Keynote Lecture I: Comprehensive SiP Enabling New System Integration

CP Hung, ASE Group

Chairs: Y. Orii, Nagase, S. Hayashida, ASE Group

Opening Remarks

8:45

Room C

Lunch Time

10:10

Room A

Break

10:10

WA1: Heterogeneous Integration Roadmap-1

Chairs: Y. Orii, Nagase, S. Aoki, Litec

- Ravi Vithal Mahajan, Intel / USA
  Advanced Packaging: Road Mapping the Future
  WA1-4  <Session Invited>

- Shin-Puu Jeng, TSMC / Taiwan
  Overview of the Co-Design Chapter
  WA1-3  <Session Invited>

- Wilmer R Bottoms, 3MT Solutions / USA
  Chairs: Y. Orii, Nagase, S. Aoki, Lintec
  WA1-2  <Session Invited>

- Chaired by Iwai, Terakawa, Shimomura, Suga, Takagi
  WA1-1  <Session Invited>

11:50

Room A

Lunch Time

12:40

Keynote Lecture II: Future View: technology merger strengthens evolution of semiconductor chips in the hyper-scaling AI/ML era

Chairs: A. Shigetosu, NIMS, Y. Kanechika, Tokuyama

13:40

Room A

Break

13:50

WA2: Heterogeneous Integration Roadmap-2

Chair: Y. Orii, Nagase

- Ravi Vithal Mahajan, Intel / USA
  Introduction to HIR Workshop Session
  William Chan, ASEA / USA (14:00)

- Shin-Puu Jeng, TSMC / Taiwan
  Photonics TWG update
  Anh H. Huy, University of Toronto / Canada (14:40)

- Wilmer R Bottoms, 3MT Solutions / USA
  Water Level and Panel Level Packaging
  John Hunt, ASEA / USA (15:50)

- Chaired by Iwai, Terakawa, Shimomura, Suga, Takagi
  Overview of the Co-Design Chapter
  Jose Schutte Aran, University of Illinois / USA (15:30)

- Ravi Vithal Mahajan, Intel / USA
  HIR Workshop Session Wrap-up
  Tom Salmon, SEMI / USA (15:30)

15:30

Room A

Break

15:40

WA3: Thermal Management

Chairs: H. Sakamoto, Huawei Technologies Japan, T. Hatakeyama, Toyama Prefectural University

- Ravi Vithal Mahajan, Intel / USA
  Possibility of Next Innovation of Forced Convection Cooling in High-Density Packaging Electronic Equipment by Pulsating Flow Phenomena from Knowledge of Nature
  Takanobu Fuku, Kanazawa Institute of Technology / Japan (14:00)

- Low Pressure Subcooled Boiling in a Compact Vessel for Cooling Technology
  Noriyuki Ueno, Karazima Ukyo, Risako Kubishi, Koichi Suzuki, Sayo-Onoda City Japan / Japan (15:30)

- Parameter Identification of Distributed Thermal Network for Surface Mount Power Semiconductor Packages
  Koji Nishi, Ashikaga University / Japan (15:40)

- Room Temperature Bonding of AlN Ceramic and Si Semiconductor Substrates for Improved Thermal Management
  Takashi Tamatsuki, Yuichi Kurashima, Hideki Takagi, Kazunori Nishizono, Tatsuo Amano, Eiji Higashiyama, National Institute of Advanced Industrial Science and Technology, MARUWA / Japan (16:55)

17:20

WA4: Interconnects-1

Chair: T. Mifujino, AIST, H. Ohkuma, HTO

- Satoshi Fujino, TMS / Taiwan
  Reliability Joint Material by Sn-Cu+Ni IMC Fine Particles
  Shigenobu Sekine, Hiroki Iida, Shigeru Arai, Naoya, Nagoya University / Japan (14:00)

- Shinsuke Jeng, TSMC / Taiwan
  Overview of the Co-Design Chapter
  Yasunori Sato, Chuo-Ohno, Koutarou Usada, Hidenori Ikeda, KOMORI, SERIA ENGINEERING / Japan (15:00)

- Wilmer R Bottoms, 3MT Solutions / USA
  Voidless Chip-on-Wafer Process for Functional Interposer
  Yoshikazu Satate, Tatsuya Funaki, Kiyokoshi Kobunara, Youngsuk Kim, Takayuki Ohba, Tokyo Institute of Technology, Murata Manufacturing, DISCO / Japan (15:05)

- 11:25

12:40

Room A

Break

13:40

Room A

Break
Thursday, May 13

**Keynote Lecture III: Direct Bonding: A New Paradigm Shift in Semiconductor Assembly**
Belgacom Halls, Xperi

<table>
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<th>Time</th>
<th>Room A</th>
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<td>10:10</td>
<td>TA1: NEMI Session</td>
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<td>Chairs: Y. Tomita, Intel, H. Yamada, Toshiba</td>
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<td>TA1-1 &lt;Session Invited&gt;</td>
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<td>5G Standard Reference Materials</td>
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<td>Nathan Orloff, National Institute of Standards and Technology / USA</td>
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<td>TA1-2</td>
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<td>Predictive Modelling Methodologies for Bi-Material Wafer Warpage</td>
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<td>Kung Ein Ong, Wei Kean Loi, Jinn An Wang', Arvind Parsuraman', Tatsuro Yoshiya', Kei Murayama', Makoto Tsukahara', Ron W. Kuhlemann', Haley Fu', Intel Technology / Malaysia, 'CoreTech System (Moldex3D) / Taiwan, ANSIYS / USA, Shinko Electric Industries / Japan, 'Flex / USA, 'NEMI / China</td>
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<td>TA1-3</td>
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<td>Voids Inspection Study in First-Level Interconnects for Flip Chip Packages</td>
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<td>Low Temperature 1st Level Interconnect in Packaging and its Challenges</td>
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<td>TA2: LED Technologies</td>
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<td>Chairs: K. Ichikawa, Nichia, A. Okumo, Green Planet</td>
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<td>Medical Study of 400-410nm LED and micro LED</td>
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<td>Atsushi Okumo, Green Planet / Japan</td>
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<td>TA2-2 &lt;Session Invited&gt;</td>
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<td>2MGHz High Radiation Tolerance LED &amp; UVC LED Packaging</td>
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<td>Tetsuya Onishi, Tokyo Engineering</td>
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<td>TA2-3 &lt;Session Invited&gt;</td>
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<td>Ultrafast Laser Transfer Technology</td>
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<td>Yoshikazu Arai, Toray Engineering / Japan</td>
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<td>TA2-4 &lt;Session Invited&gt;</td>
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<td>Fluidic Assembly of microLED Displays</td>
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<td>Paul Schue, d.x / USA</td>
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<td>TA3: Impact Session</td>
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<td>Chairs: J. Mizuno, Waseda University, A. Shigetou, NIMS</td>
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<td>TA3-1 &lt;Session Invited&gt;</td>
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<td>Sheet Behavior of the High Temperature Pt-Free Solder Joint with Zn-25Sn-4xPb-Cu</td>
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<td>Kwang-Lung Lin, Chi-Wei Chang, Min-Ren Chen, National Cheng Kung University / Taiwan</td>
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<td>TA3-2 &lt;Session Invited&gt;</td>
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<td>Advanced SIP Development for mmWave Antenna in Package</td>
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<td>Yung Wang, Siliconwave Precision Industries / Taiwan</td>
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<td>TA3-3 &lt;Session Invited&gt;</td>
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<td>Reliability Issues of Cu-Cu Direct Bonds</td>
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<td>Chih Chen', Kai-Cheng Shih', Po-Ning Hsu', King-Ning Tu'</td>
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<td>TA3: Advanced Packaging</td>
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<td>Chairs: T. Aoki, IBM Japan, M. Aoyagi, AIST</td>
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<td>TA3-4 &lt;Session Invited&gt;</td>
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<td>Highlighting a New Package! &quot;PhotoMoid&quot;</td>
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<td>Shuzo Akiyama, Rising Technologies / Japan</td>
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<td>TA3-5</td>
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<td>New Ag Paste Sinter Joining on Ag and Cu Surface for High Temperature Application</td>
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<td>Jinting Jiu, Yoshi Tachibana, Shunsho Koga, Ryuki Horie, Tomoki Sasaki, Nihon Metal Industry / Japan</td>
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<td>TA3-6</td>
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<td>Development of AuPd/Ag Multilayers for Wafer-Level Packaging and Residual Gas Gettering</td>
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<td>Shingo Kandy', Takahito Matsume', Yuiichi Kurashima', Hideki Takagi', Mamoru Hayashi', Eiji Higashihara', 'Tokyo University of Science, 'National Institute of Advanced Industrial Science and Technology / Japan</td>
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<td><strong>FA1: Quantum Computing / Anealner</strong>&lt;br&gt;Chair: M. Fujino&lt;br&gt;FA1-1 &lt;Session Invited&gt; &lt;br&gt;Taisuke Iwai, Fujitsu / Japan&lt;br&gt;FA1-2 &lt;Session Invited&gt; &lt;br&gt;Overview and Present Status of CMOS Annealing&lt;br&gt;Masauo Yamaoka, Hitachi / Japan&lt;br&gt;FA1-3 &lt;Session Invited&gt; &lt;br&gt;Quantum Annealer Using Superconducting Parametric Oscillators&lt;br&gt;Tsuoyoshi Yamamoto, NEC / Japan&lt;br&gt;FA1-4 &lt;Session Invited&gt; &lt;br&gt;Combinatorial Optimization Machines Using Quantum or Classical Parametric Oscillators&lt;br&gt;Hayato Goto, Toshiba / Japan</td>
<td><strong>FB1: Epoxy in Innovation</strong>&lt;br&gt;Chairs: M. Oda, Printed Electronics Network, M. Inoue, Gunma University&lt;br&gt;FB1-1 &lt;br&gt;Development of Flexible Epoxy Film with High Thermal Stability, Especially Suitable for Display and Printed Electronics Applications&lt;br&gt;Yoshiaki Komiya, Noriyasu Yamane, Kotaro Noguchi, Takayoshi Hirai, Mitsubishi Chemical / Japan&lt;br&gt;FB1-2 &lt;br&gt;Development of Stretchable Epoxy Film with High Thermal Stability, Especially Suitable for Printed Electronics Applications&lt;br&gt;Yoshiaki Komiya, Noriyasu Yamane, Kotaro Noguchi, Takayoshi Hirai, Mitsubishi Chemical / Japan&lt;br&gt;FB1-3 &lt;Session Invited&gt; &lt;br&gt;Fabrication of Stretchable Electrode with Epoxy Film using Printing Technology&lt;br&gt;Tomohiro Sekine, Kenji Uchida, Iori Tani, Noriyasu Yamane, Yoshiaki Komiya, Gunma University, Mitsubishi Chemical / Japan</td>
<td><strong>FC1: High-Speed, Wireless &amp; Components</strong>&lt;br&gt;Chairs: K. Yamada, Toshiba, K. Hasegawa, JSR&lt;br&gt;FC1-1 &lt;Session Invited&gt; &lt;br&gt;Wired and Wireless Seamless Networks for Beyond 5G&lt;br&gt;Yasunobu Nakamura, The University of Tokyo / RIKEN Center for Emergent Matter Science&lt;br&gt;FC1-2 &lt;Session Invited&gt; &lt;br&gt;Prototype Evaluation of Antennas with Artificial Magnetic Conductor for Firefighter Support Systems&lt;br&gt;Yusuke Inumata, Hitoshi Yamamoto, Masayuki Mizuno, Shizuo Tokito&lt;br&gt;FC1-3 &lt;Session Invited&gt; &lt;br&gt;Impact of Modularization on the Design Process -Case Study of Antenna Design for Smartphones-&lt;br&gt;Atsushi Maeda, Hirofumi Tatsumoto, University of Tsukuba / Japan</td>
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**Poster Session**

**From 12:40-14:40 on May 13 (P01-P07 and Sponsors)**

**P01**
**Development of Semi-Analytical Formulation for Asymmetric Warpage Prediction in Fan-out Reconstitution Process**

**P02**
**The Simulation and Detection of Copper/Polyimide Delamination of Fan-Out Package Trace Passivation Interface**
Chung-Yu Ke, Liang-Pin Chen, Silconware Precision Industries / Taiwan

**P03**
**Analysis of Stress Generated Interface of Trench MIM (Metal-Insulator-Metal) Capacitor Structure**
Eunsoo Ju, Jung-Rae Park, Cheong-Ha Jung, Kyung-Sung Kim, Electronic Package Research Center / Korea

**P04**
**Evaluation of Dispersibility of Silver Nanoparticle Ink by TEM and NMR**
Hitotsuki Shoji, Kazuo Kimura, Shin Imano / NTT Advanced Technology, NTT Interconnective Devices / Japan

**P05**
**Superhydrophobic Surface Based on Silane Coating on Silicon-Based Electrospin Nanostructures**
Chao-Liang Chung, ChunWei Cheng, Cheng-Ying Tsai, Yu-Ching Chao, Wei-Hao Chen, I-Shiu University / Taiwan

**P06**
**Effects of Moisture and Oxygen on the Morphology Evolution of Electrospinning Woven**
Shun-Sheng Li, Hsin-You Lee, Yi-Min Lin, Ch-Loong Chung, I-Shiu University / Taiwan

**P07**
**Accuracy Assessment of Quantification Method of Cellulose Nano-Fiber in Nickel Plating Film Using Image Analysis**
Makoto Isaka, Ikao Shoji, Tatsuya Kobayashi, Gunma University / Japan

**Sponsors**
Zoen<br>Fujitsu Interconnect Technologies<br>Global Net<br>Bondtech

**From 12:40-13:40 on May 14 (P08-P14 and Sponsors)**

**P08**
**Materials Informatics Technology for Using Eco-Friendly Materials**
Tomio Iwasaki, Hitachi / Japan

**P09**
**Analysis of Interfacial Conductivity Variations of Copper-Filled Electrically Conductive Adhesives During Environmental Tests**
Daisuke Otsuka, Yuki Satoh, Masahiro Inoue, Gunma University / Japan

**P10**
**Structural Control of PEDOT: PSS Thin Films Using Non-Ionic Surfactants for Enhancing Stretchability**
Kaito Ozutsu, Masahiro Inoue, Gunma University / Japan

**P11**
**Analysis of Reflection Characteristics and Radiation Efficiency on Thickness and Conductivity of Monopole Antenna Using Transparent Conductive Film**
Yuri Yamada, Fukuro Koshiji, Kohji Koshiji, Tokyo Polytechnic University, Tokyo University of Science / Japan

**P12**
**Investigation of Broadband Circularly-Polarized Unbalanced Dipole Antenna Consisting of Semicircular and Trapezoidal Elements**
Hironori Takahashi, Fukuro Koshiji, Kohji Koshiji, Tokyo Polytechnic University, Tokyo University of Science / Japan

**P13**
**Via Resonance Amplitude Control**
Vinod Arjun Haddar, Ramtek / India

**P14**
**Development of Novel BN Filler for High Thermal Conductivity Packaging Material**
Shita Dalui, Kyuschi Fujimoto, Seiji Imazumi, Naoko Fujii, Isao Masada, Yukihiro Kanekichi, Teruhiko Nawata, Masahide Ueda, Tokyo University / Japan

**Sponsors**
Nanics<br>De-Wave Technologies Japan<br>Tory<br>TDIC

*The content of the program may be subject to change without any prior notice. Please check the ICEP website for an updated version.*
On-Demand Session (Streaming Period: May 12-25)

OD1: Advanced Packaging

OD1-1
Development of Leadframe for Quad Flat No-lead Package
Mei-Lang Wu, Che-Wei Kang, National Sun Yat-sen University / Taiwan

OD1-2
Evaluation of Direct Metalization Technology Plating Properties with Excellent Material Selectivity
Takuya Komota, Tetsuji Ishida, Hisamitsu Yamamoto, T. Ueyama / Japan

OD1-3
Development of High Reliability Joint of Sn-Bi Solder for 2.3D Organic Package
Shota Miki, Koyuki Kawakami, Kei Munayama, Kiyoshi Ot, SHINKO ELECTRIC INDUSTRIES / Japan

OD1-4
Mechanical Reliability Analysis of Dual Side Molding SIP Module
Tao-Wei Liao, Wei-Hong Lai, His-Chih Shih, Da-Long Chen, David Tarry, CP Hung, Advanced Semiconductor Engineering / Taiwan

OD1-5
Copper sintered SISN Power Modules in Thermal Shock Tests
Thomas Blank, Hongpeng Zhang, Helge Wurst, Benjamin Leyer, Felix Stinner, Dai Ishikawa, Udo Geckele, Ivi Peric, Karlruhe Institute of Technology / Germany, Showa Denko Materials / Japan

OD1-6
Low Temperature Bonding with Water Level Nanocrystalline Cu Film
Wei-Lan Chiu, Chia-Wen Chiang, Hsiang-Hung Chang, Industrial Technology Research Institute / Taiwan

OD1-7
Novel Approach of Die Attach Technology for SiC Power Module by Pure Al Thin Film Bonding
Chuangrong Chen, Kazusuke Suganuma, Osaka University / Japan

OD1-8
Prediction of Fan-Out Level Packaging Warpage Using FSO-based Modified Convolutional Neural Network Model with Laplacian Filter
G. R. Huang, M. Y. Chen, K. N. Chang, National Tsing Hua University / Taiwan

OD1-9
Electromigration Improvement by Graphene on Cu Wire for Next Generation VLSI

OD1-10
A Study of Factors Affecting Process-induced Warpage Behavior of Flip Chip Package on Package
Yi-Huang Chen, Lin-Ching Tai, Yan-Cheng Liu, Hisen-Chie Cheng, Feng Chia University / Taiwan

OD2-3 (Pre-recorded video for live session presentation)
Development of Au/Pt/Ti Multilayers for Wafer-Level Packaging and Residual Gas Gettering
Shingo Kiyota, Takashi Matsumura, Yuichi Krushishita, Hirotaka Takagi, Masanori Hayase, Eiji Higashimoto, Tokyo University of Science, National Institute of Advanced Industrial Science and Technology / Japan

OD2: Quality, Modeling, and Reliability

OD2-1
Study of Material Surface Condition for Plasma Technology to Fabricate Advanced Packaging
Shinichi Haraguchi, Chi-Hao Oyama, Kotaro Usuda, Hideki Ikeda, KOMORI, SERIA ENGINEERING / Japan

OD2-2
Materials and Processing

OD2-4
Development of Novel Bevel Profile for Water-level Stacking Technology
Tatsukio Aoki, Manabu Hirasawa, Koji Inoue, Takayuki Ohb, Tokyo Institute of Technology, Global Wafers Japan / Japan

OD2-5
The Control of Material Surface Condition for Plasma Technology to Fabricate Advanced Packaging
Daisuke Hiroiwa, Yasuyuki Matokawa, Tatsushi Kaga, Takashi Karimoto, Kunihisa Hatona, Ryuichiro Kamiura, ULVAC / Japan

OD2-6
Development of Novel Bevel Profile for Water-level Stacking Technology
Tatsukio Aoki, Manabu Hirasawa, Koji Inoue, Takayuki Ohb, Tokyo Institute of Technology, Global Wafers Japan / Japan

OD2-7
Effect of Epoxy Molding Compound on Managed NAND (mNAND) Package Strain Enhancement
Joyce Chen, Vance Liu, Lewis Liu, Min Chiang, Chong Leong Gan, Hm Takiar, Micron Technology / Taiwan, Micron Technology / USA

OD2-8
Surface Modification of Tetra-needle like ZrN (Zr2N) and Characterization of Interface Between Sn1.0Ag0.5Cu and NIO Decorated TZN2O
Fupeng Hu, Keke Zhang, Hiroki Nishikawa, Osaka University / Japan, HNan University of Science and Technology / China
OD4-7 Better Warpage Control by Using Low Temperature Solder for Large FCGBA Application
Tao-Sheng Lai, Jackson Lee, Joe Huang, Yu-Po Wang, Siliconware Precision Industries / Taiwan

OD4-8 Post Mechanical Shock Test Failure Analysis on Mixed SnAgCu-BiSn BGA Solder Joints
Raiyo Aspandiar, Kei Murayama, Pambudi Gomotileke, Jagadeesh Radakrishnhan, Haele Fu, Intel / USA, Shinko Electric Industries / Japan, NEMI / China

OD4-9 Effect of 4.0 mass % Cu Addition on Microstructure and Mechanical Properties of In-48Sn Alloy
Duy Le Han1, Byungho Park1, Hiroshi Nishikawa1, Osaka University / Japan, Hanoi University of Science and Technology / Vietnam

OD4-10 High-Performance Film-Type Thermal Interface Material Containing Vertically Aligned Carbon Nanotubes
Wen-Yu Tseng, Hsin-Ming Tseng, Liang-Yi Hung, Yu-Po Wang, Siliconware Precision Industries / Taiwan

TB1-4 (Pre-recorded video for live session presentation)
Fine Pitch Bumpback and Flip Chip Joining with Sn-B Based Solders by Injection Molded Solder Technology
Yoshito Aoki1, Kanzhao Yoshida1, Koki Nakamura1, Takashi Hisada1, Kozo Fujimoto1, Shinji Fujimot1, IBM Japan, Osaka University / Japan

TB2-3 (Pre-recorded video for live session presentation)
X-ray Radiolysis-Induced-Photochemical Reaction at Interface Between Liquid and Substrate
S. Sagusa1, N. Akamatsu1, I. Sakurai1, O. Oki1, Y. Utsun1, A. Yamaguchi1, University of Hyogo, Nagoya University, Aichi Synchrotron Radiation Center / Japan

OD5: Emerging Technologies
OD5-1 Frequency Characteristics of Ultrathin and Transparent Organic Electrochemical Transistors with 1-μm-Thick Parylene Lamination
Kenjiro Ohnaka1,2, Ashiya Kakiyama1,2, Kazuki Kiyama1,2, Yoko Kase1, Naoko Kanihira1, Takaumi Uemura1,2, Toshiyuki Seki1,2, Osaka University, AIST-Osaka University / Japan

OD5-2 Electronic Band-Engineering of a Dumbbell-shaped Graphene Nanoribbon by the Application of Uniaxial Tensile Strain
Jowech Avishek Guinard1, Qingjiang Zhang1, Ken Suzuki, Hideto Miura, Tokoku University / Japan

OD5-3 Experimental Demonstration of Wireless Energy Harvesting for ZigBee Wireless Communication
Mohamed M. Mansour1, Masaya Murakami1, Shota Torigoe1, Shuya Yamamoto1, Haruichi Kanaya1, Kyushu University, SEIKO ELECTRIC / Japan, Electronics Research Institute / Egypt

WC1-2 (Pre-recorded video for live session presentation)
Battery Less Soil Moisture Sensors for Strawberry Seedlings
Haruichi Kanaya1, Osamu Takiguchi1, Shinya Shimomura1, Kyushu University, ALSENS, Fukuoka Agriculture and Forestry Research Center / Japan

WC2-2 (Pre-recorded video for live session presentation)
Development of Power Management System for RF Energy Harvester
Masaya Murakami1, Mohamed M. Mansour1, Shota Torigoe1, Shuya Yamamoto1, Haruichi Kanaya1, SEIKO ELECTRIC, Kyushu University / Japan

OD6: High-Speed, Wireless & Components
OD6-1 Silver-Seed Cu-Wirings for High-Speed Transmission
Noritmsa, Fukazawa, Wataru Fujikawa, Akinori Furutani, Shota Nishiyashi, Hiyori Hagiwara, Jun Shinakami, DIC / Japan

OD7: Optoelectronics
OD7-1 Realizing Low Optical Crosstalk, Wide Color Gamut Mini-LED Displays via Laser-Patterned Quantum Dots Color Conversion Layer
Yuanjie Cheng, Jeffery C. C. Lo, Xing Qiu, S. W. Ricky Lee, Hong Kong University of Science & Technology / Hong Kong

OD8: Power Electronics
OD8-1 Effect of Sintering Density on Thermal Reliability by Non-Pressure Sintering Die-Attach
Ryo Kato, Masato Saito, Suguru Nishida, Takeshi Mori, Junichi Mitamura, Tetsuo Sakurai, Taro Fukui, OSAKA SODA / Japan

OD8-2 Design Optimization of Copper Patterns and Location of Power Semiconductors and Terminals
Yusuke Abe1, Akira Hirao1, Binyong Hua1, Victor Parquet1, Muhammad Khairi Faiz2, Makoto Yoshida1, Tomoyuki Miyashita1, Waseda University, Fuji Electric / Japan

OD8-3 The Effect of Solid-state Nanoporous Cu Bonding for Power Device
Byungho Park1, Duy Le Han1, Mikiko Saito1, Jun Mizuno1, Hiroshi Nishikawa1, Osaka University, Waseda University / Japan, Hanoi University of Science and Technology / Vietnam

WC3-1 (Pre-recorded video for live session presentation)
Packaging of (650 V, 150 A) GaN HEMT with Low Parasitics and High Thermal Performance
Shengchang Lu, Tianyu Zhao, Rolando Burgos, Guo-Quan Lu, Virginia Tech / USA

OD9: Thermal Management
OD9-1 Relationships of Design Parameters and the Cooling Performance of the Spiral-Fin HeatSink
Shingo Onaka1, Motohiro Har1, Yoshinari Ikeda1, Victor Parquet1, Muhammad Khairi Faiz2, Makoto Yoshida1, Tomoyuki Miyashita1, Waseda University, Fuji Electric / Japan

OD9-2 Investigation of Heat Transfer in 3D Packaging for Practical-scale Quantum Annealing Machines
Wei Feng, Katsuya Kikuchi1, Mutsumo Hidaka, Hirotsuka Yamamori, Yuuki Ariga, Kazumasa Makise, Shiro Kanahara, National Institute of Advanced Industrial Science and Technology / Japan

WA3-3 (Pre-recorded video for live session presentation)
Parameter Identification of Distributed Thermal Network for Surface Mount Type Power Semiconductor Packages
Keji Nishi, Ashikaga University / Japan

WA3-4 (Pre-recorded video for live session presentation)
Post Mechanical Shock Test Failure Analysis on Mixed SnAgCu-BiSn BGA Solder Joints
Raiyo Aspandiar, Kei Murayama, Pambudi Gomotileke, Jagadeesh Radakrishnhan, Haele Fu, Intel / USA, Shinko Electric Industries / Japan, NEMI / China