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FB3-2 <Session Invited>	Development and Manufacturing of The Near-Sunlight white LED Light Source using a Human-Friendly Violet LED	Masaichi Kumikawa, Soraa / Japan	N/A
FB3-3 <Session Invited>	Unique Packaging Technology of High Bright LED, microLED, miniLED and UV LED using VPES	Atsushi Okuno, Green Planets Co., Ltd / Japan	N/A
FB3-4 <Session Invited>	The Development of Micro-LED Technology in ITRI	Yen-Hsiang Fang, Industrial Technology Research Institute / Taiwan	N/A
FB3-5 <Session Invited>	Introduction of AOI Machine using PL(Photoluminescence) and Laser Micro Trimming Machine for Micro LED	Ayaka Okabe, Toray Engineering / Japan	N/A

FC1: Flexible Hybrid Devices

10:10-11:50 Friday, April 19

FC1-1 <Session Invited>	Silicone Based Dielectric Elastomer Transducers and Robots	Shintake Jun, The University of Electro-Communicat / Japan	N/A
FC1-2 <Session Invited>	The Ultra-Flexible Organic Electronics	Tomoyuki Yokota, Takao Someya, The University of Tokyo / Japan	N/A
FC1-3 <Session Invited>	Self-Healing Metal Interconnect for Flexible Electronic Device	Tomoya Koshi, Eiji Iwase, Waseda University / Japan	291
FC1-4 <Session Invited>	Portable Analytical Detection Systems Based on Light Emitting Devices	Ryoichi Ishimatsu, Kyushu University / Japan	294

FC2: Flexible Electronics-1

12:50-14:30 Friday, April 19

FC2-1 <Session Invited>	Ultraflexible Organic Differential Amplifier for Low-Noise Biosignal Monitoring	Takafumi Uemura, Osaka University / Japan	N/A
FC2-2 <Session Invited>	Printing of Flexible Electronics for Wearable Applications	Takeo Minari[1,2], Xuying Liu[1], Qingqing Sun[1], Wanli Li[1], Akitsu Shigetou[1,2], Masayuki Kanehara[2,3], [1]NIMS, [2]Priways Co., Ltd., [3]C-INK Co., Ltd. / Japan	N/A
FC2-3	Homogeneous Dewetting on Large-Scale Microdroplet Arrays for Solution-Processing Electronics	Qingqing Sun[1], Wanli Li[1], Xu-Ying Liu[1,2], Masayuki Kanehara[3], Takeo Minari[1], [1]NIMS, [2]C-Ink. Co., Ltd / Japan, [3]Zhengzhou University / China	298
FC2-4	Air-stable Cu Complex Inks for Printed Electronics with High Conductivity and High Reliability	Wanli Li[1], Qingqing Sun[1], Xu-Ying Liu[1], Katsuaki Suganuma[2], Takeo Minari[1], [1]NIMS, [2]Osaka University / Japan	302

FC3: Flexible Electronics-2

14:40-16:20 Friday, April 19

FC3-1 <Session Invited>	Molecular Design of Highly Reliable Low Dielectric Loss Materials	Masao Tomikawa, Toray Industries Inc. / Japan	N/A
FC3-2 <Session Invited>	High-Performance Printed Carbon Nanotube TFTs and Circuits on Flexible Substrates	Jianwen Zhao, Chinese Academy of Sciences / China	N/A
FC3-3 <Session Invited>	Solution-Synthesized p-Type Copper(I) Iodide Semiconductors for Transparent Thin-Film Transistors and Complementary Electronics	Yong-Young Noh, POSTECH / Korea	N/A

FC3-4	Room-Temperature Printing of CNTs-based Flexible TFTs with high Performance	Qingqing Sun[1], Wanli Li[1], Xuying Liu[1,3], Masayuki Kanehara[2], Jianwen Zhao[4], Takeo Minari[1], [1]NIMS, [2]Colloidal Ink. Co., Ltd. / Japan, [3]Zhengzhou University, [4]Chinese Academy of Sciences / China	307

FD1: Optoelectronics

10:10-11:50 Friday, April 19

FD1-1 <Session Invited>	Optical Transceiver Modules and Their Packaging Technologies for Data Center Applications	Hideyuki Nasu, Furukawa Electric Co., Ltd.	N/A
FD1-2 <Session Invited>	Polymer Materials for Photonic Integrated Circuit	Hideyuki Nawata, Nissan Chemical Corporation / Japan	N/A
FD1-3 <Session Invited>	Packaging Technologies for Chip-scale Silicon Photonic Transceivers	Koichi Takemura[1], Kazuhiko Kurata[2], [1]PETRA, [2]AIO Core Co., Ltd. / Japan	N/A
FD1-4 <Session Invited>	Planar Optical Circuits using Slab Optical Waveguide on SOI Substrate	Takeo Maruyama, Kanazawa University / Japan	N/A

FD2: Korea Session-1

12:50-14:30 Friday, April 19

FD2-1 <Session Invited>	The Effects of Electrochemical Parameters on The Physical Properties of Ni Alloy Electroplating for MEMS Probe Card	Jae-Ho Lee, Yong-Su Lee, Hong-Wook Chun, Hongik University / Korea	N/A
FD2-2 <Session Invited>	Stretchable and Self-Healable Electrode Comprising Silver Nanowires and Diels-Alder Sdducts	Jong-Woong Kim, Chonbuk National University / Korea	N/A
FD2-3 <Session Invited>	IoT-Tag Module Development for LPWA Application.	Gu-Sung Kim, EPRC / Korea	N/A
FD2-4 <Session Invited>	Organic-Based Silica Composite Aerogel with Ultralow Dielectric Constant and Thermal Conductivity	Hyung-Ho Park, Yonsei University / Korea	N/A

FD3: Korea Session-2

14:40-15:30 Friday, April 19

FD3-1 <Session Invited>	Fabrication of Ag-Based Hybrid/NanoComposite Pastes and Their Characteristics	Choong-JaeLee, Kwang-Ho Jung, Bum-Geun Park, Seung-boo Jung, Sungkyunkwan university / Korea	N/A
FD3-2 <Session Invited>	Warpage Analysis of Flexible Electronics	Taek-Soo Kim, KAIST / Korea	N/A

FE1: Design, Modeling, and Reliability-1

10:10-11:50 Friday, April 19

FE1-1	Design Demonstration of Band-Pass-Filter Characteristics with Integrated Passive Device on Glass Interposer	Masaya Tanaka, Takamasa Takano, Yumi Okazaki, Dai-Nippon Printing Co., Ltd. / Japan	311
FE1-2	Gait Pattern Generation of Hexapod-Type Microrobot Using Interstitial Cell Model Based Hardware Neural Networks IC	Mika Kurosawa, Takuro Sasaki, Masaya Ohara, Taisuke Tanaka, Yuichiro Hayakawa, Minami Kaneko, Fumio Uchikoba, Katsutoshi Saeki, Ken Saito, Nihon University / Japan	316
FE1-3	Correlation between Insertion Loss and Interface Relative Conductivity	Taiga Fukumori, Tomoyuki Akahoshi, Daisuke Mizutani, Seiki Sakuyama, Fujitsu Laboratories ltd. / Japan	320
FE1-4	Construction and Verification of Novel Insulation Defect Location System with High Space Resolution for Next Generation Power Module	Junya Maki[1], Takakazu Matsuzoe[1], Masahiro Kozako[1], Masayuki Hikita[1] Yoko Nakamura[2], Katsumi Taniguchi[2], Yoshinari Ikeda[2], Kenji Okamoto[2], [1]Kyushu Institute of Technology, [2]Fuji Electric Co., Ltd / Japan	325

FE2: Design, Modeling, and Reliability-2

12:50-14:05 Friday, April 19

FE2-1	Reliability Assessment of WLCSP Using Energy Based Model with Inelastic Strain Energy Density	Yu-Chen Lee, K. N. Chiang, National Tsing Hua University / Taiwan	**329**
FE2-2	The Study of Sn-45Bi-2.6Zn Alloy Before and After Thermal Aging	Shiqi Zhou[1], Chih-han Yang[2], Yu-An Shen[1], Shih-kang Lin[2], Hiroshi Nishikawa[1], [1]Osaka University / Japan, [2]National Cheng Kung University / Taiwan	**333**
FE2-3	Materials Informatics Technique for Designing Strong-Adhesion Interfaces in Electronics Devices	Tomio Iwasaki, Hitachi, Ltd / Japan	**337**

FE3: Health, Beauty and Technology

14:40-16:20 Friday, April 19

FE3-1 <Session Invited>	Do Chemical Reactions of Electronics Technologies and Cosmetics Occur?	Yasuo Kato, Keio University / Japan	**N/A**
FE3-2 <Session Invited>	Innovations in Research and Development, Now and the Future-With a Focus on the Story Behind the Development of Wrinkle Shot Medical Serum-	Hirotaka Takeuchi, POLA Chemical Industries, Inc. / Japan	**N/A**
FE3-3 <Session Invited>	Possibility of Fusion: Cosmetic Research and Electronics	Yukiko Ishitsuka, KOSE Corporation / Japan	**343**

Poster Session

P01	Effect Analysis of Application of Energy Band Gap to Electrostatic Discharge Protection	Hong-Yin Hsieh, Jheng-Yuan Ruan, Min-Jun Guo, Wei-Chiao Wang, Sheng-Wei Guan, Sung-Mao Wu, National University of Kaohsiung / Taiwan	**345**
P02	Au–Sn Soldering Using a Micro-heater to Restrain Excess Temperature Rise Inside the Package	Hideaki Mizusaki, Toshiro Sato, Makoto Sonehara, Shinshu University / Japan	**349**
P03	Thermo-Mechanical Process Emulation and Sensitivity Analysis of Wafer Warpage after Reconstitution in Fan-out Packaging	Cheng-Ying Yang, Kuo-Shen Chen, Tian-Shiang Yang, Tz-Cheng Chiu, Ching-Jenq Ho, National Cheng-Kung University / Taiwan	**355**
P04	Wafer-Scale Au-Au Surface Activated Bonding Using Atmospheric-pressure Plasma	Michitaka Yamamoto[1,2], Takashi Matsumae[2], Yuichi Kurashima[2], Hideki Takagi[2], Toshihiro Miyake[3], Tadatomo Suga[1], Toshihiro Itoh[1], Eiji Higurashi[1,2], [1]The University of Tokyo, [2]AIST, [3]DENSO Corporation / Japan	**361**
P05	Nano-Cu Paste Sintering in Pt-Catalyzed Formic Acid Vapor for Cu Bonding at a Low Temperature	Fengwen Mu[1], Hui Ren[2], Lei Liu[2], Yinghui Wang[3], Guisheng Zou[2], Tadatomo Suga[1], [1]the University of Tokyo / Japan, [2]Tsinghua University, [3]University of Chinese Academy of Sciences / China	**365**
P06	Development of Sn-Bi-In-Ga Quaternary low-Temperature Solders	Chih-han Yang[1], Shiqi Zhou[2], Shih-kang Lin[1], Hiroshi Nishikawa[2], [1]National Cheng Kung University / Taiwan, [2]Osaka University / Japan	**367**
P07	Advanced Materials for Pathogenic Bacterial Sensing	Dung Quang Nguyen, Kengo Ishiki, Maki Saito, Kota Iwamoto, Hiroshi Shiigi, Osaka Prefecture University / Japan	**370**
P08	QFN Multi-Level Pin Routing:Innovative Design Approach Enabling Complex Wire Bonding Layout	Dolores B. Milo, Texas Instruments Philippines / Philippines	**375**
P09	Two-Faced Bondable Leadframe Design: Maximizing Leadframe Usage and Purpose	Ernesto P. Rafael Jr., Dolores Babaran-Milo, Texas Instrument Philippines / Philippines	**380**
P10	Mixed Mode Tension Test of Underfills	Hiroshi Yamaguchi, Toshiaki Enomoto, NAMICS Coporation / Japan	**384**
P11	Influence of Module Structure on Reliability of Silicon Solar Cells	Taeko Semba[1], Genki Saito[1], Shuichi Asao[2], Katsuhiko Shirasawa[2], Hidetaka Takato[2], [1]NAMICS Corporation / Japan, [2]AIST / Japan	**387**

P12	Characteristics of Nickel Thin Film Electroplated by Supercritical CO_2 Emulsion Assisted with Ultrasonic Agitation	H. C. Chuang[1], C. H. Huang[1], A. H. Liao[2], [1]National Taipei University of Technology, [2]National Taiwan University of Science and Technology / Taiwan	**391**
P13	Electromechanical Reliability of Flexible Transparent Electrode of Gravure Offset Printed Invisible Silver-Grid Laminated with Conductive Polymer	Masato Ohsawa, Natsuki Hashimoto, ULVAC, Inc. / Japan	**394**
P14	High Thermal Conductivity Composite Resin Sheet Filled with Large Diameter Aluminum Nitride and Aggregated Boron Nitride	I. Masada, S. Fujii, S. Imazumi, K. Fujinami, Y. Kanechika, T. Nawata, M. Ueda, Tokuyama Corporation / Japan	**400**
P15	Preparation of Si-Ti Based Nanofibers and Thin Film by Single-Needle Electrospinning	Wen-Yu Wang, Huai-You Lee, Cho-Liang Chung, I-Shou University / Taiwan	**404**
P16	A Hollow Nanostructure of Silicon-Based Can be Produced by Using Electrospinning Process	Chun-Yi Chen, Jun-Wei Zheng, Kai-Po Hsu, Cho-Liang Chung, I-Shou University / Taiwan	**407**
P17	New Adhesive Design and Evaluation for Bumpless Interconnects and Wafer-On-Wafer (WOW) Integration	S. Maetani[1,2], N. Araki[1,2], Y. S. Kim[1,3], S. Kodama[1,3], T. Ohba[1], [1]Tokyo Institute of Technology / Japan,[2]DAICEL Corp. / Japan, [3]DISCO Corp. / Japan	**411**
P18	Study of Low-Residual Stress Amorphous Film Deposition Method for $LiTaO_3$/Quartz or $LiNbO_3$/ Quartz Bonding toward 5G Surface Acoustic Wave Devices	Ami Tezuka[1], Hiroyuki Kuwae[1], Kosuke Yamada[1], Shuichi Shoji[1], Shoji Kakio[2], Jun Mizuno[1,3], [1]Waseda University, [2]Yamanashi University / Japan, [3]Soochow University / China	**414**
P19	Result of High Accelerated Stress Test of Organic Substrate Made by Integrated Dry Process.	Shinichi Endo[1], Shintaro Yabu[2], Tomoyuki Habu[1], [1]Ushio Inc. / Japan, [2]Ushio America Inc. / USA	**418**
P20	Electrodeposition of Cu Doped ZnS and Evaluation of Its Photocatalytic Property	Naohiro Matsuda, Naoki Okamoto, Takeyasu Saito, Osaka Prefecture University / Japan	**424**
P21	Comparison of Low Temperature Sinterability of Silver Micro-particles in Epoxy-based Binders Containing Several Mercaptocarboxylates	Shiho Nakazawa, Masahiro Inoue, Gunma University / Japan	**428**
P22	Bonding Strength of Cu-to-Cu Joints Using Cu Cold Spray Deposition by an Oxidation and Reduction Process for Power Device Package	Juncai Hou[1,2], Chengxin Li[3], Sijie Huang[2], Hiroshi Nishikawa[2], [1]ShaanXi University of Technology / China, [2]Osaka University / Japan, [3]Xi'an Jiaotong University / China	**432**
P23	Suppression of Backside Damage in Stealth Dicing	Natsuki Suzuki[1,2,3], Takayuki Ohba[1], [1]Tokyo Institute of Technology, [2]Hamamatsu Photonics K.K., [3]The Graduate School for the Creation of New Photonics Industries / Japan	**437**
P24	Structural Analysis and Electric Double Layer Capacitor of Furfural Resin -Based Active Carbon with Different Particle Size	Kanade Hokari[1], Shinichiro Suzuki[1], Naoki Okamoto[1], Takeyasu Saito[1], Isamu Ide[2], Masanobu Nishikawa[2], Yoshikazu Onishi[2], [1]Osaka Prefecture University, [2]LIGNYTE. CO., LTD. / Japan	**441**
P25	High Temperature Dielectric Property of Silicon Nitride Insulating Substrate for Next Generation Power Module up to 350 Degrees Celsius.	Tsuyoshi Abe, Yasutaka Nishigaki, Masahiro Kozako, Masayuki Hikita, Kyushu Institute of technology / Japan	**444**
P26	Characterization of Thermal-Electric Performance of Silicon Power MOSFET Inverter Using Coupled Field Analysis	Y.-S. Liao[1], Y.-H. Shen[1], H.-C. Cheng[2], W.-H. Chen[1], [1]National Tsing Hua University, [2]Feng Chia University / Taiwan	**449**