



# ICEP2011

## APRIL 13<sup>[Wed]</sup> - 15<sup>[Fri]</sup>, 2011

### Nara Prefectural New Public Hall, Japan



The International Conference on Electronics Packaging (ICEP) 2011 will be held from April 13th to 15th at the Nara New Prefectural Public Hall in Nara, Japan.

The ICEP2011 conference cover all aspects of the JISSO technologies such as Advanced Packaging, Substrate, Design and Modeling and Reliability, Thermal Management, Manufacturing and Process, Interconnection, Optoelectronics, Printed Electronics, 3D and TSV, MEMS and Sensor, Self-Organization and Self-Assembly, Emerging Technologies, RF, Automotive Electronics, Energy and Environment. The technical program will include five keynote speeches, 46 oral technical sessions and poster sessions. About 200 papers regarding JISSO technologies will be presented by promising researchers from more than 10 countries.

We also plan to hold the welcome events to enjoy the atmosphere of Nara, the old capital city of Japan. People living in Nara are also preparing to welcome all participants with hospitality.

This symposium aims to provide a global forum for presentation and discussion of most recent topics developed for the next generation. We expect that ICEP2011 would play an important role not only for understanding fundamental knowledge but also forecasting future

technologies to be developed.

We, the organization committee, are confident that the conference will provide excellent opportunities for participants to obtain practical information of technologies and to develop global network. We are looking forward to seeing you at the conference.

*K. Uenishi*

Keisuke UENISHI

General Chairperson of ICEP2011 Committee

Sponsored by:

**Japan Institute of Electronics Packaging (JIEP)**  
**IEEE CPMT Society Japan Chapter**

Contact:

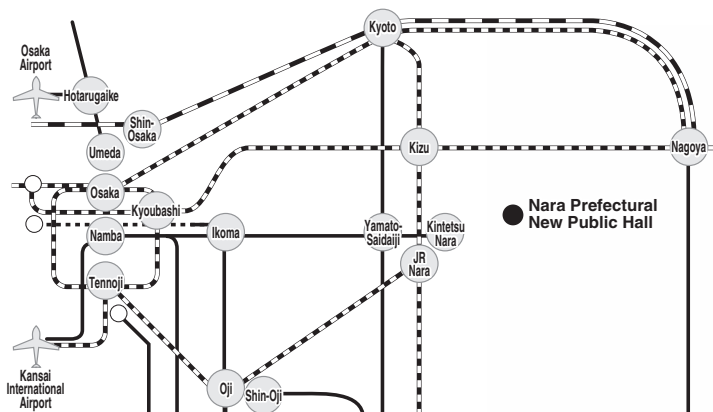
Secretariat of ICEP 2011

JIEP,

3-12-2 Nishiogi-kita, Suginami-ku Tokyo 167-0042, Japan

<http://www.jiep.or.jp/icep/>

#### Map



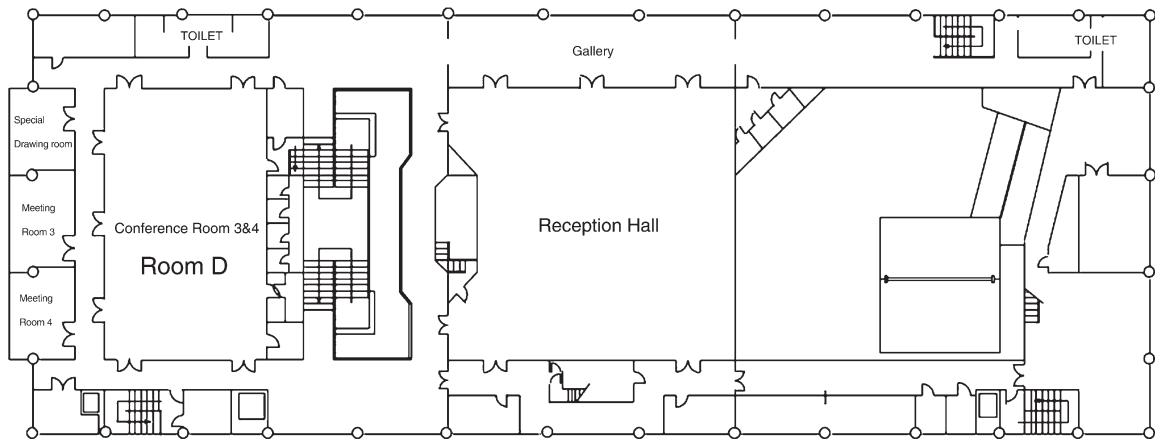
IEEE COMPONENTS, PACKAGING AND MANUFACTURING TECHNOLOGY SOCIETY



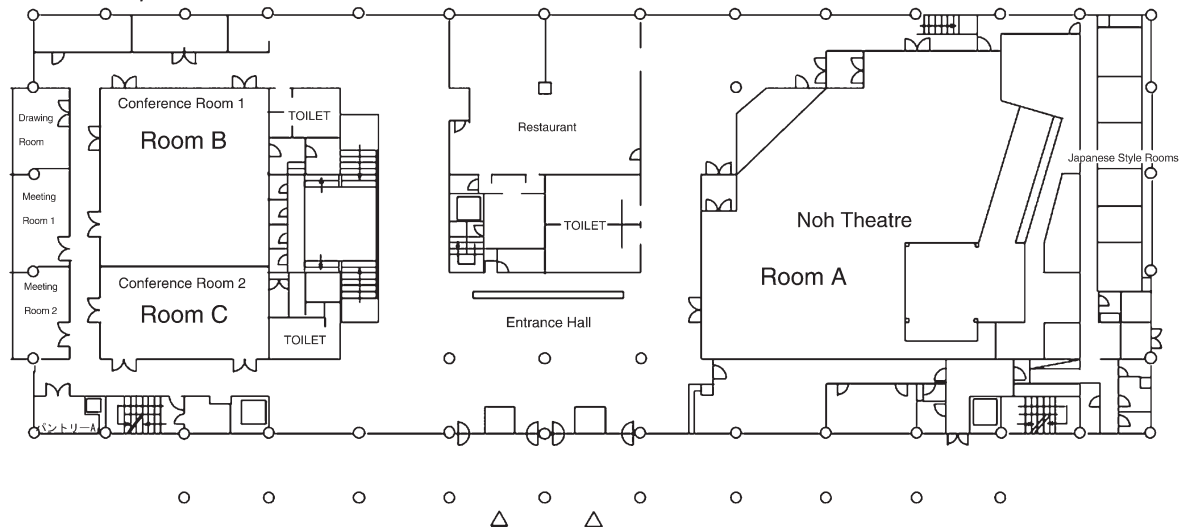
Nara Prefectural New Public Hall

	Room A	Room B	Room C	Room D
10:00	<p><b>WA1: MFG-1</b>  <b>WA1-1</b>                      Analysis on wirebond mechanical integrity of ultra fine pitch wirebond on ultra low-k(ULK) device                      T.Hisada, T.Aoki, S.Harada, J.C.Malinowski, IBM Japan / Japan</p> <p><b>WA1-2</b>                      Maximize Memory Capacity Package with Highest Quality and Lowest Cost                      D.Fann, PowerTech / Taiwan, R.O.C.</p> <p><b>WA1-3</b>                      Stress Simulation of Underfill Materials in Flip Chip Package                      T.Sato, Namics / Japan</p>	<p>(11:00)  <b>WB2: RF</b>  <b>WB2-1</b>                      The Correlation between Imbalance Component and EM Radiation from a Differential-Paired Line with Different Length                      Y.Kayano, K.Mimura, H.Inoue, Akita University / Japan</p> <p><b>WB2-2</b>                      Design and Test of RF Front End for UHF RFID Tag                      C.C.Huang, K.W.Ku, W.D.Tu, Yuan Ze University / Taiwan</p> <p><b>WB2-3</b>                      Structural Design of Transmitter and Receiver Electrodes for Improvement of Transmission Characteristics in Human-Body Communication                      D.Muramatsu, Tokyo University of Science / Japan</p> <p><b>WB2-4</b>                      An Antenna Apertured with a Half-Semicircle and -Trapezoid in Metal Housing Wall of Electronic Equipments                      F.Koshiji, K.Koshiji, Tokyo University of Science / Japan</p>	<p><b>WC1: Thermal Management-1</b>  <b>WC1-1</b>                      Electro-Thermal Analysis and Monte Carlo Simulation for Thermal Design of Si Devices                      T.Hatakeyama<sup>1</sup>, M.Ishizuka<sup>1</sup>, S.Nakagawa<sup>1</sup>, K.Fushinobu<sup>2</sup>, <sup>1</sup>Toyama Prefectural University, <sup>2</sup>Tokyo University of Technology / Japan</p> <p><b>WC1-2</b>                      Electro-thermal scaling analysis of Si MOSFETs with device length typically larger than 100 nm                      K.Fushinobu<sup>1</sup>, T.Hatakeyama<sup>2</sup>, <sup>1</sup>Tokyo Institute of Technology, <sup>2</sup>Toyama Prefectural University / Japan</p> <p><b>WC1-3</b>                      Numerical Study of the Thermal Transfer between Adhesive and CNTs                      Y.Zhang<sup>1</sup>, S.Wang<sup>1</sup>, Z.Hu<sup>1</sup>, J.Liu<sup>1,2</sup>, <sup>1</sup>Shanghai University, <sup>2</sup>Chalmers University of Technology / China, Sweden</p>	<p><b>WD1: DMR-R-1</b>  <b>WD1-1</b>                      Mechanical and electrical reliability of electroplated copper thin film interconnections                      N.Murata, N.Saito, F.Endo, K.Tamakawa, K.Suzuki, H.Miura, Tohoku University / Japan</p> <p><b>WD1-2</b>                      Fracture Strength Characterization of Silicon Die for the Thin Electronic Modules                      N.Ota, Dai Nippon Printing / Japan</p> <p><b>WD1-3</b>                      Parametric Study on the BGA Packaging Optimization                      Y.K.Kim, J.C.Kim, J.Choi, Korea Aerospace University / Korea</p>
11:15				
11:25	<p><b>WA2: MFG-2</b>  <b>WA2-1</b>                      Development of wafer-level underfill bonding process for 3D chip stacking                      T.F.Yang, K.S.Kao, J.Y.Chang, C.J.Zhan, Industrial Technology Research Institute / Taiwan, R.O.C.</p> <p><b>WA2-2</b>                      Process Optimization for Molded Underfill to Reduce Air-trap in a System-in-Package                      Y.H.Yeh, Y.Amanoand, S.C.Hsu, H.H.Hsu, PowerTech / Taiwan R.O.C.</p> <p><b>WA2-3</b>                      Effects of Edge and Corner Bonds Underfills on Board Level Shear Strength of Lead-free Package-on-Package Devices                      H.B.Shi<sup>1,4</sup>, Y.Hara<sup>2</sup>, F.Ou<sup>3</sup>, J.C.Wu<sup>1</sup>, T.Ueda<sup>4</sup>, <sup>1</sup>Quanta Shanghai, <sup>2</sup>Panasonic Electric Works, <sup>3</sup>Henkel(China), <sup>4</sup>Wasada University / China, Japan</p>		<p><b>WC2: Thermal Management-2</b>  <b>WC2-1</b>                      Introduction to Application of Boiling Heat Transfer to High Heat Flux Cooling Technology in Power Electronics                      K.Suzuki<sup>1</sup>, K.Yuki<sup>1</sup>, M.Mochizuki<sup>2</sup>, <sup>1</sup>Tokyo University of Science, Yamaguchi, <sup>2</sup>Fujikura / Japan</p> <p><b>WC2-2</b>                      Cooling performance of a two phase (vapor-liquid) flow cooling system                      M.Chiba, NEC / Japan</p> <p><b>WC2-3</b>                      Development of High Heat Flux Cooling Jacket for Electronics Devices by using Flow Boiling                      Y.Shimoto, Y.Asada, H.Kobayashi, S.Kanazawa, M.Fukagaya, Y.Abe, M.Ouchi, M.Sato, K.Iimura, H.Ohta, Kyushu University / Japan</p>	<p><b>WD2: DMR-R-2</b>  <b>WD2-1</b>                      Reliability Designs for 40 nm ELK Flip-chip Packages with Copper Pillar Bumps                      Y.S.Lai, M.K.Shih, C.C.Lee, B.K.Appelt, C.Cheung, Advanced Semiconductor Engineering / Taiwan</p> <p><b>WD2-2</b>                      Investigation of PWB Resin Laminate and Its Relation with the Pad Cratering Resistance                      S.W.R.Lee, C.Yang, F.Song, Hong Kong University of Science &amp; Technology / China</p> <p><b>WD2-3</b>                      Determination of Thin-Sisicon Die Strength by Pin-on-Elastic-Foundation Test                      P.S.Huang, M.Y.Tsai, Chang Gung University / Taiwan R.O.C.</p>
12:40				
<b>Lunch</b>				
13:40	<p><b>Awarding Ceremony</b>                      Best Paper Awards                      Young Awards</p>			
14:10	<p><b>Keynote Speeches</b>                      Keynote Speech 1                      Keynote Speech 2                      Keynote Speech 3</p>			
17:20				
18:30	<b>Welcome Reception</b>			
20:30				

The second floor plane view



The first floor plane view



	Room A	Room B	Room C	Room D
8:30	<b>Keynote Speech</b> Keynote Speech 4 Keynote Speech 5			
10:00				
10:10	<b>TA1: Korea Session-1</b> TA1-1 TBD  TA1-2 TBD  TA1-3 TBD	<b>TB1: MFG-3</b> TB1-1 A New Consortial development approach for Advanced Electronics Packaging. B.Bader <sup>1</sup> , B.Pfahl <sup>1</sup> , H.Fu <sup>2</sup> , <sup>1</sup> NEMI, <sup>2</sup> NEMI China / U.S.A., China TB1-2 Proposal of package selection methodology for mobile product J.Asai, T.Hisada, K.Yonehara, IBM Japan / Japan TB1-3 Investigating the Effects of Area ratio and Aspect ratio Stencil Printing S.Mallik, M.Shafathullah, N.N.Ekere, University of Greenwich / UK	<b>TC1: DMR-M</b> TC1-1 An R&D Informatics Solution towards the Structural and Electronic Properties of Cu Based Intermetallics A.Chatterjee, Accelrys / Japan TC1-2 Leading Edge eMMC-BGA with Optimized Drop Reliability for Smart Phone Application W.J.Fan, E.Juang, W.Chang, S.Su, Powertech Technology / Taiwan, R.O.C. TC1-3 Package Design with Extremely Superior 2nd Reliability for SSD Application W.J.Fan, S.Su, E.Juang, W.Chang, Powertech Technology / Taiwan, R.O.C.	<b>TD1: Advanced PKG-1</b> TD1-1 System Packaging by Embedding: Technologies, Examples and Perspectives T.Loeherl <sup>1</sup> , D.Schuetze <sup>1</sup> , A.Ostmann <sup>2</sup> , R.Aschenbrenner <sup>2</sup> , <sup>1</sup> Technische Universität Berlin, <sup>2</sup> Fraunhofer IZM / Germany TD1-2 Matching wire sweep design for 3-dimensional and multi-chip module packaging during transfer molding process H.S.Chen, J.C.Hsiung, H.K.Kung, Cheng Shiu University / Taiwan TD1-3 Next Generation fcCSP Packaging B.K.Appelt, H.Chung, C.Chen, M.Hung, ASE Group / U.S.A., Taiwan
11:25				
11:35	<b>TA2: Korea Session-2</b> TA2-1 TBD  TA2-2 TBD  TA2-3 TBD	<b>TB2: MFG-4</b> Component Solderability Testing with Board Level Soldering A.Sriyarunya <sup>1</sup> , H.Tukiman <sup>2</sup> , <sup>1</sup> Spansion(Thailand), <sup>2</sup> Spansion(Kuala Lumpur) / Thailand, Malaysia TB2-2 Evaluating the effect of pad sizes on the inter-metallic layer formation and growth for Sn-Ag-Cu solders on Cu metallization P.Bernasko <sup>1</sup> , S.Mallik <sup>1</sup> , N.N.Ekere <sup>1</sup> , R.Bhatti <sup>1</sup> , G.Takyi <sup>2</sup> , <sup>1</sup> University of Greenwich, <sup>2</sup> Kwame Nkrumah University Of Science & Technology / UK, Ghana TB2-3 Board level reliability Enhancement for a QFN Packaging A.Tseng, M.Lin, B.Hu, J.W. Chen, J.M. Wan, S.Lee, Y.S.Lai, ASE(US) / U.S.A.	<b>TC2: Thermal Management-3</b> TC2-1 Heat Transfer Performance of a Micro/Mini Cooling Device using Fins-installed Porous Media for the Next Generation Power Devices K.Yuki, Tokyo University of Science, Yamaguchi / Japan TC2-2 Liquid Cooling Network System for Energy Conservation in Date Centers M.Ouchi <sup>1</sup> , Y.Abe <sup>1</sup> , M.Fukagaya <sup>2</sup> , H.Ohta <sup>3</sup> , Y. Shinmoto <sup>3</sup> , M.Sato <sup>4</sup> , K.Iimura <sup>1</sup> , <sup>1</sup> National Institute of Advanced Industrial Science and Technology, <sup>2</sup> SOHki, <sup>3</sup> Kyushu University, <sup>4</sup> Utsunomiya University / Japan TC2-3 Design of a Condensation Section for a Phase Change Cooling System A.Matsunaga, NEC / Japan	<b>TD2: Advanced PKG-2</b> TD2-1 Considerations for 2D Multi-die Fanout Wafer Level Packaging J.Hunt, Advanced Semiconductor Engineering / U.S.A. TD2-2 Behavior of resin shrinkage in wafer-level packaging using pseudo-SOC technology A.Iida, Y.Onozuka, T.Nagano, H.Yamada, K.Itaya, Toshiba / Japan TD2-3 Ultra Low Temperature PBO-Polymer for Wafer Level Packaging Applications M.Toepfer <sup>1</sup> , N.Matsui <sup>2</sup> , T.Motobe <sup>2</sup> , T.Minegishi <sup>3</sup> , M.Knaus <sup>4</sup> , T.Fischer <sup>1</sup> , V.Bader <sup>1</sup> , K.D.Lang <sup>1</sup> , <sup>1</sup> Fraunhofer IZM, <sup>2</sup> HD Microsystems Japan, <sup>3</sup> Hitachi Chemical, <sup>4</sup> HD Microsystems Germany / Germany, Japan
12:50	<b>Lunch</b>			
13:35	<b>TA3: 3D/TSV-1</b> TA3-1 Feasibility Study of a 3D IC Integration System-in-Packaging (SIP) from a 300mm Multi-Project Wafer (MPW) TA3-2 Wafer Level Packaging of Back Illuminated Image Sensors G.Humpston, M.Kriman, H.Gershtenman-Avsiyan, Tessera / U.S.A. TA3-3 Si Interposers with Thick Spiral Inductors for 3D Stacked Buck Converters K.Takemura <sup>1,2</sup> , K.Ishida <sup>3</sup> , Y.Ishii <sup>1</sup> , K.Maeda <sup>1</sup> , M.Takamiya <sup>3</sup> , T.Sakurai <sup>3</sup> , K.Baba <sup>1,2</sup> , <sup>1</sup> NEC, <sup>2</sup> Association of Super-Advanced Electronic Technologies, <sup>3</sup> The University of Tokyo / Japan TA3-4 Stacking of Known Good Rebuilt Wafers without TSV-Industrial Applications C.Val, P.Coudere, N.Boulay, 3D PLUS / France	<b>TB3: Thermal Management-4</b> TB3-1 Cooling Performance of Compact Finned Heat Sinks under Combined Natural and Forced Convection Air Flows M.Ishizuka, T.Hatakeyama, T.Fukuya, S.Nakagawa, Toyama Prefectural University / Japan TB3-2 Heat Transfer Correlation of Natural Convection in Square Enclosures with an Inner Object Y.Funawata, T.Kita, Toyama Prefectural University / Japan TB3-3 Improvement of the Thermal Management of Power LEDs by Functional 3D-Substrates with Embedded Fluidic Channels T.Leneke, Otto-von-Guericke-University Magdeburg / Germany TB3-4 Hybrid Cooling for Fujitsu Large Scale Computing System J.Wei, Fujitsu Advanced Technologies / Japan	<b>TC3: Optoelectronics-1</b> TC3-1 Application Specific LED Packaging for Automotive Forward-lighting Application F.Chen <sup>1,2</sup> , K.Wang <sup>1,2</sup> , M.Zhao <sup>1,2</sup> , D.Wu <sup>1,2</sup> , X.Luo <sup>1,2</sup> , S.Liu <sup>1,2</sup> , <sup>1</sup> Wuhan National Laboratory for Optoelectronics, <sup>2</sup> Huazhong University of Science & Technology / China TC3-2 Planar Interconnect for Solder State Lighting and Photonics R.A.Fillion, H.J.Neuhaus, C.E.Bauer, TechLead / U.S.A. TC3-3 Study on high heat proof protection thin film for Ag reflective films for LEDs H.Miyagawa, Osaka University / Japan TC3-4 A method to decap the LED devices effectively F.Jiao <sup>1,2</sup> , R.Cheng <sup>1,2</sup> , Q.Zhang <sup>1,2</sup> , S.Liu <sup>1,2</sup> , <sup>1</sup> Huazhong University of Science & Technology, <sup>2</sup> Wuhan National Laboratory for Optoelectronics / China	<b>TD3: MEMS-1, BEANS-1</b> TD3-1 <Session Invited> BEANS Project based on Multi-Disciplinary Fusion-Process Integration for Hetero-Functional Integrated Devices- M.Takeda <sup>1</sup> , A.Yusa <sup>1</sup> , H.Fujita <sup>1,2</sup> , <sup>1</sup> BEANS Project, <sup>2</sup> The University of Tokyo / Japan (50minutes) TD3-2 Silicon Microparticle Ejection Using Mist-jet Technology Y.Yokoyama <sup>1</sup> , T.Murakami <sup>1</sup> , T.Tokunaga <sup>1</sup> , T.Itoh <sup>1,2</sup> , <sup>1</sup> BEANS Project, <sup>2</sup> AIST / Japan TD3-3 Continuous high speed thin film coating process on fiber-type substrates with die coater N.Shibayama <sup>1</sup> , S.Takamatsu <sup>1</sup> , T.Itoh <sup>1,2</sup> , <sup>1</sup> BEANS Project, <sup>2</sup> AIST / Japan
15:15				
15:25	<b>TA4: 3D/TSV-2</b> TA4-1 Development of 5µm Diameter Backside Cu TSV Technology for 3D LSI Y.Ohara, Y.Watanabe, K.Lee, T.Fukushima, M.Koyanagi, T.Tanaka, Tohoku University / Japan TA4-2 Improvement of the nonlinear finite element analyses for 3D SiC using the strain measurement by the digital image correlation T.Ikeda, S.Kawahara, M.Oka, N.Miyazaki, Kyoto University TA4-3 Thermo-mechanical Stress Analysis of Through Silicon Via (TSV) by Finite Element Method D.S.Liu <sup>1</sup> , C.Y.Tu <sup>1</sup> , S.S.Yeh <sup>1</sup> , H.Y.Chen <sup>1</sup> , A.H.Liu <sup>2</sup> , <sup>1</sup> National Chung Cheng University, <sup>2</sup> ChipMOS Technologies / Taiwan R.O.C. TA4-4 Reliability characterization of 20 µm pitch microjoints assembled by a conventional reflow technique T.C.Chang, R.S.Cheng, P.C.Chang, Y.P.Hung, J.Y.Chang, T.F.Yang, S.Y.Huang, Industrial Technology Research Institute / Taiwan, R.O.C.	<b>TB4: Thermal Management-5</b> TB4-1 High Thermal Conductivity Multilayer Nanofilms for Reducing Thermal Hot Spots in LSI devices F.Kato <sup>1</sup> , K.Kikuchi <sup>1</sup> , M.Aoyagi <sup>1</sup> , T.Iwashita <sup>2</sup> , H.Fujiwara <sup>2</sup> , <sup>1</sup> National Institute of Advanced Industrial Science and Technology, <sup>2</sup> Furukawa Electric / Japan TB4-2 Thermal Simulations and Measurements – a Combined Approach for Package Characterization A.Vass-Varnai, R.Bornoff, Y.Luo, A.Poppe, G.Farkas, M.Rencz, Mentor Graphics / Hungary TB4-3 Transient Heat Conduction Simulation of the Lidless Micro PGA Processor K.Nishi, AMD Japan / Japan TB4-4 On Effective Thermal Conductivity of Electronic Wiring Board Y.Koito, T.Tomimura, Kumamoto University / Japan	<b>TC4: Optoelectronics-2</b> TC4-1 Low-loss chip assembly for low-power optical I/O on waveguide - integrated organic carrier M.Tokunari, Y.Tsukada, K.Toriyama, H.Noma, S.Nakagawa, IBM Japan / Japan TC4-2 Surface activated bonding of optical chips using Au stud bumps for optical microsensor applications T.Sato, The University of Tokyo / Japan TC4-3 Spherulites Investigative of Poly (9,9-di-nonyl-1,2,7-fluorene) (PFO) J.K.Ke, C.L.Chung, Y.J.Huang, S.L.Fu, I-Shou University / Taiwan, R.O.C. TC4-4 Photovoltaic Devices Using Electrospun Semi-conductive Polymer J.K.Ke, C.L.Chung, S.L.Fu, I-Shou University / Taiwan, R.O.C.	<b>TD4: MEMS-2, BEANS-2</b> TD4-1 Formation of Organic Crystalline Nanopillar Arrays and Their Application to Organic Photovoltaic M.Hirade <sup>1,2</sup> , H.Nakanotani <sup>1,2</sup> , M.Yahiro <sup>1,2,3</sup> , C.Adachi <sup>1,2,3</sup> , <sup>1</sup> BEANS Project, <sup>2</sup> Kyushu University, <sup>3</sup> Institute of Systems, Information Technologies and Nanotechnologies / Japan TD4-2 Formation of organic semiconducting nanodots by using vacuum deposition process and application for organic solar cells M.Nakata <sup>1,2</sup> , K.Kawano <sup>1,2</sup> , M.Yasumatsu <sup>1,3</sup> , M.Yahiro <sup>1,4</sup> , C.Adachi <sup>1,3,4</sup> , <sup>1</sup> BEANS Project, <sup>2</sup> Panasonic Electric Works, <sup>3</sup> Kyushu University, <sup>4</sup> Institute of Systems, Information Technologies and Nanotechnologies / Japan TD4-3 Preparation of porous film at micro-scale and nano-scale by modified breath figure method Y.Zheng <sup>1,3</sup> , Y.Kubowaki <sup>2</sup> , K.Miyazaki <sup>1,2</sup> , C.Adachi <sup>1,3</sup> , <sup>1</sup> BEANS Project, <sup>2</sup> Kyushu Institute of Technology, <sup>3</sup> Kyushu University / Japan TD4-4 Minimizing Etching Damages of Organic Semiconductor Layers by Neutral Beams J.Adachi <sup>1,2</sup> , T.Kubota <sup>1,3</sup> , M.Yahiro <sup>1,4</sup> , S.Sakukawa <sup>1,5</sup> , C.Adachi <sup>1,2</sup> , <sup>1</sup> BEANS Project, <sup>2</sup> Kyushu University, <sup>3</sup> The University of Tokyo, <sup>4</sup> Institute of Systems, Information Technologies and Nanotechnologies, <sup>5</sup> Tohoku University / Japan
17:05				
17:15	<b>TA5: Interconnection-1</b> TA5-1 Effect of oxygen partial pressure on sintering nanoscale silver die-attachment on copper substrate H.Zheng, Virginia Polytechnic Institute and State University / U.S.A. TA5-2 Natural Rubber-g-PVP/Silver Nanocomposites as Potential Conductive Adhesives N.H.H.Abu Bakar, J.Ismail, M.Abu Bakar, S.Yaakob, Universiti Sains Malaysia / Malaysia TA5-3 Bondability of Low Temperature Sinter Bonding Using Ag <sub>2</sub> O Pastes with Polyethylene Glycols T.Yagishita, T.Ogura, A.Hirose, Osaka University / Japan	<b>TB5: MFG-5</b> TB5-1 Eco-fabrication of noble metal nanoparticle related materials by liquid-solid reaction Y.Hayashi, Tohoku University / Japan TB5-2 Aerosol Jet Printing and Rapid Prototyping Methods for Flexible Structuring of 3D C.Goth, S.Putzo, J.Franke, University of Erlangen-Nuremberg / Germany TB5-3 Fabrication and application of Ag nanoparticles by ultrasonic process D.Ishikawa <sup>1</sup> , T.Abe <sup>1</sup> , K.Toisawa <sup>2</sup> , Y.Hayashi <sup>2</sup> , H.Takizawa <sup>2</sup> , <sup>1</sup> Hitachi Cable, <sup>2</sup> Tohoku University / Japan	<b>TC5: Automotive</b> TC5-1 Shrinkage and Sintering Behavior of a Low-Temperature Sinterable Nanosilver Die-Attach Paste T.Wang <sup>1,2</sup> , M.Zhao <sup>1</sup> , X.Chen <sup>2</sup> , G.Q.Lu <sup>1,2</sup> , K.Ngo <sup>1</sup> , S.Luo <sup>2</sup> , <sup>1</sup> Virginia Tech, <sup>2</sup> Tianjin University, <sup>3</sup> NBE Technologies / U.S.A., China TC5-2 Low-Temperature Sintering of Nanoscale Silver Paste for Attaching Large-Area Silicon Devices K.Xiao, J.Calata, G.Q.Lu, Virginia Polytechnic Institute and State University / U.S.A. TC5-3 Thermal expansion behavior of Cu <sub>6</sub> Sn <sub>5</sub> in high temperature lead-free solder joints D.Mu, J.Read, Y.F.Yang, K.Nogita, The University of Queensland / Australia	<b>TD5: MEMS-3, BEANS-3</b> TD5-1 Site-Selective Binding of Nanoparticles onto a Silicon Chip by Peptides with an Affinity for Inorganic Materials Y.Shimada <sup>1</sup> , M.Suzuki <sup>1</sup> , M.Sugiyama <sup>1,2</sup> , I.Kumagai <sup>1</sup> , M.Umetsu <sup>1,3</sup> , <sup>1</sup> BEANS Project, <sup>2</sup> The University of Tokyo, <sup>3</sup> Tohoku University / Japan TD5-2 Damage-free silicon etching using large diameter neutral beam source T.Kubota <sup>1,2</sup> , S.Ueki <sup>1</sup> , Y.Nishimori <sup>1</sup> , G.Hashiguchi <sup>1,2</sup> , M.Sugiyama <sup>1,2</sup> , S.Samukawa <sup>1,4</sup> , <sup>1</sup> BEANS Project, <sup>2</sup> The University of Tokyo, <sup>3</sup> Shizuoka University, <sup>4</sup> Tohoku University / Japan TD5-3 Embedded Nano-channel Fabricated in Fused Silica by Femtosecond Laser Irradiation and Wet Etching for Nano-scale Fluid Devices O.Nukaga <sup>1</sup> , S.Yamamoto <sup>2</sup> , K.V.Tabata <sup>1,3</sup> , T.Kubota <sup>1,4</sup> , S.Samukawa <sup>1,5</sup> , M.Sugiyama <sup>1,4</sup> , <sup>1</sup> BEANS Project, <sup>2</sup> Fujikura, <sup>3</sup> Osaka University, <sup>4</sup> The University of Tokyo, <sup>5</sup> Tohoku University / Japan
18:30				



	Room A	Room B	Room C	Room D
8:30	<p><b>FA1: Interconnection-2</b>  <b>FA1-1</b> &lt;Session Invited&gt;                      Advanced Packaging the New Decade                      E.J.Vardaman, TechSearch International / U.S.A.  <b>FA1-2</b>                      C2 assembly on gold plated pads                      H.Noma, K.Toriyama, K.Matsumoto, E.Ohno, H.Mori, Y.Otini, IBM Japan / Japan  <b>FA1-3</b>                      A study of underfill materials for reliability improvement f-PKG                      Y.Muranaka, Sanyu Rec / Japan  <b>FA1-4</b>                      Chip Package Interaction Study for Large Flip Chip Ball Grid Array with Cu/low-k on-chip interconnect                      C.Uchibori, Fujitsu Laboratories America / U.S.A.</p>	<p><b>FB1: Substrate-1</b>  <b>FB1-1</b>                      Preparation and characterization of PBS-AI<sub>2</sub>O<sub>3</sub> glass-ceramics for LTCC applications                      C.S.Mahmood<sup>1</sup>, A.Ibrahim<sup>2</sup>, M.H.Ai Rashid Megat Ahmad<sup>1</sup>, N.U.Saidin<sup>1</sup>, R.Alias<sup>2</sup>, <sup>1</sup>Malaysia Nuclear Agency, <sup>2</sup>Lingkar Teknokrat Timur / Malaysia  <b>FB1-2</b>                      Patterning of Different Materials Inside LTCC Green Sheet Using Photo Resist Film                      M.Takatou, Nihon University / Japan  <b>FB1-3</b>                      The Electroless Ni-P Plating Film Adapting for Flexible Printed Wiring Boards                      Y.Tanabe, Okuno Chemical Industries / Japan  <b>FB1-4</b>                      Surface modification of polyimide by 172 nm excimer lamp irradiation                      T.Kasahara, H.Shinohara, S.Shoji, J.Mizuno, Waseda University / Japan</p>	<p><b>FC1: MFG-6</b>  <b>FC1-1</b>                      Optimization of cyclo-olefin polymer-polydimethylsiloxane direct bonding conditions for biochemical microchips                      A.Nakahara, H.Shinohara, T.Kasahara, S.Umeda, S.Shoji, J.Mizuno, Waseda University / Japan  <b>FC1-2</b>                      Single diallylamine type copolymer additive which perfectly bottom-up fills Cu electrodeposition                      M.Takeuchi<sup>1</sup>, K.Kondo<sup>2</sup>, H.Kuri<sup>2</sup>, M.Bunya<sup>1</sup>, N.Okamoto<sup>2</sup>, T.Saito<sup>2</sup>, <sup>1</sup>Nitto Boseki, <sup>2</sup>Osaka Prefecture University / Japan  <b>FC1-3</b>                      Die pull tester for flip-chip bonding                      Y.Arai, Toray Engineering / Japan</p>	<p><b>FD1: Printed-1</b>  <b>FD1-1</b> &lt;Session Invited&gt;                      Recent Progress in Research Development of Printed TFT Technology                      T.Kamata, National Institute of Advanced Industrial Science and Technology / Japan (50 minutes)  <b>FD1-2</b> &lt;Session Invited&gt;                      Ink-jet printed Cu metal pattern cured at room temp. using UV+IR light                      J.Novak, AppliedNanotech / U.S.A. (50minutes)</p>
10:10				
10:20	<p><b>FA2: Interconnection-3</b>  <b>FA2-1</b>                      Highlight of 2011 iNEMI Technology Roadmap                      M.Tsuriya, C.Richardson, R.C.Pfahler, H.Fu, International Electronics Manufacturing Initiative / U.S.A.  <b>FA2-2</b>                      An Experimental and Numerical Investigation into the Optimal Au-Sn Bonding Temperature Conditions for Chip-On-Film Packages                      D.S.Liu<sup>1</sup>, S.S.Yeh<sup>1</sup>, C.Y.Tu<sup>1</sup>, C.L.Tsai<sup>2</sup>, A.H.Liu<sup>2</sup>, C.T.Kao<sup>3</sup>, <sup>1</sup>National Chung Cheng University, <sup>2</sup>ChipMOS Technologies, <sup>3</sup>Spatial Photonics / Taiwan R.O.C., U.S.A.  <b>FA2-3</b>                      Development of Fine-Pitch Flip Chips Assembly on Flexible Printed Circuits                      Y.Amemiya, Fujikura / Japan  <b>FA2-4</b>                      Effects of Intermetallic Compound Thickness on Solder Bump Reliability of High-density 3D Chip-to-chip Interconnect Technology                      H.C.Cheng<sup>1</sup>, Y.M.Tsai<sup>2</sup>, S.T.Lu<sup>2,3</sup>, W.H.Chen<sup>2</sup>, <sup>1</sup>Feng Chia University, <sup>2</sup>National Tsing Hua University, <sup>3</sup>ITRI / Taiwan, R.O.C.</p>	<p><b>FB2: Substrate-2</b>  <b>FB2-1</b>                      Development of Thermal Management on LSI Embedding Multi-Layer Printed Wiring Board                      S.Amakai, Dai Nippon Printing / Japan  <b>FB2-2</b>                      Cu-BaTiO<sub>3</sub>-epoxy Composites with High Permittivity for Embedded Capacitors                      S.Yu, S.Luo, R.Sun, Chinese Academy of Sciences / China  <b>FB2-3</b>                      Release Process of the Ferroelectric films and Its Applications                      E.Tomioka, The University of Tokyo / Japan  <b>FB2-4</b>                      Electrical insulator material with ultralow CTE                      H.Deguchi, Sekisui Chemical / Japan</p>	<p>(9:55)  <b>FC2: DMR-E-1</b>  <b>FC2-1</b>                      Accurate High-Frequency Substrate Modeling and Its Characterization for Multi-Gbps Serial Link I/O                      J.Kong, J.K.Beh, C.K.Lee, Intel Micronics / Malaysia  <b>FC2-2</b>                      An Optimization Study on High-Frequency Vertical Interconnect                      J.Kong, J.K.Beh, J.Wong, Intel Micronics / Malaysia  <b>FC2-3</b>                      Integrated power delivery analysis thorough power rail merging scheme                      Y.H.See Tau, Intel Microelectronics / Malaysia  <b>FC2-4</b>                      Analysis of DDR3 Full Channel Performance Impact Caused by Routing Over Package PTH Void                      J.K.Beh, Intel Micronics / Malaysia  <b>FC2-5</b>                      An In Depth Study of Gen3 High Speed Differential I/O Routing Over Active PTH with Induced Crosstalk                      C.K.Lee, J.K.Beh, F.Phun, Intel Microelectronics / Malaysia</p>	<p><b>FD2: Printed-2</b>  <b>FD2-1</b>                      High Performance of Inkjet Printhead for Printed Electronics Applications                      S.Nishi, Konicaminolta IJ Technologies / Japan  <b>FD2-2</b>                      Ag/Cu Bimetallic Nanoparticle Inks for Wiring and Bonding                      M.Nakamoto<sup>1</sup>, T.Nagaoka<sup>1</sup>, Y.Morisada<sup>1</sup>, M.Yamamoto<sup>1</sup>, Y.Kashiwagi<sup>1</sup>, M.Fukusumi<sup>1</sup>, T.Ohno<sup>1</sup>, H.Kakiuchi<sup>2</sup>, Y.Yoshida<sup>2</sup>, <sup>1</sup>Osaka Municipal Technical Research Institute, <sup>2</sup>Daiken Chemical / Japan  <b>FD2-3</b>                      Development of Transparent Conductive Films by the Use of Metal-oxide Nanoparticle Pastes                      K.Murahashi, Okuno Chemical Industries / Japan  <b>FD2-4</b>                      Manufacture of Silver Nanoparticles for Electro-conductive Application                      R.H.Jin, DIC / Japan</p>
12:00	<b>Lunch</b>			
13:00	<p><b>FA3: Interconnection-4</b>  <b>FA3-1</b>                      Solder Bumping and Processing of Flip-Chips with a Solder Bump Diameter of 30 μm or 40 μm                      T.Oppert<sup>1</sup>, R.Dohle<sup>2</sup>, F.Schubler<sup>3</sup>, J.Franke<sup>3</sup>, <sup>1</sup>Pac Tech Packaging Technologies, <sup>2</sup>Micro Systems Engineering, <sup>3</sup>University of Erlangen-Nuremberg / Germany  <b>FA3-2</b>                      Flip-chip Interconnection by Nanoparticle Deposited Cone-bumps for Heterogeneous Multi-chip-stacking Cool Systems                      F.Imura<sup>1</sup>, S.Nemoto<sup>1</sup>, F.Kato<sup>1</sup>, K.Kikuchi<sup>1</sup>, M.Suzuki<sup>1</sup>, H.Nakagawa<sup>1</sup>, M.Aoyagi<sup>1</sup>, H.Uchida<sup>1</sup>, M.Hagimoto<sup>2</sup>, M.Chacin<sup>2</sup>, T.Miyazaki<sup>2</sup>, T.Ohkawa<sup>2</sup>, R.Ikemo<sup>2</sup>, Y.Matsumoto<sup>2</sup>, <sup>1</sup>National Institute of Advanced Industrial Science and Technology, <sup>2</sup>TOPS Systems / Japan  <b>FA3-3</b>                      Observation of Micro Solder Bump Replication Phenomena by High Speed CCD                      K.Yasuda, N.Amemori, O.Takai, Nagoya University / Japan  <b>FA3-4</b>                      Technology of fluxless polymer for solder-on-pad (SoP)                      K.S.Choi, K.H.Yoo, J.T.Moon, Y.S.Eom, ETRI / Korea</p>	<p><b>FB3: MEMS-4</b>  <b>FB3-1</b>                      Bonding properties of low-temperature wafer bonding using sub-micron Au particles for MEMS hermetic packaging                      H.Ishida<sup>1</sup>, T.Ogashiwa<sup>2</sup>, S.Ishizuka<sup>3</sup>, T.Yazaki<sup>1</sup>, Y.Kanehira<sup>2</sup>, T.Nishimori<sup>2</sup>, J.Mizuno<sup>2</sup>, <sup>1</sup>SUSS MicroTec, <sup>2</sup>Tanaka Kikinokoku, <sup>3</sup>Waseda University / Japan  <b>FB3-2</b>                      Hybrid MEMS manufacturing using micro-electronics packaging technologies                      G.P.Li, M.Bachman, University of California / U.S.A.  <b>FB3-3</b>                      A Novel Biocompatible Direct Bonding Technique for Class Microdevices                      C.Wang<sup>1</sup>, Y.Xu<sup>1</sup>, J.Umeda<sup>1</sup>, Y.Dong<sup>2</sup>, K.Mawatari<sup>1</sup>, T.Kitamori<sup>1</sup>, T.Suga<sup>1</sup>, <sup>1</sup>The University of Tokyo, <sup>2</sup>Chinese Academy of Inspection and Quarantine Science / Japan, China  <b>FB3-4</b>                      Hermetic packaging for optical microsystems by Au-Au surface activated bonding in ambient air                      S.Yamamoto<sup>1</sup>, E.Higurashi<sup>1</sup>, T.Suga<sup>1</sup>, R.Sawada<sup>2</sup>, <sup>1</sup>The University of Tokyo, <sup>2</sup>Kyushu University / Japan</p>	<p><b>FC3: DMR-E-2</b>  <b>FC3-1</b>                      Identification of Interconnect Degradation using Nonlinearity Measurement Techniques                      M.Kruger<sup>1</sup>, N.F.Nissen<sup>2</sup>, H.Reichi<sup>1</sup>, K.D.Lang<sup>1</sup>, <sup>1</sup>Technische Universität Berlin, <sup>2</sup>Fraunhofer Institute for Reliability and Microintegration / Germany  <b>FC3-2</b>                      Fault Analysis of Soft Open Defects in TSVs with Electromagnetic Simulator                      M.Hashizume, The University of Tokushima / Japan  <b>FC3-3</b>                      A Dual Channel Defect Position Identification Method for Touch Panel Manufacturing Process                      H.Hamori, M.Sakawa, H.Katagiri, T.Matsui, Hiroshima University / Japan  <b>FC3-4</b>                      Estimation of Faulty Effects Caused by a Crack at an Interconnect Line in 90nm ICs                      K.Manabe, Kagawa National College of Technology / Japan</p>	<p><b>FD3: Printed-3</b>  <b>FD3-1</b>                      Material Technology of Conductive Wiring by Ink-jet Print                      M.Inada, Y.Kumashiro, H.Nakako, T.Noudou, K.Kuroda, K.Yamamoto, Hitachi Chemical / Japan  <b>FD3-2</b>                      Chisso's Printing Materials for Printed Electronics                      H.Anraku, Chisso Petrochemical / Japan  <b>FD3-3</b>                      High Performance Inkjet System S-200                      S.Iguchi, ULVAC / Japan  <b>FD3-4</b>                      The New CAD to BMP Transformation Software                      M.Oda<sup>1</sup>, K.Yamamoto<sup>2</sup>, <sup>1</sup>ULVAC, <sup>2</sup>ZUKEN / Japan</p>
14:40				
14:50	<p><b>FA4: Interconnection-5</b>  <b>FA4-1</b>                      Effect of Nickel Addition on the Interfacial Reactions between Sn-3Ag-0.5Cu Solders and Immersion Silver Surface Finishes                      I.Siti Rabiattull Aisha<sup>1</sup>, A.Ourdjini<sup>1</sup>, O.Safoura<sup>1</sup>, Y.T.Chin<sup>2</sup>, <sup>1</sup>University of Technology Malaysia, <sup>2</sup>Intel Technology / Malaysia  <b>FA4-2</b>                      Influence of UBM Layers on Electro-migration Behavior of Micro-joints using Sn-Ag Solders                      D.Toyoshima, K.Yasaka, T.Sakai, T.Akamatsu, N.Imaizumi, S.Sakuyama, K.Uenishi, Osaka University / Japan  <b>FA4-3</b>                      Computation Study on the Mechanical Properties and Electro-migration in Nanoscale Cu/Sn/Cu and Cu/Sn-Bi/Cu Solder Joints                      S.Xu, Y.C.Chan, Q.Li, S.Ismathullakhan, City University of Hong Kong / Hong Kong  <b>FA4-4</b>                      Effects of heat treatment on Kirkendall void formation at Cu/Sn-3.5Ag solder joint                      S.H.Kim, J.Yu, KAIST / Japan</p>	<p><b>FB4: MEMS-5</b>  <b>FB4-1</b>                      Development of micro-coolers using thermoelectric materials                      L.L.Liao, Industrial Technology Research Institute / Taiwan R.O.C.  <b>FB4-2</b>                      Significance of a priori prediction of encountered stresses during fabrication of smart monolithic sensor devices and packaging                      A.Matin, K.Oishi, T.Sugai, D.Akai, K.Sawada, M.Ishida, Toyohashi University of Technology / Japan  <b>FB4-3</b>                      Formation of glass nano particles using electrospinning method                      K.Uchida, N.Miki, Keio University / Japan  <b>FB4-4</b>                      Liquid encapsulation to MEMS and its application to a micropump                      K.Nakahara, Keio University / Japan</p>	<p><b>FC4: DMR-E-3</b>  <b>FC4-1</b>                      Performance Enhancements for Multi-Die DRAM Packages                      R.Crisp<sup>1</sup>, W.Zohni<sup>1</sup>, B.Haba<sup>1</sup>, D.Fann<sup>2</sup>, W.Chang<sup>2</sup>, A.Chang<sup>2</sup>, <sup>1</sup>Tessera, <sup>2</sup>PowerTech / U.S.A., Taiwan R.O.C.  <b>FC4-2</b>                      The multiple signal reflection cancellation design technique for high-speed transmission line in low-cost wire-bonding BGA packages                      T.Tsukuda, K.Hotta, S.Nisizono, Renesas Electronics / Japan  <b>FC4-3</b>                      Effect of PDN Impedance Change on Gbps Signal Propagation Using Decoupling Capacitor Embedded Interposer for 3D-Integrated LSI System                      K.Kikuchi<sup>1</sup>, K.Shimamura<sup>2</sup>, K.Takemura<sup>2</sup>, T.Gomyo<sup>2</sup>, T.Ookubo<sup>2</sup>, T.Koyama<sup>2</sup>, T.Murakami<sup>2</sup>, M.Aoyagi<sup>1</sup>, K.Otsuka<sup>3</sup>, <sup>1</sup>National Institute of Advanced Industrial Science and Technology, <sup>2</sup>Association of Super-Advanced Electronic Technologies, <sup>3</sup>Meisei University / Japan  <b>FC4-4</b>                      A New Approach for Higher Level of Power Integrity on Circuit Boards                      N.Sasaoka<sup>1</sup>, T.Ochi<sup>1</sup>, K.Otsuka<sup>2</sup>, <sup>1</sup>Nippon Kodoshi, <sup>2</sup>Meisei University / Japan</p>	<p><b>FD4: Printed-4</b>  <b>FD4-1</b>                      Printed Organic TFT for Flexible Devices                      H.Maeda, Dai Nippon Printing / Japan  <b>FD4-2</b>                      Pico liter dispenser with needle and tube for repair systems                      Y.Kato, Applied Micro Systems / Japan  <b>FD4-3</b>                      The size effect in the resistivity of the narrow printed tracks                      C.J.Kim, M.Nogi, K.Suganuma, Osaka University / Japan (16:05)                      -----                      (16:15)  <b>FD4-4</b>                      Advancement of device prototyping and fabrication techniques for sensors and flexible electronics                      J.L.Zunino, D.P.Schmidt, A.M.Petrock, B.E.Fuchs, US Army Research Development &amp; Engineering Center / U.S.A.  <b>FD4-5</b>                      Shapeable Li-ion Batteries as Substrate: Printed Electronics Reliability                      N.B.Palacios-Aguilera<sup>1</sup>, U.Balda-Irurzun<sup>3</sup>, A.Sridhar<sup>3,4</sup>, J.Bastemejer<sup>1</sup>, J.R.Mullinger<sup>1</sup>, R.Akerman<sup>3</sup>, J.Zhou<sup>2</sup>, P.J.French<sup>1</sup>, A.Bossche<sup>1</sup>, <sup>1</sup>Delft University of Technology, <sup>2</sup>Philips Research Europe, <sup>3</sup>University of Twente, <sup>4</sup>Fraunhofer ENAS / The Netherlands, Germany  <b>FD4-6</b>                      Work Function Control for Printed Pattern Using Pressure Annealing Technique                      M.Yoshida, K.Suemori, S.Uemura, S.Hoshino, N.Takada, T.Kodasa, T.Kamata, National Institute of Advanced Industrial Science and Technology / Japan (17:30)</p>
16:30				
16:40	<p><b>FA5: Interconnection-6</b>  <b>FA5-1</b>                      Improvement of brittleness of pure Zn by addition of minor elements as high temperature lead-free solder                      S.W.Park, K.S.Kim, K.Suganuma, Osaka University / Japan  <b>FA5-2</b>                      Influence of Zn Addition to Eutectic Sn-Bi Solder on Joint Reliability with Cu Electrode                      T.Akamatsu, Fujitsu Laboratories / Japan  <b>FA5-3</b>                      The Development of an Improved Tin-Zinc Solder                      K.Sweatman, T.Nozu, T.Nishimura, Nihon Superior / Japan  <b>FA5-4</b>                      Whisker Formation on Lead-Free Tin-Copper plating by Mechanical Stress                      Y.Mizuguchi, Sony / Japan</p>	<p><b>FB5: MEMS-6</b>  <b>FB5-1</b>                      Fabrication and thermal design of a two directional electrostatic comb-drive actuator for capacitive sensing                      S.C.Choi, Advanced Industrial Science and Technology / Japan  <b>FB5-2</b>                      Development and Design of Self-Breathing Micro Fuel Cells for Autonomous Portable Applications                      M.Weiland<sup>1</sup>, S.Wagner<sup>2</sup>, R.Hahn<sup>2</sup>, H.Reich<sup>1</sup>, <sup>1</sup>Technische Universität Berlin, <sup>2</sup>Fraunhofer Institute for Reliability and Microintegration / Germany  <b>FB5-3</b>                      Thik Film Resistors on Stainless as Sensing Elements for Strain Sensor Applications                      Z.Zhang<sup>1,2,3</sup>, J.Chen<sup>3</sup>, C.Liu<sup>2</sup>, G.Cao<sup>2</sup>, B.Song<sup>3</sup>, S.Liu<sup>1,2</sup>, <sup>1</sup>Wuhan National Laboratory for Optoelectronics, <sup>2</sup>Huazhong University of Science &amp; Technology, <sup>3</sup>FineMEMS / China</p>	<p><b>FC5: DMR-E-4</b>  <b>FC5-1</b>                      A High Signal-Integrity PCB-Trace Composed of Multiole Segments for VLSI Packaging in GHz Domain                      M.Yasunaga<sup>1</sup>, H.Shimada<sup>1</sup>, S.Akita<sup>1</sup>, M.Ishiguro<sup>1</sup>, I.Yoshihara<sup>2</sup>, <sup>1</sup>University of Tsukuba, <sup>2</sup>Miyazaki University / Japan  <b>FC5-2</b>                      A Novel Magnetic Shield Structure for MRAMs with Perpendicular Magnetic Anisotropy                      T.Watanabe<sup>1</sup>, T.Manako<sup>2</sup>, S.Yamamichi<sup>1</sup>, <sup>1</sup>Renesas Electronics, <sup>2</sup>NEC / Japan  <b>FC5-3</b>                      Study on Wiring Characteristics for Isostatic Conductive Paste                      K.Hashimoto<sup>1</sup>, Y.Akiyama<sup>1</sup>, K.Kohno<sup>1</sup>, K.Otsuka<sup>1</sup>, K.Suganuma<sup>2</sup>, M.Takeuchi<sup>3</sup>, <sup>1</sup>Meisei University, <sup>2</sup>Osaka University, <sup>3</sup>Uni-Science Takeuchi / Japan  <b>FC5-4</b>                      System Model Visualization Method for 3D-SIP                      H.Murata, Osaka University / Japan</p>	
18:20				

## Poster Session

- P001 Monitoring method of residual stress in a substrate during thin film processing  
K.Nakahira, H.Tago, H.Kishi, K.Suzuki, H.Miura, Tohoku University / Japan
- P002 Direct Copper Electrodeposition on High Resistivity substrates from Ethylenediamine Complex bath  
H.Arimura<sup>1,2</sup>, <sup>1</sup>Konan University, <sup>2</sup>Ishihara Chemical / Japan
- P003 All-Wet Cu-TSV Fabrication Process Using Electroless Barrier and Seed Layers  
R.Arima<sup>1</sup>, F.Inoue<sup>1</sup>, T.Yokoyama<sup>1</sup>, H.Miyake<sup>1</sup>, S.Tanaka<sup>2</sup>, T.Terui<sup>2</sup>, T.Shimizu<sup>1</sup>, S.Shingubara<sup>1</sup>, <sup>1</sup>Kansai University, <sup>2</sup>National Institute of Information and Communication Technology / Japan
- P004 Adsorption and desorption kinetic study of organic additives during copper electrodeposition by microfluidic reactor  
Y.Miyamoto, S.Hattori, N.Okamoto, T.Saito, K.Kondo, Osaka Prefecture University / Japan
- P005 Stress-induced migration of the electroplated copper thin film interconnection  
N.Saito, N.Murata, K.Tamakawa, K.Suzuki, H.Miura, Tohoku University / Japan
- P006 Modeling the process window of Bond Line Thickness for Printable Die Attach Adhesives in DRAM wBGA packaging  
C.H.Lu, W.F.Chang, Powerchip Technology / Taiwan, R.O.C.
- P007 Effects of Laser Irradiation Conditions on Bonding Characteristics of Lead-free Solder Joints by Laser Soldering  
N.Iwata, Osaka University / Japan
- P008 Reliability Evaluation for Cell Bonding in Slat-type Solar Module  
N.Atsuta, Toray Engineering / Japan
- P009 Effect of Learning Pseudo Defective Samples Generated with Characteristic Vector in Neuro Visual Inspection System  
N.Nakashima, Osaka University / Japan
- P010 Effect of thermal/humidity stress on the reliability of high power blue LEDs  
S.Zhou<sup>1</sup>, Q.Zhang<sup>2</sup>, S.Liu<sup>1,2</sup>, <sup>1</sup>Shanghai Jiao Tong University, <sup>2</sup>Huazhong University of Science & Technology / China
- P011 Simulation and Experiments on the Performance of LED under Temperature Shock  
X.Gui<sup>1,2</sup>, X.Luo<sup>1,2</sup>, S.Liu<sup>1,2</sup>, <sup>1</sup>Wuhan International Laboratory for Optoelectronics, <sup>2</sup>Huazhong University of Science & Technology / China
- P012 Wavelength Addressing Optical Interconnection Using Plug-in Alignment with A Multi-Way Optical Socket  
K.Nakama, Tokai University / Japan
- P013 Modeling and Characterization of Packing Power Delivery System with Embedded Discrete Capacitors  
H.H.Cheng<sup>1</sup>, C.W.Kuo<sup>1</sup>, P.C.Pan<sup>2</sup>, C.Y.Huang<sup>2</sup>, C.C.Wang<sup>2</sup>, C.T.Chui<sup>2</sup>, <sup>1</sup>National Sun Yat-Sen University, <sup>2</sup>Advanced Semiconductor Engineering / Taiwan
- P014 A study of Cable Failure Diagnosis Using TDR  
T.Kuwahara, Mitsubishi Electric / Japan
- P015 A Low Power Consumption QVCO Design for RF Package Effect Validating  
S.M.Wu, R.S.Huang, B.H.Yu, National University of Kaohsiung / Taiwan, R.O.C.
- P016 Novel Substrate Design Kit with Power Delivery System Resonant for RF Package Signal Integrity  
S.M.Wu, M.H.Li, C.T.Kuo, National University of Kaohsiung / Taiwan, R.O.C.
- P017 An Experimental Study of Planar-scanning Near-field to Far-field Transformation using a Dipole Antenna  
T.Watanabe<sup>1</sup>, J.Ochiai<sup>1</sup>, K.Takizawa<sup>2</sup>, H.Kurihara<sup>2</sup>, O.Hashimoto<sup>1</sup>, <sup>1</sup>Aoyama Gakuin University, <sup>2</sup>TDK-EPC / Japan
- P018 Study on Hierarchical Optimization Method in Design of System LSI  
T.Yasumura, Osaka University / Japan
- P019 Quick Changeover Approach Test Handler  
C.S.Chew, N.R.Subramanian, Intel Technology / Malaysia
- P020 Deposition of copper particles onto porous silicon: Morphological transformation from cube to spherical shape particles  
M.A.Bakar, S.Yaakob, W.L.Tan, J.Ismail, K.Ibrahim, University Sains Malaysia / Malaysia
- P021 Thermal behaviour and kinetic study of the thermal degradation of ENR-based polyelectrolytes  
W.L.Tan, M.A.Bakar, University Sains Malaysia / Malaysia
- P022 Electrical and thermal conductivities of thermally conductive adhesives composed of a multi-functional epoxy resin containing Cu fillers coated with Ag  
M.Inoue<sup>1</sup>, H.Muta<sup>1</sup>, S.Yamanaka<sup>1</sup>, J.Liu<sup>2,3</sup>, <sup>1</sup>Osaka University, <sup>2</sup>Chalmers University of Technology, <sup>3</sup>Shanghai University / Japan, Sweden, China
- P023 Using wet etching process and electroless nickel plating process to fabricate CMOS-MEMS probe chip  
K.Y.Lee, J.T.Huang, H.J.Hsu, C.K.Chen, T.C.Tsai, National Taipei University of Technology / Taiwan, R.O.C.
- P024 Electroformed Printing Pins  
H.J.Hsu, J.T.Huang, K.Y.Lee, T.C.Tsai, National Taipei University of Technology / Taiwan, R.O.C.
- P025 Three-dimensional Micro Fluidics Device Using Centrifugal Force  
T.Azeta<sup>1</sup>, Y.Ukita<sup>2</sup>, H.Nose<sup>1</sup>, S.Kondo<sup>1</sup>, Y.Utsumi<sup>1</sup>, <sup>1</sup>University of Hyogo, <sup>2</sup>Japan Advanced Institute of Science and Technology / Japan
- P026 High-sensitive enzyme-linked immunosorbent assay in three-dimensional lab-on-a-chip  
T.Azeta<sup>1</sup>, Y.Ukita<sup>2</sup>, H.Nose<sup>1</sup>, S.Kondo<sup>1</sup>, Y.Utsumi<sup>1</sup>, <sup>1</sup>University of Hyogo, <sup>2</sup>Japan Advanced Institute of Science and Technology / Japan
- P027 High-Sensitive Detection of Polychlorinated Biphenyl on Three-Dimensional Lab-on-a-CD  
H.Nose<sup>1</sup>, T.Azeta<sup>1</sup>, Y.Ukita<sup>2</sup>, S.Kondo<sup>1</sup>, C.Kataoka<sup>3</sup>, Y.Utsumi<sup>1</sup>, <sup>1</sup>University of Hyogo, <sup>2</sup>Japan Advanced Institute of Science and Technology, <sup>3</sup>Caruncle Biosciencetech / Japan
- P028 Proposal of stacked electrodes for multiplex neural interface  
M.Yoshida, University of Hyogo / Japan
- P029 A biochip using antibody-covered magnetic particles to detect the concentration and antibiotics resistance of specific bacteria  
J.T.Huang, C.C.Hsieh, G.C.Wang, National Taipei University of Technology / Taiwan, R.O.C.
- P030 Blood vessel pressure sensor measurement using the CMOS-MEMS technique  
J.T.Huang, H.R.Jan, National Taipei University of Technology / Taiwan, R.O.C.
- P031 Study and Development on the Flexible Pressure-sensor Composed of Nano composite Materials  
J.T.Huang, C.C.Cheng, S.C.Lan, National Taipei University of Technology / Taiwan, R.O.C.
- P032 Mechanical and Electrical Properties of Self-Restoring Sheet Materials for Stretchable Circuits  
N.Sekido, K.Yasuda, O.Takai, Nagoya University / Japan

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