYSIA

Session C1- Pb Free Technology I

Session Chair:

C1.1 1110 IEMT2012- P039
Solder Microstructure and Interface Intermetallic Evaluation between Sn-3.5Ag-1.0Cu-xZn Lead Free Solder and Copper Substrate under Long Time Thermal Aging
Iziana Yahya[1], Noor Asikin Ab Ghani[1], Mohd Arif Anuar Mohd Salleh[2], Hamidi Abd Hamid[1], Zainal Ariffin Ahmad[3] & Ramani Mayappan[1]
[1]Universiti Technology Malaysia, MALAYSIA
[2]Universiti Malaysia Perlis, MALAYSIA
[3]Universiti Sains Malaysia, MALAYSIA

C1.2 1130 IEMT2012-P003
Interfacial Reactions between Sn-3.8Ag-0.7Cu Solder and Ni-W Alloy Films
A.S.M.A Haseeb, C.S. Chew[1] & Mohd. Rafie Johan

C1.3 1150 IEMT2012-P032
Effect of Ni, Ge and P Addition in Sn-Ag-Cu Lead-free Solder on Solder Joint Properties with Electroless Ni/Au Electrodes
Ikuo Shohji[1] & Ryohei Arai[1]
[1]Gunma University, JAPAN

C1.4 1210 IEMT2012-P009
Interfacial Reaction Between Ni-Zn Alloy Films and Lead-free Solders
P.Y. Chia & A.S.M.A. Haseeb
University of Malaya, MALAYSIA

C1.5 1230 IEMT2012- P131
Effect of Surface Finish and Nickel Addition in Sn-3Ag-0.5Cu Solder on Intermetallic Compounds Formation
Siti Rabiatull Aisha et. al., University Technology Malaysia, MALAYSIA

University of Malaya, MALAYSIA
[1]Universiti Tunku Abdul Rahman, MALAYSIA

Session D1- 3D Packaging & WLP
Session Chair:

D1.1 1110 IEMT2012- P136
Through-Silicon Via Technology for Three-Dimensional Integrated Circuit Manufacturing
Dr. Yann Civale
IMEC, BELGIUM

D1.3 1150 IEMT2012-P147
Micro Ball Bumping Packaging for Wafer Level * 3-D Solder Sphere Transfer and Solder Jetting
Thomas Oppert[1] Thorsten Teutsch[3], Ghassem Azdasht[1] & Elke Zakel[2]
[1]Pac Tech- Packaging Technologies, GERMANY
[2]Pac Tech USA Inc., USA
[3]PacTech Asia Sdn. Bhd., MALAYSIA

D1.4 1210 IEMT2012- P062
Development and Characterization of Next Generation eWLB (embedded Wafer Level BGA) Packaging
Yonggang Jin,Jerome Teysseyre, Xavier Baraton, S.W. Yoon[1], Yaojian Lin[1], Pandi C.Marimuthu[1]
ST Microelectronics, SINGAPORE
[1]STATS ChipPAC Ltd., SINGAPORE

D1.5 1230 IEMT2012-P063
Enhanced Fan-out WLP for High Power Device Packaging
Yonggang Jin, Yaohuang Huang, Jerome Teysseyre, S.W. Yoon[1]
ST Microeletronics, SINGAPORE
[1]STATS ChipPAC Ltd., SINGAPORE

Day 1 (7th November 2012, Wednesday)
Time: 1600 – 1720 (Session II)

Session A2- Manufacturing and Tool
Session Chair:

A2.1 1600 IEMT2012-P047
Authomated Assembly Lot Transaction in Today's Semiconductor Asssembly
MS Tiong, Thiruselvam & Richard Tugay
Carsem (M) Sdn. Bhd., MALAYSIA

A2.2 1620 IEMT2012-P058
Success Story in Driving Quality Enhancements in the Indirect Materials used in Assembly/Test Electronic Packaging Manufacturing
Dennis Prem Kumar Chandran, Ong Chee Teong & Mohd Jaffri Razai
Intel Technology Sdn. Bhd., MALAYSIA

A2.3 1640 IEMT2012-P092
Innovative Tin Electrolyte Combining High Technical Standards With Significant Cost Saving Potentials
Olaf Kurtz, Peter Kuhlkamp, Jurgen Barthelmes, Robert Ruther, Din-Ghee Neoh & Sia-Wing Kok
Atotech SEA PTD LTD, GERMANY

A2.4 1700 IEMT2012-P134
Design and Construction of a Droplet Based Manufacturing Machine
Hamed Kalami & Mehrdad Vahdati
K.N. Toosi University of Technology, IRAN

Session B2- iNEMI Session
Session Chair:

B2.1 1600 IEM2012-P126
Thermal Fatigue Results for Low Ag Alloys - iNEMI Pb-Free Alloy Characterization Project Experimental Work
Gregory Henshall1[1] Richard Parker[2] Weiping Liu[3], Keith Sweatman4 Keith Howell[4], Ranjit S. Pandher5, Derek Daily[6], Mark Currie[7], Richard Coyle[8], Joe Smetana[9], Jennifer Nguyen[10], Tae-Kyu Lee[11], Michael Osterman[12], Jian Miremadi[1], Aileen Allen[1], Joelle Amold[13], Donald Moore[7] & Graver Chang[14]
[1]Hewlett-Packard Co., USA
[2]Delphi, USA
[3]Indium Corp., USA
[4] Nihon Superior Co., Ltd., JAPAN
[5]Cookson Electronics, USA
[6]Senju Comtek Corp., USA
[7]Henkel Corp., USA
[8]Alcatel-Lucent, USA
[9]Alcatel-Lucent, USA
[10]Flextronics Milpitas, USA
[11]Cisco Systems, USA
[12]CALCE, USA
[13]DFR Solutions, USA
[14]IST Inc., Taiwan, R.O.C.

B2.2 1620 IEMT2012-P127
Highlights of iNEMI 2013 Technology Roadmap
Bob Pfahl, Bill Bader & Chuch Richardson
International Electronics Manufacturing Initiative, USA

B2.3 1640 IEMT2012-P128
Current and Future Manufacturing Test Solution Strategies – iNEMI Boundary-scan and Built in Self Test (BIST) Technology Integration for Future Standardization
Z. Conro[1], P.B. Geiger[2], J. Balangue[3] & S. Butkovich[1]
[1]Cisco Systems Inc., USA
[2]Dell Inc., USA
[3]Agilent Technologies, SINGAPORE

B2.4 1700 IEMT2012-P129
An Update of Cu Wire Bonding Investigation at iNEMI and Recent Industry Advances
Peng Su[1] & Alissa Cote[2]
[1]Cisco Systems Inc., USA
[2]IBM Inc., VT

Session C2- Die Attach Materials
Session Chair:

C2.1 1600 IEMT2012-P088
Low-Temperature Sintering of Nanosilver Paste for Lead-Free Chip Attach
Guo-Quan Lu
Virginia Tech., USA

C2.3 1640 IEMT2012-P083
Sintered Ag as Lead-free Die Attach Materials
Kim S Siow
ON Semiconductor, MALAYSIA

C2.4 1700 IEMT2012-P007
Synthesis of Cu Nanocomposites With Various Morphology via Pulsed Wire Evaporation
Shutesh Krishnan[a,b], A.S.M.A. Haseeb[a] & Mohd Rafie Johan[a]
[a]University of Malaya, MALAYSIA
[b]ON Semiconductor, MALAYSIA

Session D2- MEMS & Sensors
Session Chair:

D2.1 1600 IEMT2012-P091
Cavity Packages For Volume MEMS Applications
Alan Evans
Unisem, UK

D2.2 1620 IEMT2012-P065
MEMS in QFN
Tan Boo Wei[a,b] & Robin Wu[b]
[a]Group Engineering Manager, Carsem, CHINA
[b]Engineering Manager, Carsem, CHINA

D2.3 1640 IEMT2012-P105
Material & Process Challenges for Tire Pressure Sensor (TPS)
Y.S. Ng & Edmund Sales Cabatbat
Carsem (M) Sdn. Bhd., MALAYSIA

D2.4 1700 IEMT2012-P067
Combined Molding Package (Proximity Sensor)
Y.F. Lee & C.C. Kun
Carsem (M) Sdn. Bhd., MALAYSIA

Day 2 (8th November 2012, Thursday)
Time: 1030 – 1230 (Session III)

Session A3- Interconnect I
Session Chair:

A3.1 1030 IEMT2012-P089
Low COO PVD Solutions Addressing 2.5D and 3D Packaging Challenges
Patrick Desjardins,
Oerlikon, SWITZERLAND

A3.3 1110 IEMT2012-P152
Pd Coated Copper Wire on XoAA in LQFP Package
Wang Mei Yong[1], Jude Teo[2],Gan Swee Lee[3], Tan Kian Heong[1], Audrey Swee[1], Lee Wai Hoow[1]
Infineon Technologies, MALAYSIA

A3.4 1130 IEMT2012-P042
Bondability Study on Naoscale Interfacial Frictional Behavior Between Copper FAB And Aluminum Pad
Hsiang-Chen Hsu[1], Li-Min- Chu[1], Jih-Hsin Chien[1], Shen-Li Fu[2] & Wen-Jui Feng[3]
[1]I-Shou University, TAIWAN
[2]I-Shou University, TAIWAN
[3]National Sun Yat-Sen University, TAIWAN

A3.5 1150 IEMT2012-P035
Pad Bending Improvement on Copper Wire Bonding on NiP/Pd/Au Bond Pad
Tan Kian Heong[1], Wang Mei Yong[1] & Jude Teo Chen Kim[2]
[1]Infineon Technologies Sdn. Bhd., MALAYSIA
[2]Infineon Technologies Asia Pte. Ltd., SINGAPORE

A3.6 1210 IEMT2012-P026
Cu Bonding Development & Challenges on NiPd Bond Pad
Yuen Chun Soh, Chee Chian Lim, Tze Yang Hin & Chin Shung Teoh
Fairchild Semiconductor (M) Sdn. Bhd., MALAYSIA

Session B3- Process II
Session Chair:

B3.1 1030 IEMT2012-P138
The Challenges of Thin Cu Wire Bond on Thin FSM and Small BPO
Tan Aik Teong, Siti Amira Faisha & Lem Tien Heng
Infineon Technologies MALAYSIA

B3.2 1050 IEMT2012-P146
Characterization of a Wire Bonding Process With the Added Challenges From Palladium-Coated Copper Wires
A C K Chang[1], A B Y Lim[1], C X Lee[1], O Yauw[1] & B Chylak[2]
[1]K&S Pte. Ltd., SINGAPORE
[2]K & S Industries Inc., USA

B3.3 1110 IEMT2012-P148
Removal of Flux Residues from Highly Dense Packages
Mike Bixenman & Jason Chan
Kyzen Corporation, USA

B3.4 1130 IEMT2012-P015
Characterization on Ultra Low Loop Cu Wire Property and Behavior
Melissa Ng Mei Ching & Lee Chai Ying
Infineon Technologies, MALAYSIA

B3.5 1150 IEMT2012-P034
Effect of Mold Compound Property to BGA Solder Bridging
Chong Kim Foong[a], Wong Shaw Fong[b], Leong Jenn Seong[b] & He Yi[c]
[a]Intel Technology Sdn. Bhd., MALAYSIA
[b]Intel Products Sdn. Bhd., MALAYSIA
[c]Intel Corporation, ARIZONA

B3.6 1210 IEMT2012-P059
Characterization of Mechanical Testing on Lead Free Solder on Electronic Application
Ervina Efzan M.N. & Amares Singh
University Multimedia, MALAYSIA

Session C3- Pb Free Technology II
Session Chair:

C3.1 1030 IEMT2012-P057
Effect of Multiple Reflow on Joining of Tin Electroplating
James Foo Swee Liang, A.S.M.A Haseeb & Goh Yingxin,
University of Malaya, MALAYSIA

C3.2 1050 IEMT2012-P031
Investigation of Wetting Behavior of Sn-3Ag-0.5Cu Solder Paste to BGA Solder Ball
Maryam Husna Yahya[1], Keisuke Nakamura[1], Ikuo Shohji[1], Toshihiro Housen[2], Yumi Yamamoto[2] & Yoshio Kaga[2]
[1]Gunma University, JAPAN
[2]RHESCA Co., Ltd., JAPAN

C3.3 1110 IEMT2012-P037
Solder Microstructure And Intermetallic Interface Evaluation Between Sn-3.5Ag-1.0Cu-xNi Lead

C3.4 1130 IEMT2012-P061
Size and Strain Effect on Miniature Copper-Solder-Copper Joint
Tan Kok Ee
Nanyang Technological University, SINGAPORE

C3.5 1150 IEMT2012-P040
Effect of Adding Cu Porous on The Microstructure And Mechanical Properties of The Pb-Free Solder Joint
Nashrah Hani Jamadon[1,2], Farazila Yusof[1,2], Tadashi Ariga[3] & Mohd Hamdi[1,2]
[1,2]University of Malaya, MALAYSIA
[3]Tokai University, JAPAN

C3.6 1210 IEMT2012-P078
Effects of Layer Thickness and Stacking Sequence of Electrodeposited Sn and Bi Layers on Reflowed SnBi Solder Alloys
Lee Seen Fang, Goh Yingxin & A.S.M.A.

Free Solder Under Long Time Thermal Aging
Noor Asikin Ab Ghani[1], Iziana Yahya[1], Mohd Arif Anuar Mohd Salleh[2], Saidatulakmar Shamsuddin [1], Zainal Ariffin Ahmad[3], Ramani Mayappan[1]
[1]University Technology Mara, MALAYSIA
[2]Universiti Malaysia Perlis, MALAYSIA
[3]Universiti Sains Malaysia, MALAYSIA

Haseeb
University of Malaya, MALAYSIA

Session D3- Thermomechanical & Flow Modeling
Session Chair:

D3.1 1030 IEMT2012-P120
Thermal Analysis in High Power LED Packages Using Finite Element Method
Law Ruen Ching
Philips Lumileds, MALAYSIA

D3.2 1050 IEMT2012-P111
Selective Rescreen
Leslie Kok
Texas Instrument, MALAYSIA

D3.3 1110 IEMT2012-P100
Three Dimensional Numerical Prediction of Epoxy Flow During the Underfill Process in Flip Chip Packaging
M. F. M. A. Majid[1], C.Y. Khor[1], M. K. Abdullah[1], M. Z. Abdullah[1], A. Aziz[1], A. Jappar[2], M. S. Aris[2]
[1]Universiti Sains Malaysia, MALAYSIA
[2]Universiti Teknologi Petronas, MALAYSIA

D3.4 1130 IEMT2012-P045
Material Characterization of Transparent Molding Compounds and Leadframe Design Improvement Using FEA for Ambient Light and Proximity Sensor Packages
SK Chin & Eric Erfe
Carsem (M) Sdn. Bhd., MALAYSIA

D3.5 1150 IEMT2012-P048
Software-based Development of 3D Integration Flows
Armin Grünewald, Kai Hahn & Rainer Bruck
University of Siegen, GERMANY

D3.6 1210 IEMT2012-P124
Numerical & Experimental Analysis of Bond Pad Stack Structure for Wire Bond Interconnection
Alfred, YEO, F. X. Che & Poi-Siong Teo,
Infineon Technologies Sdn. Bhd., SINGAPORE

Day 2 (8th November 2012, Thursday)
Time: 1430 – 1550 (Session IV)

Session A4 – Interconnect II

Session Chair:

A4.1 1430 IEMT2012-P102
Nanostructured Titania and Micromachined Titanium for Thermal Management in Microelectronics
A.S Zuruzi[1] & N. C. MacDonald[2]
[1]University of Technology and Design, SINGAPORE
[2]Department of Mechanical and Environmental Engineering, CA

A4.2 1450 IEMT2012-P004
An investigation on Cu Wire Bond Corrosion and Mitigation Technique for Automotive Reliability
Tai C.T., Lim H.T., Teo C.H., Audrey Swee & P.J.
Infineon Technologies Sdn. Bhd., MALAYSIA

A4.3 1510 IEMT2012-P013
Copper Wire Bond On MCM Device (Bond Stitch On Bump Ball)
Tan Boo Wei[a] & Ken Niu[b]
[a]Group Engineering Manager, Carsem, CHINA
[b]Wire Bond Section Manager, Carsem, CHINA

A4.4 1530 IEMT2012-P097
Ball Stitch on Bump For Bare Copper Wire
Tan Kai Chat & Liong Jin Yoong
ON Semiconductor, MALAYSIA

Session B4 – Test I

Session Chair:

B4.1 1430 IEMT2012-P104
Signal Sensitivity to Supply Noise on High-Speed I/O
Siang Rui Chan[1,2], Fern Nee Tan[1] & Rosmiwati Mohd-Mokhtar[2]
[1]Intel Microelectronics (M) Sdn. Bhd, MALAYSIA
[2]Universiti Sains Malaysia, MALAYSIA

B4.2 1450 IEMT2012-P080
Elimination of Integrated Circuit Bond Pad Crater Test over Rejection
Rona Balabbo & Marvin Picardal
ONSemiconductor,PHILIPPINES

B4.3 1510 IEMT2012-P051
Precision Delay Matching Testing for Gate Drive ICs on IFLEX™ Tester Platform
Bobby Lai & Roland Su
Texas Instruments, TAIWAN

B4.4 1530 IEMT2012-P056
Sensitivity Study of I/O Termination of Vertical Side-Chip Interconnection Design
Bok Eng Cheah[1], Jackson Kong[1] & Ai Heong Tan[1,2]
[1]Intel Microelectronics (M) Sdn. Bhd., MALAYSIA
[2]Universiti Sains Malaysia, MALAYSIA

Session C4 – Materials I
Session Chair:

C4.1 1430 IEMT2012-P096
High Temperature Lead-Free Solder Joints Via Mixed Powder System
Sehar Samiappan
Indium Corporation of America, USA

C4.2 1450 IEMT2012-P099
Physical Characterization of Titanium Dioxide Based Varistor Materials Doped with Cobalt Oxide
Zarrin Kothandapani, Shahida Bagum, M. Ansari M. Nainar, S.Gholizadeh & Wong Menn Yee
Universiti Tenaga Nasional, MALAYSIA

C4.3 1510 IEMT2012-P112
Creep Properties of Soft Solder Die Attach With Ni Ball in Power Package Applications
F. X. Che[1,], Dandong Ge[1], Yik Siong Tay[2], Mohamad Yazid[1] & Swee Lee Gan[1]*
[1]Infineon Technologies Asia Pacific Pte Ltd, SINGAPORE
[2]Infineon Technologies (Malaysia) Sdn Bhd

C4.4 1530 IEMT2012-P094
Patterning of Multi-leveled Microstructures on Flexible Polymer Substrate Using Roll-to-Roll Ultraviolet Nanoimprint Lithography
Nazrin Kooy, Khairudin Mohamed & Norian Rahman
University Science Malaysia, MALAYSIA

Session D4 – Advanced Packaging I
Session Chair:

D4.1 1430 IEMT2012-P016
High Reliability Encapsulant Liquid Resin for SIP The Simultaneous Process of Over Mold and Underfill
Koichiro.Nagai, Yuki.Ishikawa & Atsushi.Okuno
Sanyu Rec Co., LTD, JAPAN

D4.2 1450 IEMT2012-P135
Heat Spreader Design And Process Optimization to Compensate Heat Spreader-Chip Interface Voids Due to Substrate Warpage Nature.
Kok Wee Yeoh[1], Kheng Tat Mar[1], Shinobu Kourakat[2], Kazuo Ogata[2] & Eduardo Fernandez Monge[3]
Intel Technology, MALAYSIA

D4.3 1510 IEMT2012-P093
Large Area Mold Embedding Technology with PCB Based Redistribution
T. Braun[1], K.-F. Becker[1], L. Böttcher[1], A. Ostmann[1], S. Voges[2], T. Thomas[2], R. Kahle[2], V. Bader[1], J. Bauer[1], R. Aschenbrenner[1] & K.-D. Lang[2]
Fraunhofer IZM, GERMANY

D4.4 1530 IEMT2012-P036
Solder Extrusion Solution And Mold Adhesion to Die Surface Improvement With PI Isolation Design For FCOL Exposed Die Technology
TS Lim, Lee Siew Kee & CH Cheong
Texas Instrument, MALAYSIA

Day 2 (8th November 2012, Thursday)
Time: 1620 – 1740 (Session V)

Session A5- Wirebond
Session Chair:

A5.1 1620 IEMT2012-P144
Bonding of Ag-alloy wire in LED packages
Jie Wu, Tom Rockey, Oranna Yauw, Liming Shen & Bob Chylak
K & S, SINGAPORE

A5.2 1640 IEMT2012-P140
Development of Insulated Cu Wire Ball Bonding
HY Leong[1], Faizal Zulkifli Mohd[2], Mohd Rusli Ibrahim[2], Wong Boh Kid[2], Navas Khan[2], B.K Yap[1] & L.C. Tan[2]
[1]Universiti Tenaga Nasional, MALAYSIA
[2]Freescale Semiconductor Malaysia Sdn. Bhd., MALAYSIA

A5.3 1700 IEMT2012-P060
Further Characterization of 2nd Bond in Bare Cu Wire and Pd Coated Cu Wire on Various Leadframe Plating Scheme
Loh Lee Jeng, Loh Kian Hwa, Ng Wen Chang
Carsem (M) Sdn. Bhd., MALAYSIA

A5.4 1720 IEMT2012-P090
Alloyed Copper Bonding Wire With Homogeneous Microstructure
S. Murali, Johnny Yeung, Roman Perez
Heraeus Materials Singapore Pte Ltd, SINGAPORE

Session B5- Test II
Session Chair:

B5.1 1620 IEMT2012-P018
Hardware Checker Module
Michael Pahanel
Texas Instrument, MALAYSIA

B5.2 1640 IEMT2012-P020
A Cost Effective Method to Test RF Power on ATE in Manufacturing
Chek Yean Feng
Texas Instrument, MALAYSIA

B5.3 1700 IEMT2012-P041
Extending Tester Capability by Use of Programmable-Gain Instrumentation Amplifier as an IC Test Solution
Francis Tan Teik Leong
Fairchild Semiconductor (Malaysia) Sdn. Bhd., MALAYSIA

B5.4 1720 IEMT2012-P019
Building a Floating Power Supply ModuleAdvances
Liew Thou Chin *, Chek Yean Feng
Texas Instrument, MALAYSIA

Session C5 – Materials II
Session Chair:

C5.1 1620 IEMT2012-P076
Nanoparticles Reinforcements
Hng Joo Nee
Universiti Teknikal Malaysia, MALAYSIA

C5.3 1700 IEMT2012-P049
Stretching the Capability of Intel Direct Material Usability (Shelf Life)
Naziana Mohd Nasir & Tan Chee

Kiat
Intel Technology, MALAYSIA

C5.2 **1640** **IEMT2012-P012**
Material Analysis and Process Characterization of Super High Thermal Performance Die Attach Epoxy Towards Package Reliability, Thermal and Electrical Performance
Wang H.T & Yeo K.B.
Infineon Technologies, MALAYSIA

C5.4 **1720** **IEMT2012-P087**
Dicing Die Attach Film Challenges at Multi Die Stack Packages
Tee Swee Xian & Perumal P. Nanthakumar
Infineon Technologies, MALAYSIA

Session D5 – Advanced Packaging II
Session Chair:

D5.1 **1620** **IEMT2012-P033**
Solder Ball Robustness on Polymer Core Solder Balls for Ball Grid Array Package
Tan Cai Hui[1], Dr. Yap Boon Kar[2], Dr. Agileswari Ramasamy[3], Calvin Lo[4]
[1,2,3]Universiti Tenaga Nasional, MALAYSIA
[4]Freescale Semiconductor Malaysia Sdn. Bhd., MALAYSIA

D5.2 **1640** **IEMT2012-P106**
Challenges in Solder on Leadframe Package
KC Thong
Carsem (M) Sdn. Bhd., MALAYSIA

D5.3 **1700** **IEMT2012-P095**
The Impact of Stencil Aperture Design for Next Generation Ultra-
Fine Pitch & Jeff Schake
DEK Printing Machines Ltd.,UK

D5.4 **1720** **IEMT2012-P073**
High Performance and Reliable TO Package
Lee Teck Sim & Yong Wae Chet
Infineon Technologies (Malaysia) Sdn. Bhd., MALAYSIA

Poster Presentation

Day 1 (7th November 2012, Wednesday)

1045-1110

P1 **IEMT2012-P027**
Plasma Process Considerations for Copper Wire Bonding
Raymond Yeo,
Nordson MARCH, SINGAPORE

P2 **IEMT2012-P043**
Reliable Ultra-low-loop Bonding Approach on X2/X3 thin QFN
Law Wai Ling
Carsem (M) Sdn. Bhd., MALAYSIA

P3 **IEMT2012-P044**
Mold Compound Selection Study for CMOS90 176 lead LQFP 24x24mm Package
Teng Seng Kiong, Ibrahim Ruzaini & Serene Teh
Freescale Semiconductor Malaysia Sdn. Bhg., MALAYSIA

P4 **IEMT2012-P069**
Extending the Storage Life of Stencil Printed Wafers for Small Die Size on Wafer Mounting Tapes
EL Chung & Eric Erfe
Carsem (M) Sdn. Bhd., MALAYSIA

1530-1600

P5 **IEMT2012-P107**
Improvement Journey of Strip Test Sticky Issue
Euclea Cheah Wuan Ning,
Texas Instrument, MALAYSIA

P6 **IEMT2012-P011**
Soldering And Interfacial Characteristics of Sn-3.5Ag Solder Containing Zinc Nanoparticles
Y. M. Leong, A. S. M. A. Haseeb, M. M. Arafat
University of Malaya, MALAYSIA

P7 **IEMT2012-P052**
Study on Reliability Test of Die Attach Material
Lim Chuan Yik, Dr. Yap Boon Kar, Nor Shafika
Universiti Tenaga Nasional, MALAYSIA

P8 **IEMT2012-P054**
Study the Effect of Ag Addition on the Intermetallic Compound and Joint Strength between Sn-Zn-Bi Lead Free Solder and Copper Substrate under Liquid State Aging
Nor Aishah Jasli, Hamidi Abd Hamid & Ramani Mayappan
University Technology Mara, MALAYSIA

Day 2 (8th November 2012, Thursday)

1000-1030

P9 **IEMT2012-P098**
Affect of Binders on Mechanical Properties of TiO_2 based Varistors
S.Gholizadeh, Dr. Sh .Begum, Dr.M. Ansari M Nainar & Z.Kothandapani
Universiti Tenaga Nasional, MALAYSIA

P10 **IEMT2012-P125**
Contamination of the Insulated Material During Wire Bonding
Nanthini Sugumaran , KB Yap & HY Leong
Universiti Tenaga Nasional, MALAYSIA

P11 **IEMT2012-P116**
Microstructural Stability and Mechanical Properties of Sn-1Ag-0.5Cu Solder Alloy with 0.1 wt% Al Addition Under High-Temperature Annealing
Dhafer Abdul-Ameer Shnawah
University of Malaya

1550-1620

P12 **IEMT2012-P143**
Thermal Analysis of Embedded Chip
Ishak Abdul Azid
Universiti Sains Malaysia, MALAYSIA

P13 **IEMT2012-P149**
Effect of Surface Modification by Citric Acid on Fluxless Vacuum Bonding of Cu with Sn-Cu Alloy
Masumi Hayakawa, Shinji Koyama & Ikuo Shohji
Gunma University, JAPAN

P14 **IEMT2012-P150**
Effect of Filler Content on Tensile Properties of Underfill Material for Flip Chip Bonding
Shinya Kitagoh, Hironao Mitsugi, Shinji Koyama & Ikuo Shohji
Gunma University, JAPAN

P15 **IEMT2012-P151**
Effect of Strain Rate on Tensile Properties of Miniature Size Lead-Free Alloys
Yuichiro Toyama, & Ikuo Shohji
Gunma University, JAPAN

Institute of Electrical and Electronics Engineers

35th International Electronics Manufacturing Technology Conference (IEMT 2012)
Kinta River Front Hotel, Perak, Malaysia
6th - 8th November, 2012

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

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Mailing Address : ____

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

REGISTRATION FEE DETAILS

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

CONFERENCE ON 7TH & 8TH NOVEMBER 2012 (2 FULL DAYS). EARLY BIRD REGISTRATION FEE (BEFORE 1ST SEPTEMBER 2012)			
CATEGORIES	CONFERENCE FEE	SHORT COURSE FEE	CONFERENCE + SHORT COURSE
[ ] SPEAKERS	[ ] RM570	As below	[ ] RM970
[ ] IEEE MEMBER	[ ] RM700	[ ] RM500	[ ] RM1100
[ ] NON IEEE MEMBER	[ ] RM880	[ ] RM600	[ ] RM1350
[ ] FULL TIME STUDENTS	[ ] RM520	[ ] RM450	[ ] RM920
LATE FEE CHARGE – A late fee charge of RM100 will be imposed to all registrations that are submitted after 1st October 2012			
Note: 1 Ringgit (MYR) is approximately US$0.33		TOTAL AMOUNT	

- **Conference** registration fee on **7th and 8th November 2012** includes daily luncheons, 2 coffee breaks, program book and softcopy of proceedings.
- **Short Course** registration fee on **6th November 2012** 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 6TH NOVEMBER 2012 (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 :** **Analog Electronics Testing and Product Engineering** **Instructor :** Prof. Richard Gale Texas Tech University, USA	
[ ] **Short Course II (Full Day)** **Topic :** **Achieving High Reliability for Lead-Free Solder Joints - Materials Consideration** **Instructor :** Dr. Ning-Cheng Lee Indium Corporation, USA	
[ ] **Short Course III-A (Half Day)** **Topic :** **Progressive Advances in High Density Substrates & Packaging to Deliver More than Moore.** **Instructor :** Andy Tseng ASE, USA	[ ] **Short Course III-B (Half Day)** **Topic :** **Advanced Failure Analysis of Semiconductor Packaging** **Instructor :** Xue Ming Infineon Technologies Asia Pacific, SINGAPORE

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.**

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Special Meal Request (if any) : [ ] Vegetarian

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Email : jessicakong@carsem.com.my Conference website : http://ewh.ieee.org/r10/malaysia/cpmt/iemt.htm

Note : The IEMT2012 secretariat will provide a hotel registration code to all participants who wish to stay in the hotel at discounted rate.