

Advance Program



ICEP 2024

2024 International Conference on Electronics Packaging

April 17-20, 2024

Toyama International Conference Center
Toyama, Japan

Sponsored by IEEE EPS, IEEE EPS Japan Chapter, iMAPS and SMTA

Welcome to ICEP 2024



On behalf of the organizing committee, we take great pleasure in welcoming you to the 23rd International Conference on Electronics Packaging (ICEP) to be held at the Toyama International Conference Center from April 17 to 20, 2024.

The conference is sponsored by the Japan Institute of Electronics Packaging (JIEP) and technically co-sponsored by the IEEE Electronics Packaging Society (EPS) Japan Chapter and the International Microelectronics Assembly & Packaging Society (IMAPS).

ICEP is organized by the Japan Institute of Electronics Packaging (JIEP) and is technically co-sponsored by the IEEE Electronics Packaging Society (EPS), the IEEE EPS Society Japan Chapter, the Surface Mount Technology Association (SMTA), and the International Microelectronics Assembly & Packaging Society (IMAPS). ICEP has a long history dating back to the International Microelectronics Conference

(IMC) in 1980. The IMC sponsored by the International Society for Hybrid Microelectronics (ISHM) Japan was first held in 1980 before the establishment of JIEP (1998). It was held every second year until 1997. In 1997, it merged with the IEEE International Electronic Manufacturing Technology Symposium (IEMT) to become the annual IEMT/IMC. In 2001, it was renamed to ICEP and has been held annually ever since. Every three years since 2012, it has been organized with the IMAPS All Asia Conference (IAAC).

ICEP is a major conference in electronics packaging and brings together key global players from the electronics industry, universities, and research institutions. There will be nearly 200 oral and poster presentations. The conference will provide excellent opportunities for researchers and engineers from academic and industrial communities worldwide to address new challenges and discuss future research directions in electronics packaging. The scope of the conference covers a wide range of topics like advanced packaging, design, modeling and reliability, emerging technologies, high-speed wireless components, thermal management, interconnections, materials and processes, optoelectronics, power electronics, and so on. Further, ICEP's longtime good partners iNEMI, IMPACT, ISMP, and Pan-Pacific will introduce distinctive regional technology trends in their organized sessions. The Dry Process Society (DPS) and the Advanced Metallization Conference (ADMETA) of the Japan Society of Applied Physics (JSAP) will also host the organized sessions at ICEP2024.

Finally, I would like to thank our sponsors, committee members, session chairs, authors, and presenters for their contributions and the secretariat members for their assistance and support over the past years in planning this conference.

We sincerely hope that you will enjoy all the inspirational talks and discussions at the ICEP2024.

Tomoyuki Hatakeyama,
General Chair, ICEP2024



| | Room A | Room B | Room C | Room D | Room E |
|----------------|--|--|---|---|--|
| 9:30 | WA1: Chiplet-1 WA1-1 <Session Invited> Advanced System Integration and Packaging (ASIP) at Purdue University and the US CHIPS Act Ganesh Subbarayan, Purdue University / U.S. WA1-2 <Session Invited> Development of Next-Generation Distortion Correction Technologies for High-Precision Wafer-to-Wafer Bonding Hajime Mitsuishi, NIKON / Japan WA1-3 In-Depth Analysis of Bonding Interface at Die Level Hybrid Bonding Yuki Yoshihara ¹ , Junya Fuse ¹ , Tomoya Iwata ¹ , Shunsuke Teranishi ² , Naoko Yamamoto ² , Akihito Kawai ² , Shimpei Aoki ³ , Takashi Hare ³ , Marie Sano ^{1,4} , Fumihiro Inoue ¹ , ¹ Yokohama National University, ² Disco, ³ Toray Engineering, ⁴ Kanagawa Institute of Industrial Science and Technology / Japan WA1-4 Approach to Process Design and Prediction of CMP Process for Dielectric Organic Material and Cu Layer Assisted by Deep Learning T. Tanaka ^{1,5} , H. Nishizawa ^{1,5} , K. Tsukamoto ^{2,5} , T. Doi ^{2,5} , M. Ozono ^{3,5} , H. Kimuro ^{3,5} , H. Hirai ^{3,5} , S. Takahashi ^{4,5} , Y. Minami ^{4,5} , M. Yasuda ^{1,5} , M. Sasago ^{1,5} , T. Saito ^{1,5} , Y. Hirai ^{1,5} , ¹ Osaka Metropolitan Univ., ² Doi Laboratory, ³ AIST Kyushu, ⁴ Lithotech Japan, ⁵ RCS consortium / Japan | WB1: DPS Session WB1-1 <Session Invited> Challenges of Dry Etching for Logic Devices Masaru Izawa, Hitachi High-Tech / Japan WB1-2 <Session Invited> Development of the Waffle Wafer for Bumpless Via-Last Chip-On-Wafer(COW) Integration Shogo Okita ^{1,2} , Hajime Kato ^{1,2} , Tadashi Fukuda ¹ , Tatsuya Funaki ^{1,3} , Takayuki Ohba ¹ , ¹ Tokyo Institute of Technology Yokohama, ² Panasonic, ³ Murata Manufacturing / Japan WB1-3 <Session Invited> Possible Solutions to Challenges of Wafer Bonding Technologies for Future Electronic Devices Bumki Moon, Seungho Hahn, Wooyoung Kim, Sunje Kang, Minsoo Han, Wonyoung Choi, Donggap Shin, Nungpyo Hong, Yongin Lee, Siwoong Woo, Jungshin Lee, Kyeongbin Lim, Minwoo Rhee, Samsung Electronics / Korea WB1-4 <Session Invited> High Aspect Ratio Plasma Etching -Nano to Micron Tomihito Ohba, Lam Research / Japan | WC1: Processing WC1-1 Plating Technology for Press-Fit Pins Using Heat-Resistant IMC Joint Material Hiroaki Ikeda, Shigenobu Sekine, Napra / Japan WC1-2 Quantitative Elemental Characterization for Electroless Cu Plating Interface of Micro-via by ToF-SIMS Masahiko Nishijima ¹ , Ming-Chun Hsieh ¹ , Zhang Zheng ¹ , Rieko Okumura ¹ , Aiji Suetake ¹ , Hiroyoshi Yoshida ¹ , Chuantong Chen ¹ , Hiroaki Seto ² , Yuhei Kitahara ² , Kei Hashizume ² , Katsuaki Saganuma ^{1,4} , ¹ Osaka University, ² Okuno Chemical Industries / Japan WC1-3 Low Melting Point Multi-Alloy Solder Nanoparticles for 3DIC Ultra-High Density Packaging Xingchao Mao, Yingxia Liu, King-Ning Tu, City University of Hong Kong / Hong Kong WC1-4 Extremely Narrow Pitch Solder Bumps by Gravure Offset Printing Method Shunichi Haraguchi, Chisato Oyama, Kotarou Usuda, Yoshihiro Ohyama, Ikeda Hideki, ¹ KOMORI, ² SERIAL / Japan | WD1: Emerging Technology WD1-1 Manufacturing of PEEK-PDMS Composite Materials for Intervertebral Disc Implants Heng-ching Mie, Yu-chen Liu, Jun Mizuno, National Cheng Kung University / Taiwan WD1-2 HAX-Free Direct Laser Machining on Silicone-Based Flexible Hybrid Electronics M.-H. Chen, Y.-C. Lin, ASE / Taiwan WD1-3 Proposal of Indoor Spatial Coordinate Definition Method and Compact Detection Module Using 5th Generation Mobile Communication System and Sensors Maho Terashima, Nobuaki Hashimoto, Suwa University of Science / Japan WD1-4 Application of Battery Less Ear Tag Sensor for Goat Breeding Management Riku Yasumura ¹ , Osamu Takiguchi ² , Wakako Takagi ¹ , Syo Taira ¹ , Kyoto Fusho ¹ , Haruichi Kanaya ^{1,4} , ¹ Okinawa Prefectural Livestock and Grassland Research Center, ² ALSENS, ³ Kyushu University / Japan | WE1: Power Electronics-1 WE1-1 Solder Joint Lifetime Characterization of a SiC Power MOSFET Module Under Power Cycling He-Hong Wang ¹ , Hsien-Chie Cheng ¹ , Yan-Cheng Liu ² , Ji-Yuan Syu ² , Kuo-Shu Kao ² , Tao-Chih Chang ² , Feng Chia University, ² ITRI / Taiwan WE1-2 Joint Strength of Transient Liquid Phase Bonding Using Cu-SAC Molded Sheet Ichizo Sakamoto ¹ , Doojin Jeong ^{1,2} , Hiroaki Tatsumi ¹ , Hiroshi Nishikawa ¹ , ¹ Osaka University / Japan, ² Inha University / Korea WE1-3 Large Area Powermodule Sintering Using Porous Copper T. Blank ¹ , F. Steiner ¹ , D. Ishikawa ² , H. Nakako ² , Karlsruhe Institute of Technology / Germany, ³ Resonac / Japan WE1-4 Advancing Reliability in SiC Modules via Copper Sintering J.-Y Syu, Y-M Hsieh, Y-C Liu, S-F Hsu, C-W Chang, K-S Kao, T-C Chang, ITRI / Taiwan |
| 11:10 11:20 | Break | | | | |
| 11:20 | WA2: Chiplet-2 WA2-1 <Session Invited> High Current Density Power Supply With Substrate Embedding Technology for Chiplet Application Wang Qidong, Institute of Microelectronics of the Chinese Academy of Sciences / China WA2-2 <Session Invited> A Game-Changer for AI and HPC Substrates: A Novel Interconnect Technology Rozalia Beica, Averatek / U.S. WA2-3 Photosensitive Polyimides Compositions with Good Flexibility and Low Dielectric Property for Heterogeneous Chiplet Integration Technologies Takashi Tazaki, Takashi Yamaguchi, Taiyou Nakamura, Madoka Yamashita, ARAKAWA CHEMICAL INDUSTRIES / Japan | WB2: ISMP Session WB2-1 <Session Invited> Multiscale Thermal Challenges in Semiconductors: From Device to Packaging Eunju Jeong, Woosung Park, Sogang University / Korea WB2-2 <Session Invited> Wafer and Die Warpage Measurement for the Advanced Package Processing Joonho You, Nexensor / Korea WB2-3 <Session Invited> TBD Gu-Sung Kim, Kangnam University / Korea WB2-4 <Session Invited> Eun-Ho Lee, Sungkyunkwan University / Korea | WC2: Soldering WC2-1 Reliability Evaluations of Bonding Characteristics of Combined Pb-Free Solder Joints With Sn-Bi-Ag and Sn-Ag-Cu Jahyeon Kim ^{1,2} , Youngran Choi ¹ , Taeyeon Im ¹ , Won Bin Im ² , Min-Su Kim ¹ , Yong-Ho Ko ^{1,3*} , ¹ KITECH, ² Hanyang University, ³ University of Science and Technology / Korea WC2-2 Dissolution Behavior of Cu-0.1wt% Fe C19210 in Molten Sn & SAC305 Solders A. D. Laksono, J. T. Chou, Y. W. Yen, National Taiwan University of Science and Technology / Taiwan WC2-3 Solid/Solid Interfacial Reactions in the Sn/C7025 and Sn-3.0 wt%Ag-0.5wt%Cu/C7025 Couples J. T. Chou, A. D. Laksono, Y. W. Yen, National Taiwan University of Science and Technology / Taiwan | WD2: DMR-E WD2-1 Dendrite Formation in Power Electronics Packages During HV-H3TRB Testing Felix Steiner ¹ , Thomas Blank ¹ , Dai Ishikawa ² , Hideo Nakada ² , ¹ Karlsruhe Institute of Technology / Germany, ² Resonac / Japan WD2-2 Delamination of Metallized AlN Substrate under Thermal Cycling Test Monitored by Acoustic Emission and Digital Image Correlation Methods Minh Chu Ngo, Hiroyuki Miyazaki, Kiyoshi Hira, Tatsuki Ohji, Manabu Fukushima, AIST / Japan WD2-3 A Novel High Electric Field EMS Probe for Automotive and Consumer System Levels Hsing-Chuan Peng ¹ , Sung-Mao Wu ¹ , Ming-Cheng Chang ¹ , Jen-Chieh Liu ¹ , ¹ National University of Kaohsiung, ² Himax Technologies / Taiwan WD2-4 AI-Based Layer Assignment for Probe Card Design Hirohiko Matsuzawa ¹ , Katsuyoshi Ikuta ¹ , Yutaka Inaga ² , Katsuyuki Takayama ² , ¹ ZUKEN, ² OKI Circuit Technology / Japan | WE2: Power Electronics-2 WE2-1 Development of Thermal Characteristics Evaluation System for Multi-Chip SiC Power Modules Fupeng Huo ¹ , Chuantong Chen ¹ , Zheng Zhang ¹ , Aiji Suetake ¹ , Kazutaka Takeshita ² , Yoshiji Yamaguchi ² , Yashima Momose ² , Katsuaki Saganuma ¹ , ¹ Osaka University, ² Yamato Scientific / Japan WE2-2 Super-High Thermal Conductive Resin Sheet and Insulated Metal Baseplate Achieved by Card-house Structured BN Fillers Ayano Imai, Katsuhiko Hidaka, Toshiyuki Sawamura, Dao Phuong, Yuya Koga, Mitsubishi Chemical / Japan WE2-3 Low Thermal Resistance Joint Using Lotus-Type Cu/Solder Composite H. Tatsumi ¹ , H. Isono ² , K. Hirase ¹ , T. Ide ³ , H. Nishikawa ¹ , ¹ Osaka University, ² Shimma Electronics, ³ Lotus Thermal Solution / Japan WE2-4 Effects of the Nanoporous Cu Interlayer on the Bonding Area and Strength for Applications in Packaging of High Power Devices Wan-Hsin Lu, Chih Chen, National Yang Ming Chiao Tung University / Taiwan |
| 13:00 13:50 | Lunch | | | | |
| 13:50 14:40 | Award Ceremony | | | | |
| 14:40 14:50 | Break | | | | |
| 14:50 | Keynote Lecture I: RUMS – A New Business Scheme to Accelerate Innovation Through Integration of Front-End and Back-End of Semiconductor Technologies | | | | |
| 15:50 | Atsuyoshi Koike, Rapidus | | | | |
| 15:50 16:50 | Break / Poster Session | | | | |
| 16:50 | Keynote Lecture II: The Chiplet Challenge | | | | |
| 17:50 | Beth Keser, Zero ASIC | | | | |
| 18:00 20:00 | Welcome Reception | | | | |

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| 8:30 | | | | | |
| 9:30 | | | | | |
| 9:30 | | | | | |
| 9:40 | TA1: iNEMI Session | TB1: Advanced Packaging-1 | TC1: Sintering & Diffusion | TD1: Process-1 | TE1: Power Electronics-3 |
| | TA1-1 Electromigration in Eutectic Tin-Bismuth Alloys With Third Component Metallic Elements Prabjit Singh ¹ , L. Palmer ¹ , M. Hamid ¹ , T. Wassick ¹ , R. F. Aspandiar ² , B. Franco ¹ , H. Fu ³ , Richard Coyle ⁴ , V. Vasudevan ⁵ , A. Allen ⁶ , K. Howell ⁷ , K. Murayama ⁸ , H. Zhang ⁹ , A. Lifton ¹⁰ , T. Munson ¹¹ , S. Middleton ¹² , and M. Sarangapani ¹³ , ¹ IBM, ² Intel / U.S., ³ iNEMI / China, ⁴ Nokia, ⁵ Dell Technologies, ⁶ HP / U.S., ⁷ Nihon Superior, ⁸ Shinko Electric Industries / Japan, ⁹ Indium, ¹⁰ MacDermid Alpha Electronics Solutions, ¹¹ Foresite / U.S., ¹² Heraeus Materials Singapore / Singapore | TB1-1 Large-Scale Cu Interconnection of Organic Substrate Materials Through Electroless Plating Technology M. L. Shih ¹ , P. S. Shih ¹ , J. H. Huang ¹ , I. A. Chen ¹ , J. S. Wang ² , C. T. Ko ³ , B. R. Lin ² , K. M. Yang ² , C. H. Lin ² , A. S. Lee ² , C. R. Kao ¹ , ¹ National Taiwan University, ² Unimicron Technology / Taiwan | TC1-1 Sintered Ag Joints on ENIG Cu Substrates by an Ag-Based Complex Chuncheng Wang, Hiroaki Tatsumi, Hiroshi Nishikawa, Osaka University / Japan | TD1-1 Formation of SiO ₂ Bonding Interface using Perhydropolysilazane at Room Temperature Kai Takeuchi ¹ , Daiki Nemoto ¹ , Tadatomo Suga ² , Eiji Higurashi ¹ , Tohoku University, ² Meisei University / Japan | TE1-1 <Session Invited> Wirebond-less Packages for WBG Semiconductor Applications; Introducing Sinterconnect Technology Ali Roshanghias, Silicon Austria Labs / Austria |
| | TA1-2 Adhesion Characterization of Redistribution Layer Kor Oon Lee ¹ , Steven R. Martell ² , Tzu-Hsuan Wang ³ , Yanchun Deng ⁴ , Masahiro Tsuriya ⁵ , ¹ Intel / Malaysia, ² Nordson Electronics Solutions / U.S., ³ Unimicron Technology / Taiwan, ⁴ AT&S (Chongqing) / China, ⁵ iNEMI / Japan | TB1-2 Large Panel Fan-Out Process for High Performance Computing Device Application With Micro Ball Mount Process Power Lu, Jia Sang Weng, Fu Siang Yang, Ping Feng Yang, Jen-Kuang Fang, ASE / Taiwan | TC1-2 Interface Analysis of Direct Bonded Oxide Layers by Neutron Reflectometry Masahisa Fujino ¹ , Kenji Takahashi ¹ , Katsuya Kikuchi ¹ , Noboru Miyata ² , ¹ AIST, ² Comprehensive Research Organization for Science and Society / Japan | TD1-2 Surface Modification by Wet Treatment for Low-Temperature Cu/SiO ₂ Hybrid Bonding Yu-An Chen ¹ , Jia-Juen Ong ¹ , Wei-Lan Chiu ² , Hsiang-Hung Chang ² , Chih-Chen ¹ , ¹ National Yang Ming Chiao Tung University, ² ITRI / Taiwan | TE1-2 Bonding Parameter-Dependent Microstructural and Mechanical Capabilities of Ag Porous Sheet Bonding Yeh-Ri Kim ^{1,2} , Eunjin Jo ^{1,3} , Byeong-Kwon Ju ² , Yoongul Lee ⁴ , Jaewp Kim ⁴ , Kijoong Ahn ⁴ , Dongjin Kim ¹ , ¹ KITECH, ² Korea University, ³ Andong National University, ⁴ SP Semiconductor / Korea |
| | TA1-3 High Temperature Hygroscopic Swelling of Polymeric Materials in Electronic Packaging Ian Chin ¹ , Wei Keat Loh ¹ , Mohd Zulkify Bin Abdullah ² , Masahiro Tsuriya ³ , ¹ Intel Microelectronics, ² Universiti Sains Malaysia / Malaysia, ³ iNEMI / Japan | TB1-3 TGV Drilling by Ultrafast Laser With Hollow Beam Optics Hsiang-Chen Hsu ¹ , Shih-Jeh Wu ¹ , Wei-Yu Lu ¹ , Schiang-Jing Hon ² , I-Shou University, ³ E&R Engineering / Taiwan | TC1-3 Lead-Free Diffusion Bonding for High Temperature Using ZnAl Eutectic Alloy Tori Ikeda ^{1*} , Tomoki Kurakazu ¹ , Masaaki Koganezumi ¹ , Tetsuro Nishimura ² , ¹ Kagoshima University, ² Nihon Superior / Japan | TD1-3 Optimization of Ag Thin Film Thickness With a Capping Layer for Ag-Ag Surface Activated Bonding Yuanhan Cai, Kai Takeuchi, Miyuki Uomoto, Takehito Shimatsu, Eiji Higurashi, Tohoku University / Japan | TE1-3 Solid-State Bonding With SAC305 Sheets for Direct Cooling Eunjin Jo ^{1,2} , Yeh-Ri Kim ^{1,3} , Young-Bae Park ² , Dongjin Kim ¹ , ¹ KITECH, ² Andong National University, ³ Korea University / Korea |
| | TA1-4 Low Temperature Material Discovery and Readiness for 1 st Level Interconnect in Semiconductor Packaging Sze Pei Lim ¹ , Masahiro Tsuriya ² , Shripad Gokhale ³ , Russell Kasberg ⁴ , ¹ Indium / Malaysia, ² iNEMI / Japan, ³ Intel, ⁴ IBM / U.S. | TB1-4 Addressing Advanced IC Substrate Deformation and Pattern Distortion Using an Extremely Large Exposure Field Fine-Resolution Lithography System John Chang, Corey Shay, James Webb, Timothy Chang, Onto Innovation / U.S. | TC1-4 Direct Observation of Void Nucleation and Growth in a 2-μm-Wide Cu Redistribution Line During In Situ Electromigration Chien-Lung Liang ¹ , Yung-Sheng Lin ² , Min-Yan Tsai ² , Meng-Chun Chiu ¹ , Shan-Bo Wang ² , Kwang-Lung Lin ³ , ¹ National Taiwan University of Science and Technology, ² ASE Group, ³ National Cheng Kung University / Taiwan | TD1-4 Direct Bonding of Germanium and Diamond Substrates by Reduction Process Yuki Minowa ^{1,2} , Takashi Matsumae ² , Masanori Hayase ¹ , Yuichi Kurashima ² , Hideki Takagi ¹ , ¹ Tokyo University of Science, ² AIST / Japan | TE1-4 Thermo-Mechanical Reliability of Ag Porous Sheet Bonding Structures Dongjin Kim ^{1,3} , Yeh-Ri Kim ^{1,2} , Eunjin Jo ^{1,3} , Seoah Kim ^{1,4} , Jiyong Park ¹ , Yong-Ho Ko ² , ¹ KITECH, ² Korea University, ³ Andong National University, ⁴ Kyonggi University / Korea |
| 11:20 | | | | | |
| 11:30 | | | | | |
| 11:30 | TA2: IMPACT Session | TB2: Advanced Packaging-2 | TC2: Cu-related | TD2: Process-2 | TE2: DMR-M-1 |
| | TA2-1 <Session Invited> Advanced IC Substrates in the Next Decade Yu-Huei Chen, Unimicron / Taiwan | TB2-1 Polymer Hybrid Bonding Using Copper-Copper Bonding Materials and Thermosetting Resins for Copper-Copper Bonding at 200–250°C Hirokatsu Sakamoto, Tadashi Teranishi, Rumi Nagai, Ryo Itaya, Akihiko Happoya, Daicel / Japan | TC2-1 The Enhancement in the Reliability of Nanotwinned Cu Redistribution Lines Passivated With Immersion Sn and Ag Yu-Wen Hung, Yi-Quan Lin, Chih Chen, National Yang Ming Chiao Tung University / Taiwan | TD2-1 Verification of Resolution Considering Process Margins for the 10 μm Pitch Patterning of Organic Substrates Naoya Sohara, Yu Abe, Ryotaro Takahashi, Hirosuke Takamatsu, USHIO / Japan | TE2-1 Investigation of Wafer Warpage Evolution Based on Fan-out Chip-first Process Hung-Chun Yang, Wei-Hong Lai, Chin-Li Kao, Chen-Chao Wang Chih-Pin Hung, ASE / Taiwan |
| | TA2-2 <Session Invited> Improvement of Microelectronic Joint Reliability Through the Optimization of IMC Nanomechanical Properties Jenn-Ming Song, National Chung Hsing University / Taiwan | TB2-2 Carbon/Nitrogen Dual-Doped in <100> P-Type Silicon Hard Mask for Wafer Thinning and Dishing Less for Hybrid Bonding Yen-Shu Chen ¹ , Tzu Wei Chiu ² , Hua-Tai Fan ¹ , Yu-Chien Ko ¹ , Chu Chi Chen ³ , Fu-Hsiang Ko ¹ , ¹ National Yang Ming Chiao Tung University, ² Seriphy Technology, ³ Taiwan Semiconductor Research Institute / Taiwan | TC2-2 Wafer Backside Fine 0.4 μm Pitch Copper Interconnects For Multi Stacked Device Integration Takuhiro Miyawaki, Masaki Haneda, Yukari Fukumizu, Akihisa Sakamoto, Kan Shimizu, Yoshihisa Kagawa Hayato Iwamoto, Sony Semiconductor Solutions / Japan | TD2-2 Control of the Surface Modification of Epoxy Resin by Photoreduction and Photo-Redox Method Using Vacuum Ultraviolet Light S. Endo ^{1,2} , A. Shimizu ¹ , K. Fukada ³ , ¹ Ushio, ² Ozawa Prefecture University, ³ Shibaura Machine / Japan | TE2-2 Solder Joint Reliability Comparison Under JEDEC Drop and System-Like Drop Test Conditions Meng-Kai Shih ¹ , Zih-Jun Ke ¹ , Chun-Yu Yen ² , Wei-Hong Lai ² , Chin-Li Kao ² , ¹ National Formosa University, ² ASE / Taiwan |
| | TA2-3 <Session Invited> From Big Data to Smart, Robust and Reliable Simulation Technology K. N. Chiang, National Tsing Hua University / Taiwan | TB2-3 Characterization of Surface Activation on Nanotwinned Copper and SiCN by Using Ar and N ₂ Plasma Rou-Jun Lee ¹ , Pin-Syuan He ¹ , Wei-Lan Chiu ² , Hsiang-Hung Chang ² , Wei-You Hsu ¹ , Chih Chen ¹ , ¹ National Yang Ming Chiao Tung University, ² ITRI / Taiwan | TC2-3 Cu Nanoparticle Sintering by Electrical Current Albert T. Wu ¹ , Tzu-Hao Sheng ¹ , Chang-Meng Wang ² , Watson Tseng ³ , ¹ National Central University, ² Shenmao Technology / Taiwan | TD2-3 Adhesion Characteristics of Direct Sputtered Cu Seed Layer on Cyclo-Olefin Polymer A. Shimizu ¹ , K. Fukada ² , ¹ Ushio, ² Shibaura Machine / Japan | TE2-3 The Effect of Electromigration and Stress Migration on NT-Cu RDLS Passivated With Titanium Dioxide Yi-Quan Lin, Ching-Yu Tang, Yu-Wen Hung, You-Yi Lin, Chih Chen, National Yang Ming Chiao Tung University / Taiwan |
| | TA2-4 <Session Invited> High Performance 3D Heterogeneous Integration Package YuPo Wang, SPIL / Taiwan | | TC2-4 Low-Temperature Cu-Cu bonding Using Nanocrystalline Grains Chen-Ning Li ¹ , Wei-Lan Chiu ² , Hsiang-Hung Chang ² , Chih Chen ¹ , ¹ National Yang Ming Chiao Tung University, ² ITRI / Taiwan | TD2-4 Additive Manufacturing of Helix Antennas with Aerosol-Jet and Laser Direct Structuring Markus Ankenbrand, David Panusch, Niklas Piechulek, Gerald Gold, Klaus Helmreich, Jörg Franke, Friedrich-Alexander-Universität Erlangen-Nürnberg Erlangen / Germany | |
| 13:10 | | | | | |
| 13:10 | | | | | |
| 14:00 | | | | | |
| | | | Lunch Time | | |

Contact Information

Please contact for any inquiries about:

Registration

ICEP2024 Registration Office
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Conference Programs

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| | Room A | Room B | Room C | Room D | Room E |
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| 14:00 | TA3: ADTETA/BEOL Session TA3-1 <Session Invited> The Growing Importance of Wet Processing in 3D Semiconductor Fabrication Tomohisa Sato, SCREEN Semiconductor Solutions / Japan TA3-2 <Session Invited> Superconducting Nb Interconnects for Cryo-CMOS Application Hideaki Numata ¹ , Noriyuki Iguchi ¹ , Masamitsu Tanaka ² , Koichiro Okamoto ¹ , Sadahiko Miura ¹ , Ken Uchida ³ , Hiroki Ishikuro ¹ , Toshitsugu Sakamoto ¹ , Munehiro Tada ¹ , NamBridge Semiconductor, Nagoya University, The University of Tokyo, Keio University / Japan TA3-3 <Session Invited> Development of Large-Scale Connections of Wafer-Level Face-to-Back Structure with Cu-Cu Hybrid Bonding Yukako Ikegami, Masaki Haneda, Kengo Kotoo, Kan Shimizu, Yoshihisa Kagawa, Hayato Iwamoto, Sony Semiconductor Solutions / Japan TA3-4 <Session Invited> TBD | TB3: Advanced Packaging-3 TB3-1 Bare Cu Bonding by Cu-Ag Composite Paste in Low Temperature Low Pressure Air Sintering Chuantong Chen ¹ , Takuuya Sekiguchi ² , Katsuaki Suganuma ¹ , Osaka University, TOPPAN Edge / Japan TB3-2 Thermal Stability of Bi in Sn-Cu Based High Strength Pb-Free Solder Alloys Jiye Zhou ¹ , Xin F. Tan ^{1,2} , Stuart D. McDonald ¹ , Keith Sweatman ^{1,3} , Tetsuya Akaiwa ³ , Kazuhiro Nogita ¹ , The University of Queensland / Australia, Kyushu University, Nihon Superior / Japan TB3-3 Selective Cu Surface Activation for Cu-Sn Thermocompression Microbump Bonding Without Flux Deposition Ryo Negishi, Satoshi Saito, Itsuro Tomatsu, MEC / Japan TB3-4 Cu/SnAg Pillar Bump Joints on Ni-less Surface Finish in Laser Assisted Bonding (LAB) Sang Eun Han ^{1,2} , Seonghui Han ¹ , Taeyoung Lee ³ , Hoo-Jeong Lee ² , Schoon Yoo ¹ , KITECH, Sungkyunkwan University, Tech University of Korea / Korea | TC3: Pan Pacific Session TC3-1 <Session Invited> Technical Implementation of DNA Data-Storage Kirsten Weide-Zaage, University of Hannover / Germany TC3-2 <Session Invited> Chiplets Turn 65! Charles E. Bauer, TechLead / U.S. TC3-3 <Session Invited> TBD TC3-4 <Session Invited> TBD | TD3: Process-3 TD3-1 Template Stripping Process Combined With Polyimide and SiO ₂ /Si Templates for Obtaining Smooth Au Surfaces Shogo Koseki ¹ , Mika Ogino ¹ , Kai Takeuchi ¹ , Le Hac Huong Thu ² , Takashi Matsumae ² , Hideki Takagi ² , Yuichi Kurashima ³ , Takahiro Tsuda ³ , Tomoaki Tokuhisa ³ , Toshiyazu Shimizu ³ , Eiji Higurashi ¹ , Tohoku University, AIST, Kanto Chemical / Japan TD3-2 Photonic Curing and Soldering to Printed Silver for Enhanced Attachment and Joint Quality John Ukwuoma ¹ , Harry Chou ¹ , Ara Parsekian ¹ , Ian Rawson ¹ , Dave Pope ² , Vahid Akhavan, PulseForge, NovaCentrix / U.S. TD3-3 Improvement of the Bonding Reliability of Electroless Thin-Film Ni/AU Plating Using Co Activation Kana Kawasaki, Ryuuji Saito, Toshimitsu Nagao, Kenji Hara, Okuno Chemical Industries / Japan TD3-4 An Investigation of Cu/Ni/Ga Interfacial Reaction With Different Ni/Ga Ratio Tzu-hsuan Huang, Jian-wei Huang, Zhiheng Lin, Shih-kang Lin, National Cheng Kung University / Taiwan | TE3: DMR-M-2 TE3-1 Temperature Dependence Mechanical Characteristics of Ag Alloy Wire and Corresponding Influence in Wire Bonding Procedure D.-S. Liu ¹ , P.-C. Wen ¹ , Z.-W. Zhuang ¹ , Y. C. Chao ² , P.-C. Huang ¹ , National Chung Cheng University, National Chiayi University / Taiwan TE3-2 Simulation Study of Pore Structure Evolution and Its Influences on the Properties of Sintered Silver Han Jiang ¹ , Shuibiao Liang ² , and Changqing Liu ³ , Anhui University, Hefei University of Technology / China, Loughborough University / U.K. TE3-3 Effect of Phase Evolution on Inhomogeneous Deformation and Fracture Behavior in Sn-Bi Solder Alloys Shuibiao Liang ¹ , Han Jiang ^{2,3} , Zhihong Zhong ¹ , Hefei University of Technology / China, Anhui University / China, Loughborough University / U.K. TE3-4 Understanding the Factors Contributing to Solder Paste Dot Inconsistencies in Time-Pressure Dispensing Fred Fuliang Le ¹ , Haibin Chen ² , Nexpria Hong Kong / Hong Kong, University of Science & Technology (Guangzhou) / China |
| 15:40 | | | Break | | |
| 15:40 16:00 | | | | | |
| 16:00 | TA4: Advances in Chiplet Packaging hosted by IMAPS TA4-1 <Session Invited> Advancements in Die-to-Wafer Hybrid Bonding for 3D Chiplets Chris Scanlan, Besi / Switzerland TA4-2 <Session Invited> Opportunities and Challenges in Building the Chiplet Ecosystem Jan E Vardaman, TechSearch International / U.S. TA4-3 <Session Invited> A Holistic Approach for Chiplet Assembly Tanja Braun, Fraunhofer IZM / Germany TA4-4 <Session Invited> Packaging Advancements for Heterogeneous and 3D Integration Vikas Gupta, ASE Group / United States | TB4: Advanced Packaging-4 TB4-1 Reliability Investigation of Cobalt and Copper Damascene Interconnects with Capped Graphene Y. T. Hung ¹ , J. Z. Huang ^{1,2} , H. H. Chang ¹ , K. P. Huang ¹ , O. H. Lee ¹ , H. C. Chien ¹ , C. H. Wang ¹ , W. C. Lo ¹ , C. I. Wu ^{1,2} , K. N. Chen ^{1,3} , Industrial Technology Research Institute, National Taiwan University, National Yang Ming Chiau Tung University / Taiwan TB4-2 Laser Applications in Power Management IC Packaging Wei-Yu Lu ¹ , Shih-Jeh Wu ¹ , Hsiang-Chen Hsu ¹ , Wen-Fei Lin ² , I-Shou University, E&R Engineering / Taiwan TB4-3 Warpage Control Technology Using 300mm Waffle Wafer Evaluated by High-Precision FEM Analysis Wataru Doi ^{1,2} , Tatsuya Funaki ^{1,2} , Kyosuke Koinobori ^{2,3} , Koji Miyamoto ^{2,4} , Hajime Kato ^{2,5} , Shogo Okita ^{2,5} , Takayuki Ohba ² , Murata Manufacturing, Tokyo Institute of Technology, DISCO, NAGASE, Panasonic Connect / Japan TB4-4 Formation of 10 μm Pitch Sharp Micro-bump by Fusion Process of Imprint and Photolithography Kiyokazu Ito, Yusuke Takeuchi, Daisuke Sakurai, Panasonic Holdings / Japan | TC4: Debonding TC4-1 <Session Invited> Temporary Bonding Method Using Inorganic Film for Debonding Yoshie Matsumoto, Lantechnical Service / Japan TC4-2 <Session Invited> Biomimetic Bonding and Debonding Technology Naoe Hosoda, National Institute for Materials Science / Japan TC4-3 <Session Invited> Feasibility of Solid-State Debonding of Cu-Cu Interface by Cooling Akitsu Shigetou, National Institute for Materials Science / Japan TC4-4 <Session Invited> TBD | TD4: Process-4 TD4-1 Cathodoluminescence Characterization of Diamond Polished by Gas Cluster Ion Beam Junsha Wang ¹ , Hideaki Yamada ² , Yoshiaki Mokuno ² , Tadatomo Suga ¹ , Meisei University, AIST / Japan TD4-2 Development Status of Laser-Induced Peel-off Transfer Technology for Advanced Semiconductors Satoshi Enzaki, Yuichiro Tsuda, Koichi Kazama, Tatsuya Okada, Yoshiyuki Arai, Toray Engineering / Japan TD4-3 Investigation of Blind Microvias Bonding Force: A Field Study Hung-Kun Chen, Shun-Jen Chan, Yu-Cheng Pai, Carl Chen, Yu-Po Wang, SPIL / Taiwan TD4-4 Study of Galvanic Effect Factor and Mechanism for Ni/Au Plated Substrate MJ He, Rick Ye, Yu Cheng Pai, Yu-Po Wang, SPIL / Taiwan | TE4: DMR-M-3 TE4-1 Prediction of High-Speed Oscillator Frequency Drift Under Package Level Reliability Tests Ming-Han Wang, Christine Xiao, Chien Liu, Hassan Hashemi, Synaptics / Taiwan TE4-2 Correction Factors to Biaxial Bending Strength of Thin Silicon Die in the Ball-on-Ring Test Due to Contact Nonlinearity Effect P. J. Hsieh, T. C. Kuo, M. Y. Tsai, Chang Gung University / Taiwan TE4-3 Mold Flow Strategy Improvement for Power Module Structure Bing-Yuan Huang, Ying-Xu Lu, Hung-Hsien Huang, Chen-Chao Wang, and Chih-Pin Hung, ASE / Taiwan TE4-4 Power Device Structure Optimization by Sequential Approximation Optimization Method Tomoki Takao, Yoshiharu Iwata, Hidefumi Wakamatsu, Osaka University / Japan |
| 17:40 | | | Poster & Sponsors Exhibition Party | | |
| 17:40 19:10 | | | | | |

■Registration

Registration Information

Early-Bird Registration Due: March 27th, 2024

Pre-Registration Due: April 15th, 2024

On-site registration is available from April 17th, 2024.

Registration Fees

Fees are shown as "Early-Bird [On-Site]". All registrations include complimentary conference proceedings and attendance to live sessions and receptions.

Members of JIEP/IEEE/iMAPS: ¥45,000 [¥52,000]

Members of Partner Organizations: ¥50,000 [¥57,000]

Non-Members: ¥60,000 [¥67,000]

Students: ¥20,000 [¥23,000]

Additional Welcome Reception Ticket: ¥10,000 / person

Partner Organizations: Japan Electronics and Information Technology Industries Association / Japan Electronics Packaging and Circuits Association / Japan Jisso Technology Transfer Association (to be confirmed) Japan Society of Powder and Powder Metallurgy / Japan Welding Society / Optoelectronics Industry and Technology Development Association Smart Processing Society for Materials, Environment & Energy / The Electrochemical Society of Japan The Institute of Electrical Engineers of Japan / The Institute of Electronics, Information and Communication Engineers / The Japan Society for Precision Engineering The Japan Society of Applied Physics / The Society of Chemical Engineers, Japan / The Surface Finishing Society of Japan

| | Room A | Room B | Room C | Room D | Room E |
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| 8:30 | | | Keynote IV: Inflection Point on Next Package Solution Sa-Yoon Kang, President of KMEPS | | |
| 9:30 | | | Break | | |
| 9:40 | FA1: Glass PKG-1 FA1-1 <Session Invited> Markets, Opportunities, and Challenges with Glass Package Applications: Today +10 Jan E Vardaman, TechSearch International / U.S. FA1-2 <Session Invited> Glass Material and TGV Formation Technologies Yoichiro Sato, AGC / Japan FA1-3 <Session Invited> The Role of Structured Glass Substrates for Heterogeneous Integration of Electronics Martin Letz, Schott / Germany FA1-4 <Session Invited> High Volume Glass Microhole Formation by LIDE Hiroyuki Kamide, LPKF Laser & Electronics / Japan | FB1: Advanced Packaging-5 FB1-1 Approach With Large Panel Fan-Out Technology Jen-Kuang Fang, Ping-Feng Yang, Sheng Feng-Huang, Ping-Ching Shen, ASE Technology / Taiwan FB1-2 2.5D/3D Chiplets Approach to Advanced Packaging Solutions M. Miura, H. Oshida, T. Kubota, S. Hayashiguchi Y. Kajikawa, TOWA / Japan FB1-3 Semiconductor Fan-Out Polymer Adhesion on Physical Vapor Deposited Copper Coupling Temperature & Humidity Effects Nien-Chun Lin, Hsin-Chih Shih, Ching-ITSai, Chin-Li Kao, Chen-Chao Wang, C.P.Hung, ASE / Taiwan FB1-4 Advanced Fan-Out Embedded Chip Process Integration for 3D Application Chih-Cheng Hsiao, Chao-Kai Hsu, Ching-Iang Li, Yung-Sheng Chang, Ming-Ji Dai, Feng-Hsiang Lo, Chin-Hung Wang, Wei-Chung Lo, ITRI / Taiwan | FC1: Intermetallic Compounds-1 FC1-1 Study of Wetting and Interfacial Reactivity in Au/Liquid in System for Photonic Packaging Applications O. Belhaddad ^{1,2} , O. Maillart ¹ , F. Hodaj ² , LETI ² , University Grenoble Alpes / France FC1-2 Investigation of Additional Elements in Sn-Bi Based Low-Temperature Solder Fu Ling Chang, Yan Chen Chen, Yu Hsin Lin, Pei Kang Wu, C. Robert Kao, National Taiwan University / Taiwan FC1-3 A Thermodynamic Modeling Approach for the Design and Development of Low-Temperature Solder Alloys Y. C. Chen, F. L. Chang, M. C. Chuang, Y. C. Su, C. R. Kao, National Taiwan University / Taiwan FC1-4 Temperature-Dependent Electrical Resistivity In Sn-Bi Alloys Xin F. Tan ^{1,2} , Qichao Hao ¹ , Jiey Zhou ¹ , Stuart D. McDonald ¹ , Keith Sweatman ^{1,3} , Kazuhiro Nogita ¹ , The University of Queensland / Australia, ² Kyushu University, ³ Nihon Superior / Japan | FD1: Thermal Management-1 FD1-1 Issues of Using Unsaturated Heating Time for Transient Thermal Measurement Part 2 Tomoaki Hara, Shuhei Fukunaga ² , Tsuyoshi Funaki ² , Siemens, Osaka University / Japan FD1-2 Influence of Heat Losses on Measurement of Thermal Contact Resistance U. Akram ¹ , T. Hatakeyama ¹ , R. Kibushi ¹ , Toyama Prefectural University / Japan FD1-3 Non-destructive Orientation Mapping With X-Ray Diffraction for Electronic Packaging Applications Y. Hayashi, J. Kim, M. Yabashi, RIKEN SPring-8 Center / Japan | FE1: Optoelectronics-1 FE1-1 Alignment and Transfer of Silver Nanowire Arrays Onto Unconventional Substrates for Optoelectronic Devices via Dielectrophoresis Force Yen-Shuo Chen ¹ , Shun-Yu Liu ¹ , Ching-Chang Lin ² , Hua-Tai Fan ¹ , Yu-Chien Ko ¹ , Chun-Chi Chen ³ , Fu-Hsiang Ko ¹ , National Yang Ming Chiao Tung University / Taiwan, ² The University of Tokyo / Japan, ³ Taiwan Semiconductor Research Institute / Taiwan FE1-2 Development of an Optical Pin Formation Process for Low-Profile Optical Modules Shuhei Sudo, Osamu Hirata, Kazuhiro Shiba, Michiyo Kubo, Shigeru Kobayashi, Keizo Kinoshita, Takahiro Nakamura, Koichi Takemura, Kazuhiko Kurata, AIO Core / Japan FE1-3 Stability Study of Quantum Dot Color Converted Mini/Micro-LED Displays Yuanjie Cheng ¹ , Jeffery C. C. Lo ¹ , Xing Qiu ¹ , Hua Xu ¹ , Mian Tao ¹ , S. W. Ricky Lee ^{1,2} , Hong Kong University of Science & Technology / Hong Kong, Hong Kong University of Science & Technology / China FE1-4 Design and Evaluation of Chip Terahertz Wave Power Combiner for Beyond 5G/6G Y. Kamiura, H. Ssali, H. Agemori, R. Doi, M. Che, Y. Mikami, K. Kato, Kyushu University / Japan |
| 11:20 | | | Break | | |
| 11:30 | FA2: Glass PKG-2 FA2-1 <Session Invited> Challenge of Metalization on Glass Core and Through-Glass Vias Tomoki Shinohara, Toshio Honda, Toshiyuki Fujiwara, Atotech Japan / Japan FA2-2 Development of the Integrated Passive Device for Sub6 Band Using 100 µm Thickness Glass Substrate Tomoyuki Ishii, Masashi Sawadaishi, Noriko Kano, Masao Ishibashi, Takashi Kizu, TOPPAN Holdings / Japan FA2-3 Physical and Thermal Characteristics of the Advanced Package with Glass Core Substrate S. Mitarai, K. Adachi, T. Igarashi, K. Seki, N. Kakoyama, Y. Tanaka, S. Oka, M. Nakazawa, H. Iwamoto, Sony Semiconductor Solutions / Japan FA2-4 <Session Invited> Glass Package Trends & Core Technologies Tetsuya Onishi, Grand Joint Technology / Hong Kong | FB2: Advanced Packaging-6 FB2-1 The Strategy on Artificial Neural Networks for Predicting Advanced Packaging Reliability Under Small Dataset Qinghua Su ¹ , Cadmus Yuan ² , K.N. Chiang ¹ , ¹ National Tsing Hua University, ² Feng Chia University / Taiwan FB2-2 Hybrid Hele-Shaw Navier-Stokes Simulation for Capillary Underfill Flow: A Numerical Analysis Chien-Ting Wu, Leo Shen, CoreTech System (Moldex3D) / Taiwan FB2-3 RDL Embedded Coreless Substrate for Hetelogenious Integration Fusao Takagi, Takashi Fujita, Masahiro Kosugi, Hiroyuki Ishida, Akane Kobayashi, Shuji Kiuchi, Toppan Holdings / Japan | FC2: Intermetallic Compounds-2 FC2-1 Surface Manipulation of Ag Metallization to Improve the Adhesion Strength for Soldering Applications on LTCC C. Kleinholz ² , B. Müller ¹ , M. Fischer ¹ , C. Tschoban ² , J.-M. Köszegi ² , H. Pötter ² , I. Ndip ² , M. Schneider-Ramelow ² , J. Müller ¹ , Technische Universität Ilmenau, Fraunhofer Institute for Reliability and Microintegration / Germany FC2-2 Fabrication of InP-on-Insulator Wafers Through Room Temperature Wafer Bonding Using Activated Si Atomic Layer Gufei Zhang, Seigo Murakami, Ryo Takigawa, Kyushu University / Japan FC2-3 Interfacial Reactions in the Sn-3.0 wt.%Ag-0.5 wt.% Cu (SAC)/Cu-Ni-Si-Mg Alloy (C7025) Couples M. Ramadhan, A. D Laksono, Y. C. Liou, Y. W. Yen, National Taiwan University of Science and Technology / Taiwan FC2-4 In-Situ Observations of Cu ₆ Sn ₅ Morphological Changes Between Solid/Liquid Interface at SAC305/OSP-Cu Solder Joint Kazuhiro Nogita ¹ , Xin F. Tan ^{1,2} , Flora Somidin ³ , Stuart D. McDonald ¹ , Hiroshi Maeno ² , Syo Matsumura ² , The University of Queensland / Australia, ³ Kyushu University / Japan, ³ Universiti Malaysia Perlis (UniMAP) / Malaysia | FD2: Thermal Management-2 FD2-1 Thermal Transient Evaluation of MOSFETs Heating Current Applied from Source to Drain Wasanthamala Badalawa, Tomoaki Hara, Siemens / Japan FD2-2 Examination of Evaluation Method for In-plane Effective Thermal Conductivity of Printed Circuit Board R. Hasegawa, T. Hatakeyama, R. Kibushi, Toyama Prefectural University / Japan FD2-3 Metal Sinter Material Technology for Power Module Packaging Yi-Chi Yang, Chen-Chun Chao, Jyh-Long Jeng, ITRI / Taiwan FD2-4 Cooling Performance Evaluation of Microprocessor Package and Heat Sink Koji Nishi, Ashikaga University / Japan | FE2: Optoelectronics-2 FE2-1 <Session Invited> Dinuclear Eu (III)-beta-Diketonates With Tetraphosphine Tetraoxide Ligand and Their LED Applications Hiroki Iwanaga ¹ , Chingchun Huang ¹ , Takeshi Hongo ¹ , Atsushi Okuno ² , Toshiba, ² Green Planets / Japan FE2-2 <Session Invited> Light-Reflection-Type High-Power Distar Engine Capable Easy Heat Dissipation Ken-ichiro Okamoto ¹ , Kensho Okamoto ¹ , Kazunori Morishita ¹ , Atsushi Okuno ² , Kyoto University, ² Green Planets / Japan FE2-3 <Session Invited> TBD FE2-4 <Session Invited> Superior Characteristics of 405nm-Based High-CRI White LEDs Atsushi Okuno ¹ , Jang Ukan ² , ² Green Planets / Japan, ³ ALLIX / Korea |
| 13:10 | | | Lunch Time | | |
| 13:10 | | | | | |
| 14:00 | FA3: Nano-imprint FA3-1 <Session Invited> Synchronization of Process and Material to Achieve Best Results in Nano-Imprinting Lithography Patrick Schuster, EV Group / Austria FA3-2 <Session Invited> Advanced Manufacturing Techniques for Freeform Micro-Optics Elements Anna Dudus, EV Group / Austria FA3-3 <Session Invited> Advanced Technologies for Large FOV Waveguide Satoshi Shiraga, Celid / Japan FA3-4 <Session Invited> Wearable Devices Using Microfabrication and Nanoimprinting of Conductive Polymers Seijihi Takamatsu, The University of Tokyo / Japan | FB3: High-Speed, Wireless & Components-1 FB3-1 A Compact AiP with a Dual-Polarized 1x4 Antenna Array for 5G Smartphone Applications Sheng-Chi Hsieh, Hong-Sheng Huang, Wen-Chun Hsiao, Cheng-Yu Ho, Chen-Chao Wang, Hsu-Yang Lee, ASE / Taiwan FB3-2 High Performance Antenna-In-Package With Test Socket for Millimeter-Wave System Cheng-Yu Ho, Sheng-Chi Hsieh, Chen-Chao Wang and Hsu-Yang Lee, ASE / Taiwan FB3-3 Microwave Patch Antenna Placement on 6U CubeSat Daisuke Nakayama, Kei Sano, Tohru Matsushima, Yuki Fukumoto, Kyushu Institute of Technology / Japan FB3-4 Matching Circuit to Improve Transmission Characteristic of Antenna for Undersea Communication Soma Miki, Kensei Kuwahara, Kazuhiro Eguchi, Daisuke Nakayama, Tohru Matsushima, Yuki Fukumoto, Kyushu Institute of Technology / Japan | FC3: Organic and Polymer Material FC3-1 Sintering Behavior of Silver-Filled Anhydride-Cured Electrically Conductive Adhesives for Enhancing Interfacial Conductivity Takanori Fukushima, Masahiro Inoue, Gunma University / Japan FC3-2 Development of Novel Low Dielectric Epoxy Resin Kentaro Tanaka, Masanari Nishimura, Noriyuki Kida, Takaaki Watanabe, Mitsubishi Chemical / Japan FC3-3 Kinetics on Dynamic Percolation of Carbon-Nanotube-Filled Electrically Conductive Pastes Depending on Binder Chemistry Masahiro Inoue, Subaru Tsujimura, Jinseok Won, Gunma University / Japan FC3-4 Ultra-Sensitive Visualization and Identification of Defects in Microelectronics Packaging Michael K. F. Lo, Eoghan Dillon, Jay Anderson, Photothermal Spectroscopy / USA | FD3: Thermal Management-3 FD3-1 Effectiveness of Thermal Bottleneck in Topology Optimization for Thermal Conduction Design Haruki Takei, Siemens / Japan FD3-2 Investigation into Impact of Layout Design on Thermal Performance in Embedded-Die Package Tang-Yuan Chen, Frank Chiu, Dao-Long Chen, Chen-Chao Wang, ASE / Taiwan FD3-3 Assessment of Thermal Dissipation Ability of Assembled Modules Bonded by Metallic Pastes, Pb-Free Solder, and Thermally Conductive Sheet Ming-chun Hsieh ¹ , Aiji Suetake ¹ , Zeng Zhang ¹ , Rieko Okumura ¹ , Kei Anai ² , Takashi Hattori ² , Katsushi Suganuma ¹ , ¹ Osaka University, ² Mitsui Mining & Smelting (MITSUI KINZOKU) / Japan FD3-4 Heat Transfer Performance of Aluminum-Ammonia Heat Pipe at Low Temperature Under Various Heating/ Cooling Conditions Chien-Cheng Wang, Chieh Lung, Mu-Ting Hsieh, Chien-Yuh Yang, National Central University / Taiwan | FE3: Optoelectronics-3 FE3-1 <Session Invited> TBD Yasufumi Fujiwara, Osaka University / Japan FE3-2 <Session Invited> How can Micro-LEDs for Next Generation Displays Leverage The Learnings of Electronics Assembly / Packaging Industry? Makaren Hussein, LuxNour Technology / U.S. |
| 15:40 | | | Break | | |
| 15:40 | | | | | |
| 16:00 | | | | | |

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| 16:00 17:40 | FA4: Professor S. Denda Memorial Session FA4-1 (10 min.) TBD FA4-2 (30 min.) TBD FA4-3 <Session Invited> (30 min.) Toward Glass Core Substrate from Si Interposer for the Future Advanced Packaging Satoru Kuramochi, Dai Nippon Printing / Japan FA4-4 (30 min.) TBD | FB4: High-Speed, Wireless & Components-2 FB4-1 Development of Cast Iron Manhole Steel Covers With Improved Radio Wave Permeability Eiichi Tateishi ^{1,2} , Yuantong Yi ¹ , Nobuhiro Kai ² , Takaya Kumagae ² , Tatsuya Yamaguchi ¹ , Haruichi Kanaya ¹ , Kyushu University, ² HINODE Holdings, ³ HINODE / Japan FB4-2 High-Speed Signal Transmission Rigid Substrate Fabricated by Silver-Seed Copper Plating Technique Wataru Fujikawa, Rei Tamura, Tadashi Matsumoto, Norimasa Fukazawa, DIC / Japan | FC4: Advanced Packaging Materials and Related Technologies FC4-1 Surface Topography Control for Polymer/Cu Hybrid Bonding Yuzo Nakamura ^{1,2} , Yusuke Kondo ¹ , Kenta Hayama ¹ , Fabiana Lie Tanaka ¹ , Fumihiro Inoue ¹ , Yokohama National University, ² Mitsui Chemicals / Japan FC4-2 Development of Fast Filling Acid Copper Plating for Through Silicon Via Nobuaki Nagano, Shota Suzuki, Reito Kobayashi, JCU / Japan FC4-3 Advanced TIM Material Analysis for High performance Package Applications Jyun-De Jhan, Wen-Yu Teng, Liang-Yih Hung, Carl Chen, Yu-Po Wang, SPIL / Taiwan FC4-4 A Special Holding System for Large Package in 3D X-Ray Inspection Chia-Ju Huang, Yu-Hsiang Hsiao, Yi-Sheng Lin, Cheng-Hsin Liu, ASE / Taiwan | | |
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■ Poster Session

Poster sessions will be held from 15:50-16:50 on April 17 and from 17:40-18:40 on April 18.

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|-----|---|-----|--|-----|---|-----|---|
| P01 | Plasma Cleaning and Thermal Compression Bonding of Indium Bumps as Superconducting Interconnects for Cryogenic and Quantum Computing Applications Kumin Kang ¹ , Jaber Derakhshandeh ² , Christian Wendeln ¹ , Ralf Schmidt ¹ , Hao-Yu ² , Tom Cochet ² , Eric Beyne ² , ¹ Hanyang University / Korea, ² imec / Belgium, ³ Atotech Deutschland / Germany | P11 | Fracture Properties Characterization of Multi-Layer Ceramic Capacitors for Device Longevity Assessment Po-Yi Lee, Kuo-Shen Chen, Tz-Cheng Chiu, Tian-Shiang Yang, Ching-Jeng Ho, Lien-Wen Chen, National Cheng-Kung University / Taiwan | P21 | Evaluation of PVD SiCN for Cu/SiCN Hybrid Bonding Junyoung Choi, Sangmin Lee, Sangwoo Park, Sarah Eunkyung Kim, Seoul National University of Science and Technology / Korea | P31 | Long-Term Reliability of Sintering Paste Using Ag Coated Cu Particles Dajung Kim, Mi so Won, Hyunseung Yang, Chulmin Oh, Korea Electronics Technology Institute / Korea |
| P02 | High Speed D2D Interface Applied on Advanced Package Chen Chao Wang, Chih Yi Huang, Hung Chun Kuo, Ming Fong Jhong, Fu Chen Chu, Chung Hung Lai, Hung Hsien Huang, Lee Hsu Yang and Chih Pin Hung, ASE Group / Taiwan | P12 | Thermal Cycle Reliability of BGA Package With Board-Level Underfill Materials Jyeon Park, Dajung Kim, Hyunseung Yang, Myeonghyeon Jeon, Chulmin Oh, Korea Electronics Technology Institute (KETI) / Korea | P22 | Fly Cutting for Polymer Planarization in Hybrid Cu Bonding Suin Jang, Sangmin Lee, Sangwoo Park and Sarah Eunkyung Kim, Seoul National University of Science and Technology / Korea | P32 | Development of a Sintering Paste Using Cu@Ag Powder for Power Package Mi So Won, Dajung Kim, Hyunseung Yang, Chulmin Oh, Korea Electronics Technology Institute / Korea |
| P03 | Research of Impedance Optimization with Mesh Reference Ground Shu-Yu Lin, Shin-Shian Wu, Yu-Ming Su, Tsai-Feng Wu, Sung-Mao Wu, National University of Kaohsiung / Taiwan | P13 | Investigation of Plasma Gases for Polysilazane Conversion into SiO ₂ for Wafer Bonding D. Nemoto, K. Takeuchi, E. Higurashi, Tohoku University / Japan | P23 | Microstructure and Mechanical Properties of Type 8 Solder Paste for Mini LED Assembly Using Laser-Assisted Bonding Jun Ho Ku, Jae Pil Jung, University of Seoul / Korea | P33 | Silver Paste Transferability in the Imprinting Process H. Komatsu, D. Sakai, N. Shimoizhizaka, CONNECTEC JAPAN / Japan |
| P04 | Design of Panel Level Package and Power and Signal Integrity Analysis Yuzhi Ma, Qian Lee, SungMao Wu, National University of Kaohsiung / Taiwan | P14 | Observation of Liquid Crystal Fiber Structure in Both Nematic and Smectic Phases D. Sato ^{1,2} , Y. Sumino ¹ , T. Yamamoto ² , I. Mušević ³ , Y. Takenaka ^{2,1} , Tokyo University of Science, ² AIST / Japan, ³ Jožef Stefan Institute / Slovenia | P24 | Low-Temperature and Low-Pressure Fine-Pitch Micro Cu Bump Bonding Using Stress Migration of a Sputtering Ag Layer Zheng Zhang, Aiji Suetake, Ran Liu, Hiroshi Yoshida, Rieko Okumura, Chuantong Chen, Katsuaki Suganuma, Osaka University / Japan | P34 | Influence of Various Plasma and UV/O ₃ Treatments on Au Surfaces for Au-Au Surface Activated Bonding Mika Ogino, Kai Takeuchi, Eiji Higurashi, Tohoku University / Japan |
| P05 | High Speed Signal Design on Fan-Out RDL Interposer for Artificial Intelligence (AI) and Deep Neural Network (DNN) Chiplet Accelerators Application Ming-Han Zhuang, Chih-Yuan Shih, Ho-Chuan Lin, Andrew Kang, Yu-Po Wang, SPIL / Taiwan | P15 | Development of Laminate Materials With Low D _r Using VS-PPEs H. Yamamoto ¹ , K. Iwase ¹ , H. Fukuoka ¹ , S. Otani ¹ , M. Harada, ² Asahi Kasei, ² Kansai University / Japan | P25 | Comparison of Mechanical Property and Thermal Cycling Lifetime of Sintered Cu and Sintered Ag Dai Ishikawa ¹ , Hideo Nakako ¹ , Thomas Blank ² , Felix Steiner ² , Resonac / Japan, ² Karlsruhe Institute of Technology / Germany | P35 | Preparation and Characterization of Expanded Graphite/Polymer Composites With Enhanced Thermal Conductivity Chih-Feng Wang ¹ , Pei-Rung Hung ² , Ping-Feng Yang ³ , ¹ National Sun Yat-sen University, ² I-Shou University, ³ ASE / Taiwan |
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