On-Demand Presentations (available via Whova Event App from 7-24 December, 2022)

1. Packages Design and Simulations	2. Quality, Reliability & Failure Analysis
1.1 High-Density 56Gbps PAM4 Package Design Enablement with Cost and Performance Optimization	**2.1 Vias Electromigration Lifetime Reliability Evaluation by using Focus Ion Beam Method**
Tan, Chit Zhung (1); Chong, Fee Wah (1); Jiang, Jenny (2)	Xiaowen, Zhang; XiaoLing, Lin; Zongbei, DAI; Rui, Gao"
Intel Programmable Solutions Group, Penang Malaysia; Intel Programmable Solutions Group, California United States	The Fifth Electronics Research Institute of the Ministry of Industry and Information Technology, China
1.2 Determining System Level Margin through SIPI Co-simulation and Jitter Transfer Function	**2.2 A Non-Destructive Inspection Method for Electronic Packaging Reliability Incorporating Mechanical and Thermal information**
Tan, Fern Nee; Chew, Li Wern; Ong, Ling Li; Mak, Sze Lin; Mah, Chee Hoong	Xiong, Chuanguo; Zeng, Baoshan; Huang, Yuhua; Zhu, Fulong
Intel Corporation, Malaysia	Huazhong University of Science and Technology, China
1.3 Fast Design of a Multilayer Interdigital Filter Exploiting Trust Region Aggressive Space Mapping	**2.3 Package Failure Understanding Through Crack Propagation Analysis**
Wang, Xiaoming (1); Chen, Haojie (1); Yang, Yang (1); Cao, Lin (2); Jin, Yufeng (1)	Talledo, Jefferson Sismundo; Delos Santos, Dexter; Santos, Mark Renier
School of Electronic and Computer Engineering, Shenzhen Graduate School of Peking University, China, People's Republic of; Nanyang Technological University	STMicroelectronics, Philippines
1.4 Parasitic effect analysis on TSV design factors	**2.4 Deep Learning and PoF Based Surrogate Model for Prognostics of Solder Joints in Microelectronics**
Jung, Cheong-ha; Seo, Seong-won; Kim, Gu-sung	Albrecht, Jan; Rzepka, Sven
EPRC, Korea, Republic of (South Korea)	Fraunhofer ENAS, Germany
1.5 Novel Power Grid Architecture to Reduce IR drop and Prevent Electromagnetic Interference	**2.5 Numerical Study on Semi-elliptical Crack in Heavy Aluminum Bonding Wires for IGBT Module**
SHARMA, AJAY KUMAR; BHOOSHAN, RISHI; IMAM, RAZA	Liu, Xiaofeng; Huang, Qiang; Zhu, Wenhui; Wang, Liancheng
NXP Semiconductors pvt ltd, India	Central South University, China, People's Republic of
1.6 Thermal management of the high-power downhole electronics using liquid cooling and phase change materials under high temperature environment	**2.6 Solder Joint Reliability Assessment on FO-CSP for Next Generation DDR6**
Peng, Jiale; Lan, Wei; Wei, Fulong; Deng, Chao; Luo, Xiaobing	Liu, Vance (1); Chen, Jian-Ming (1); Pan, Ji-An (1); Sinha, Koustav (2); Gan, CL (1); Huang, Edward (1); Yoo, Chan (2); Takiar, Hem (2)
Huazhong Univeisity of Science and Technology, China, People's Republic of	Micron Technology, Taiwan; Micron Technology, US
1.7 An Effective Analytical Method for Thermal Stresses Analysis of Heterogeneous Integration System in Display	**2.7 Enhanced Reversible USB Connector (eUSB-R) for ESD/EOS Components Removal in USB4/USB3 High Speed Interconnects**
Huang, Sixin, Long, Haohui, Li, Jianhui	Chew, Li Wern; Chai, Ming Dak
Huawei Technologies Co., Ltd, China; Huawei Device Co., Ltd, China	Intel Corporation, Malaysia
1.8 Substrate Design Optimization of Fine Pitch FCCSP for Molded Underfill Void Free Evaluation	**2.8 The Effect of Thermal Cycling Rate on the Mechanical Behavior of Micro bumps in CoWoS three-dimensional Package**
Yen, Freedman	BAO, Hong (1,2); LIU, Tianhan, NING, Minjie, DU, Weiping, LIU, Yufeng, DAI, Zongbei (1,2)
Siliconware Precision Industries Co., Ltd., Taiwan	Guilin University of Electronic Technology, No.5 Electronics Research Institute of the Ministry of Industry and Information Technology, Guangzhou, China
1.9 A Fast Analytical Model for TSV-based Toroidal Inductors	**2.9 RDL Elements' Anisotropic Equivalent Mechanical Material Properties Calculation Based on Machine Learning Method**
Yang, Yang (1); Jin, Yufeng (1); Liu, Huan (2); Cao, Lin (3)	Wu, Xiaodong; Ma, Shenling
Shenzhen Graduate School of Peking University, China; Institute of Microelectronics, Peking University, China; Nanyang Technological University	Xiamen university, China
1.10 Design and Optimization of Microchannel in a Fan-out Package for Heat Dissipation	
Sun, Bo; Zhang, Weize; Guo, Chunbing; Cui, Chengqiang	
School of Integrated Circuit, Guangdong University of Technology	
3. Materials and Processing	**4. Emerging Technologies**
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Zhou, Yuqi; Huang, Yuhu; Li, Jinming; Zhu, Fulong	Sagawa, Tetsuya (1); Komaki, Ichiro (2); Okawa, Yuki (2); Kohashi, Yasunari (2); Kanaya, Haruichi (1)
School of Mechanical Science and Engineering, Huazhong University of Science and Technology, Wuhan, Hubei Province, 430074, China	Kyushu University, Japan; Braveridge Co., Ltd.
3.2 The Effect of BNNS Distribution on the Plastic Deformation of BNNS/Al Composites during the Nanoindentation	**4.2 Design of one-sided directional slot antenna for 28GHz band application by Bayesian optimization**
Li, Jinming; Huang, Yuhua; Zhou, Yuqi; Zhu, Fulong	Takegami, Kohei (1); Goodwill, Kumar (2); Kanaya, Haruichi (3)
Huazhong University of Science and Technology, China, People's Republic of	Kyushu University, Japan; Kyushu University, Japan; Kyushu University, Japan
3.3 Effectiveness of Slow Cure Non-Conductive Film in Void Elimination	**4.3 One-sided directional slot antenna with magnetic film for 28 GHz application**
Jao, Li; Lai, Ming Hung; Kr, Sareddy; Tsai, Meng Hung; Espina, Angelo; Chung, Min Hua; Gan, Chong Leong	Miyahara, Koto (1); Ishibashi, Takeshi (2); Tham, Kim Kong (2); Goodwill, Kumar (1); Kanaya, Haruichi (1)
Micron Technology, Taiwan	Kyushu University, Japan; TANAKA Kikinzoku Kogyo K.K.
3.4 EFFECT OF DIE THICKNESS ON THE RELIABILITY OF SOLDER JOINT IN CLIP-BONDED PACKAGES	**4.4 Development of RF Energy Harvesting Circuit by Multistage and Multiple Connections**
Dchar, Ilyas; Yandoc, Ding	Torigoe, Shota (1); Hosaka, Ryoma (1); Mansour, Mohamed M (1); Takiguchi, Osamu (2); Murakami, Masaya (3); Kanaya, Haruichi (1)
Nexperia, United Kingdom	Kyushu University, Japan; ALSENS Inc.; SEIKO ELECTRIC CO., LTD.
3.5 Material Innovation Through Atomistic Modelling for Hybrid Bonding Technology	**4.5 Thermal and RF Characterization of Novel PLA/Flax Based Biodegradable Printed Circuit Boards**
Dag, Sefa; Jiang, Liu; Sitaraman, Srikrishna; Lianto, Prayudi; See, Gilbert; Sreenivasan, Raghav; Sundarrajan, Arvind; Sangamalli, Buvna-Ayyagari; Bazizi, El Mehdi	Géczy, Attila (1); Csiszár, András (2); Xavier, Pascal (3); Corrao, Nicolas (3); Rauly, Dominique (3); Kovács, Róbert (4,5); Fehér, Anna Éva (4); Rozs, Egon (1); Gál, László (1)
Applied Materials, United States of America	Budapest University of Technology and Economics, Hungary; Meshlin Composites Zrt., Hungary; Univ. Grenoble Alpes, Univ. Savoie Mont Blanc, CNRS, Grenoble INP, IMEP-LAHC, France; Budapest Univ.of Technology and Economics; Wigner Research Centre for Physics
3.6 New Types of Hybrid Polymer Formulations for Wafer Level Optics and Bonding Using Ultra Fine Filler Materials	**4.6 700nm pitch Cu/SiCN wafer-to-wafer hybrid bonding**
Koch, Matthias (1); Russew, Maria (2); Scharfenberg, Ludwig (2); Huang, Eagle (1); Schleunitz, Arne (2); Grützner, Gabi (2)	Chew, Soon Aik; Iacovo, Serena; Dewilde, Sven; Fodor, Ferenc; Devriendt, Katia; De Vos, Joeri; Miller, Andy; Beyer, Gerald; Beyne, Eric
Merck KGaA, Darmstadt, Germany; micro resist technology GmbH, Germany	IMEC, Belgium