

2016 17th International Conference on Electronic Packaging Technology (ICEPT 2016)

**Wuhan, China
16-19 August 2016**

Pages 1-766



**IEEE Catalog Number: CFP16553-POD
ISBN: 978-1-5090-1397-5**

**Copyright © 2016 by the Institute of Electrical and Electronics Engineers, Inc
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

******This publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP16553-POD
ISBN (Print-On-Demand):	978-1-5090-1397-5
ISBN (Online):	978-1-5090-1396-8

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

Correlation of Board and Joint Level Test Methods with Strain Dominant Failure Criteria for Improving the Resistance to Pad Cratering.....	1
<i>Qiming Zhang, Jeffery C. C. Lo and S. W. Ricky Lee</i>	
Research on Damage-mechanism Based Prediction Methodologies for Thermo-mechanical Reliability of Solder Joints in Electronic Packaging	7
<i>Hui Xiao, Daojun Luo and Hongqin Wang</i>	
Investigation on Damage Behavior of Lead-free Solder Joints Based on Finite Element Modeling.....	14
<i>Hui Xiao, Zhonghua Wan and Daojun Luo</i>	
Facile Preparation of sintered Cu-Ag bimetallic nanoparticle Paste with low porosity.....	19
<i>Zhi Jiang, Yanhong Tian, Yuan Huang and Jiayue Wen</i>	
Development of Multi-stack Dielectric Wafer Bonding	22
<i>Lan Peng, Soon-Wook Kim, Fumihiko Inoue, Teng Wang, Alain Phommahaxay, Patrick Verdonck, Anne Jourdain, Joeri De Vos, Erik Sleenckx, Herbert Struyf, Andy Miller, Gerald Beyer, Eric Beyne, Mike Soules and Stefan Lutter</i>	
Investigation of Single Cut Process in Mechanical Dicing for Thick Metal Wafer	26
<i>Haiyan Liu, Yadong Wei, Jianhong Wang and Sean Xu</i>	
Thermo-visco-plastic constitutive model for lead-containing and lead-free solders subjected to monotonic and cyclic loadings	31
<i>Xu Long, Bingjie Chen and Yao Yao</i>	
Analysis of Board Level Vibration Reliability of PoP Structure with Underfill Material.....	37
<i>Jiang Xia, Guoyuan Li and Bin Zhou</i>	
Interconnection of Cu wire/Au plating pads using parallel gap resistance microwelding process	43
<i>Yang Liu, Yanhong Tian, Baolei Liu, Jikai Xu, Jiayun Feng and Chenxi Wang</i>	
Fuzzy PID Control for Impact Force of High Speed Wire Bonding Process.....	47
<i>Jian Gao, Guanhao Dai, Yongjun Jiang, Xiaochu Wang, Yun Chen, Hui Tang and Yunbo He</i>	
A Study for a Typical Leakage Failure of PCBA with No-cleaning Process	53
<i>Xiao He, Liang Zhou and Jianghua Shen</i>	

In Situ Hydrothermal Synthesis of Silver Nanoparticle Based on Graphene and Their Application for Electrically Conductive Adhesive	57
<i>Jinfeng Zeng, Hongru Ma, Xun Tian and Yanqing Ma</i>	
Multi-layered Red, Green, and Blue Phosphor-in-Glass for Ultraviolet-Excited White Light-Emitting Diodes Packaging.....	61
<i>Yang Peng, Hao Cheng, Zhen Chen, Mingxiang Chen and Ruixin Li</i>	
Luminous Efficacy Enhancement of Phosphor-in-Glass Based White Light-Emitting Diodes through Patterned Structure	65
<i>Yang Peng, Hao Cheng, Zhen Chen, Mingxiang Chen and Han Wang</i>	
Three-Dimensional microfabrication of copper column by localized electrochemical deposition	69
<i>Hongbin Xiao, Peng Zeng, Xinyu Ren and Fuliang Wang</i>	
Failure analysis for laminate delamination	73
<i>Ying Yang</i>	
Numerical Simulation of Thermo-mechanical Behavior in High Power Diode Laser Arrays	76
<i>Yao Lu, Zhiqiang Nie, Pu Zhang, Zhenfu Wang, Lingling Xiong, Shuna Wang, Dihai Wu and Xingsheng Liu</i>	
Fluid dynamics of jetting dispensing process based on simulation and experiment.....	84
<i>Tao Wu, Guiling Deng, Can Zhou and Wang Chen</i>	
Effect of Moisture Related Properties of Mold Compound on the Reliability of Power Packages	88
<i>Dandong Ge, Xue Ming, Wenjie Shen and Zhao Yun</i>	
Development of RGB phosphor-in-glass for ultraviolet-excited white light-emitting diodes packaging	94
<i>Ruixin Li, Hong Li, Yang Peng, Hao Cheng, Zhen Chen and Mingxiang Chen</i>	
Research on the risk identification of mechanical stress damage during electronic assembly process	98
<i>Hongqin Wang, Hui Xiao, Chaohui Liang, Tao Lu and Wanchun Tian</i>	
The Realization of Big Networking and Cloud Computing Dream from Contact Interconnect Methodology to Process Technology (Part 2)	105
<i>Paul Wang, David He, Goterry Mai, DF Chung and Don Kearns</i>	
Thermally accelerated ageing test of 808nm high power diode laser arrays in CW mode	111
<i>Zhiqiang Nie, Yao Lu, Dihai Wu, Shuna Wang, Pu Zhang, Lingling Xiong, Xiaoning Li, Zenan Shen and Di Wu</i>	

Influence of Low Temperature on Tensile Properties and Fracture Behavior of Sn3Ag0.5Cu Solder Alloy	116
<i>Ruyu Tian, Yanhong Tian and Chenxi Wang</i>	
Assessment of Assembly Quality of Chip Scale Package LEDs on Insulated Metal Substrate	119
<i>E Liu, Bindhya Raj Ankit and Elger Gordon</i>	
Simulation research of the BGA configuration on the RF transmission performance	125
<i>Bo Wang, Qiang Ma, Liang Tang and Tao Chen</i>	
Flexible ultrathin micro-supercapacitors based on laser-reduced graphene with superior electrochemical performance and aesthetic property	128
<i>Wenhui Lai, Binghe Xie, Yang Wang, Cheng Yang and Ronghe Wang</i>	
A High-performance Flexible Pseudo-supercapacitor Constructed on Conductive Cloth.....	133
<i>Yang Xu, Teng Wang, Cheng Yang and Ronghe Wang</i>	
Numerical Simulation and Experiment Study on the Resistance Loss of Glue Pipeline Transportation.....	138
<i>Wang Chen, Guiling Deng, Can Zhou and Zungang Yuan</i>	
Influence of nano-particles on creep behaviors of Cu/Sn-0.3Ag-0.7Cu-xPOSS/Cu composite solder joints.....	142
<i>Yangduanrui Hu , Limin Ma and Fu Guo</i>	
Thin and Large Die Assembly Pick Up Process Optimization by Dynamic Modeling.....	147
<i>Richard Qian and Yong Liu</i>	
Low-Dielectric-Constant Novel Periodic Mesoporous Organosilica Thin Film for Interlayer Dielectric.....	153
<i>Jiawei Zhang, Guoping Zhang, Rong Sun, S. W. Ricky Lee and Chingping Wong</i>	
High Mechanical Strength and High Dielectric Graphene/Polyurethane Composites Healed by Near Infrared Laser	157
<i>Shuwen Wu, Jinhui Li, Guoping Zhang, Rong Sun and Chingping Wong</i>	
Numerical model with competitively adsorptive mechanism for copper electrodeposition of TSV	162
<i>Jie Shen, Wei Luo, Wenhao Dong, Ming Li and Liming Gao</i>	
Modelling the Melting of Sn0.7Cu Solder Using the Enthalpy Method.....	166
<i>Anil Kunwar, Julien Givernaud, Haoran Ma, Zhixian Meng, Shengyan Shang, Yunpeng Wang and Haitao Ma</i>	

Effect of universal interconnect's geometrical parameters on metal-elastomer interface strength.....	170
<i>Qing Qin, Kailin Pan, Fan Yang, Weiwu Cao, Tingting Li, Wenjia Wang and Xufeng Han</i>	
Localized electrochemical deposition of micrometer copper columns as affected by adding sulfuric acid.....	175
<i>Yijie Li, Jianping Li and Fuliang Wang</i>	
Thermal analysis and optimization of IGBT power electronic module based on layout model	180
<i>Hongyu Tang, Huaiyu Ye, Mingming Wang, Xuejun Fan and Guoqi Zhang</i>	
Enhanced Thermal Conductivity and Mechanical Properties of Epoxy Resin-Alumina-Silicon Carbide Fibers Three-Phase Composites	186
<i>Xiaoliang Zeng, Kun Guo, Shuhui Yu, Rong Sun and Jianbin Xu</i>	
Open Circuit Caused by Inner-layer Separation in Printed Circuit Board	191
<i>Xingjia Huang, Changping Ou, Xuanyu Huang, Bing Su and Weili Zhou</i>	
High Performance Silver Nanowire based Transparent Electrodes Reinforced by EVA Resin Adhesive.....	195
<i>Ziheng Li, Cheng Yang and Ronghe Wang</i>	
Water-dispersible graphene paste for flexible conductive patterns and films.....	200
<i>Yougen Hu, Tao Zhao, Pengli Zhu, Xianwen Liang, Yu Zhu, Haibo Su, Rong Sun and Chingping Wong</i>	
Synthesis and Characterization of Ultra-fine Bimetallic Ag-Cu Nanoparticles as Die Attach Materials.....	206
<i>Xiaojian Liu, Chunqing Wang, Zhen Zheng and Wei Liu</i>	
Reliability analysis of Conductive Adhesive Joints on Aluminum	209
<i>Jie Chen and Yulan wen</i>	
Underfill Technology for Fine Pitch Flip Chip Applications.....	213
<i>Pengli Zhu, Gang Li, Qian Guo, Tao Zhao and Chingping Wong</i>	
Preparation water dispersible reduced graphene oxide as ink materials for the flexible and wearable energy storage devices.....	218
<i>Haibo Su, Pengli Zhu, Fengrui Zhou, Yankang Han, Xingtian Shuai, Yougen Hu, Tingxi Li, Rong Sun and Chingping Wong</i>	
Modeling and control of the temperature field in jet dispensing valve	222
<i>Weisong Li, Xiuyang Shan and Haining Zhang</i>	
A Compact QCW Conduction-cooled High Power Semiconductor Laser Array	227
<i>Qiwen Zhu, Pu Zhang, Shuna Wang, Dihai Wu, Zhiqiang Nie, Lingling Xiong, Yunfei Song and Xingsheng Liu</i>	

Electromigration simulation of Cu pillar interconnect microstructure of 3D packaging	234
<i>Zhiyuan Leng, Ming Xiao, Man He, Weisheng Xia and Bo Wang</i>	
Comparing the copper and gold wire bonding during thermalsonic wire bonding process	240
<i>Yongjun Pan, Fulong Zhu, Xinxin Lin, Jiaquan Tao, Liping He, Han Wang and Sheng Liu</i>	
Preparation and properties of silicone -cycloaliphatic epoxy resins for LED packaging	244
<i>Yangyang Zong, Dayong Gui, Si Yu, Canqun Liu, Wei Chen and Zhongnan Qi</i>	
Preparation of Nickel Oxide/Graphene Aerogel Composites and Its Electrochemical Performance for Supercapacitor	249
<i>Wei Chen, Dayong Gui, Si Yu, Canqun Liu, Liqing Zhao and Jianhong Liu</i>	
Light decomposition characteristics of UV-irradiated polycarbonate	253
<i>Si Yu, Cheng Qian, Dayong Gui, Wei Chen, Yangyang Zong and Canqun Liu</i>	
Simulation and Design of a Hot-film Air Flow Sensor with Sapphire as Substrate	257
<i>Chunlin Xu, Shannan Zhan, Jingcao Chu, Xuefang Wang and Sheng Liu</i>	
Inkjet-printed Ag tracks sintered at room-temperature on flexible substrate.....	261
<i>Zhihao Zhang, Xin Jin and Huijun Cao</i>	
Synchrotron radiation in situ study on the solidification of Cu/Sn-58Bi/Cu solder joint under temperature gradient.....	264
<i>Ning Zhao, Yi Zhong, Mingliang Huang, Haitao Ma and Wei Dong</i>	
Electromigration behavior of Sn3.0Ag0.5Cu/Sn58Bi structure composite solder interconnect.....	268
<i>Fengjiang Wang, Lili Zhou and Xiaojing Wang</i>	
Interfacial reaction of Ni/Sn-9Zn/Ni solder joint undergoing liquid-solid thermomigration.....	273
<i>Ning Zhao, Jianfeng Deng, Yi Zhong, Mingliang Huang and Haitao Ma</i>	
Effect of Silver Nanoparticles Decoration on the Thermal Conductivity of Boron Nitride Nanosheets/Silicon Carbide Nanowires Bioinspired Composite Paper	277
<i>Yimin Yao, Xiaoliang Zeng, Rong Sun, Jianbin Xu and Chingping Wong</i>	
Influence of microstructure inhomogeneity on the electromigration behavior of flip chip solder joints	283
<i>Shanshan Wang, Ying Wang, Ping Zhang, Lei Guo, Hongbo Qin, Hongjie Jiang and Hong Yan</i>	

A highly sensitive flexible capacitive pressure sensor with micro-array dielectric layer.....	289
<i>Xingtian Shuai, Pengli Zhu, Xianwen Liang, Yougen Hu, Yu Zhang, Qian Guo, Haibo Su, Rong Sun and Chingping Wong</i>	
Ultrasonic-assisted soldering of Sn/Ni composite solder during die bonding for high-temperature application.....	295
<i>Hongjun Ji, Minggang Li and Mingyu Li</i>	
Effects of Bath Temperature on Co-electroplating Au-Sn Alloys for Electronic Packaging.....	301
<i>Fangwu Tang, Mingliang Huang and Feifei Huang</i>	
Effects of nano-structured reinforcements on the recrystallization and damage mode of Sn–3.0Ag–0.5Cu solder joints	304
<i>Penghao Gu , Jing Han and Fu Guo</i>	
Effect of Reduction Temperatures on the Thermal and Electrical Conductivities of Reduced Graphene Oxide Films on the Cu Foils	310
<i>Shaoqing Liu, Kai Zhang, Matthew M.F. Yuen, Xianzhu Fu, Rong Sun and Chingping Wong</i>	
Enhancement of thermal conductivity of phase change materials by 3D graphene @Al ₂ O ₃ foams	313
<i>Yaqiang Ji, Haoran Wen, Kai Zhang, Matthew M.F. Yuen, Xianzhu Fu, Rong Sun and Chingping Wong</i>	
Electroplating Fabrication and Characterization of Sn-Ag-Cu Eutectic Solder Films	318
<i>Jinqi Xie, Zhe Zhong, Kai Zhang, Matthew M.F. Yuen, S.W. Ricky Lee, Xianzhu Fu, Rong Sun and Chingping Wong</i>	
Growth pattern and morphology of micro nickel column by localized electrochemical deposition	322
<i>Jiadong Sun, Defu Liu, Fuliang Wang and Tao Chen</i>	
The Study of the Growth Behavior of Cu ₆ Sn ₅ at the Sn/Cu Interface during the Heating Preservation Stage	327
<i>Chengrong Jiang, Bingfeng Guo, Haoran Ma, Anil Kunwar, Zhixian Meng and Haitao Ma</i>	
Low Melting Alloy Composites as Thermal Interface Materials with Low Thermal Resistance	331
<i>Haoran Wen, Yaqiang Ji, Kai Zhang, Matthew M.F. Yuen, S.W. Ricky Lee, Xianzhu Fu, Rong Sun and Chingping Wong</i>	
Analysis of Photoluminescence Mechanisms and Thermal Quenching Effects for Multicolor Phosphor Films Used in High Color Rendering White LEDs	334
<i>Mengni Zhang, Jiajie Fan, Cheng Qian, Xuejun Fan, Aimin Ji and Guoqi Zhang</i>	

Electrochemical Synthesis of Dendrite-like Cu Catalysts for Electroless Deposition of Cu Circuits	341
<i>Zhe Zhong, Jinqi Xie, Kai Zhang, Matthew M.F. Yuen, Xianzhu Fu, Rong Sun and Chingping Wong</i>	
Conductive Anodic Filament Reliability and Failure Analysis for Halogen-Free Packaging Substrate	344
<i>Chaohui Hu and Lina Zhou</i>	
Influence of Electric Current on the Grain Orientation of Cu-Sn Intermetallic Compounds in Cu/Molten Sn/Cu Interconnection System	348
<i>Jiayun Feng, Baolei Liu, Yanhong Tian and Baoyou Zhang</i>	
Inherent growth habit of Cu ₆ Sn ₅ phase at the liquid Sn0.7wt%Cu solder/ (111) _{Cu} joint interface.....	352
<i>Huijun Cao and Zhihao Zhang</i>	
Fast Analysis and Implementation of Microelectronic Packaging MSL with Equal Moisture Distribution Method	356
<i>Qiulin Ding, Xiaosong Ma, Zhixue Liu and Guoqi Zhang</i>	
Oxidation Resistant Core-shell Cu@SiO ₂ Nanowires for Composites with High Dielectric Performance	361
<i>Yanbin Shen, Suibin Luo, Shuhui Yu, Rong Sun and Chingping Wong</i>	
Fabrication of Microlens Array Encapsulation Layer based on porous film by breath figure method for Chip-On-Board light-emitting diodes.....	365
<i>Zefeng Zhang, Xing Guo, Xiang Lei, Jiading Wu, Chunlin Xu, Sheng Liu and Huai Zheng</i>	
Effects of temperature and humidity on the formation of solder bead and microstructure in Sn-58Bi Solder Joint.....	370
<i>Yang Yang , Xuwei Zhao , Limin Ma , Fuwen Zhang , Qiang Hu and Fu Guo</i>	
Analysis of Lead-free Solder Paste Based on Performance Degradation	375
<i>Cui Li, Yongping Lei, Jian Lin and Ye Tian</i>	
Study on TSV-Cu protrusion under different annealing conditions and optimization...	380
<i>Qi Deng, Lingang Huang, Jing Shang and Ming Li</i>	
One failure analysis of voltage stabilizing circuit.....	384
<i>Chuan Luo, Yongda Hu, Shengxiang Bao and Yongqiang Cui</i>	
Thermal analysis and design of SG-DBR laser array.....	387
<i>Ximeng Han, Jinwei Gao, Yonglin Yu and Qiang Cheng</i>	
Fast MSL Analysis of Microelectronic Packages by using Equal Weight Increasing Method	391
<i>Zhixue Liu, Xiaosong Ma, Qiulin Ding and Guoqi Zhang</i>	

In situ study of real-time growth behavior of IMC morphology evolution during the Sn/Cu soldering cooling stage	395
<i>Bingfeng Guo, Chengrong Jiang, Anil Kunwar, Ning Zhao and Haitao Ma</i>	
Heat transfer without phase change of gas-water two-phase flow in microgap.....	400
<i>Jinsong Zhang, Chao Liu and Ge Xu</i>	
PoP Assembly Reliability Test and Assessment Under Random Vibration Loading	406
<i>Jiang Xia, Guoyuan Li, Bin Zhou and Lanxian Cheng</i>	
Development and Application of Polymer-based Nanocomposites Dielectrics	411
<i>Suibin Luo, Wenhui Yang, Shuhui Yu, Rong Sun, Guoping Zhang and Chingping Wong</i>	
Subsurface damage mechanism of wafer thinning process revealed by molecular dynamics simulation	417
<i>Xinxin Lin, Fulong Zhu, Liping He, Yongjun Pan, Jiaquan Tao and Ke Duan</i>	
The Nonlinear Voltage-Current Characteristics of Three-phase SiC/CNTs/epoxy Composite.....	421
<i>Wang Jian, Yanbin Shen, Suibin Luo, Wenhui Yang, Shuhui Yu, Rong Sun and Chingping Wong</i>	
The morphology variation of IMC on the solder/bubble interface under different cooling rates and temperatures.....	425
<i>Haoran Ma, Anil Kunwar, Zhixian Meng, Bingfeng Guo, Ning Zhao and Haitao Ma</i>	
Impact of crosstalk on signal integrity of high density ceramic package for IC	429
<i>Xiaojun Zhang, Wei Jiang, Ling Gao and Hangzhou Li</i>	
Preparation of highly conductive adhesives by in-situ incorporation of silver nanoparticles.....	434
<i>Yankang Han, Baotan Zhang, Pengli Zhu, Qianqian Liu, Yougen Hu, Rong Sun and Chingping Wong</i>	
Fabricating Photosensitive Polymer Insulation Layer by Spin-coating for Through Silicon Vias	439
<i>Qiang Liu, Guoping Zhang, Rong Sun, S. W. Ricky Lee and Chingping Wong</i>	
Study of Package-on-Package Solder Joints under Random Vibration Load Based On Patran	443
<i>Long Zhang, Chunyue Huang, Wei Huang, Tianming Li and Jianwei Hua</i>	
Synchronous laser scanning IR imaging for chip bonding defect inspection	448
<i>Li Chen and Haijun Jiang</i>	
Theoretical study of thermomigration effect on the pancake void propagation at the current crowding zone of solder joints	451
<i>Yuexing Wang, Xu Long and Yao Yao</i>	

Analysis of solder joint shape parameters on the stress and strain of the solder joint in the random vibration condition	455
<i>Jianwei Hua, Chunyue Huang, Ying Liang, Tianming Li and Long Zhang</i>	
Thermal Evaluation of Partially Molded 2.5D Package with Pin Fin Heat Sink Cooling	461
<i>H.Y. Zhang, Z.Q. Wang and T. Y. Lin</i>	
A Microwave-Assisted Solvothermal Process to Synthesize Al-Doped ZnO Powders and its Optical and Electrical Properties	468
<i>Qianqian Liu, Pengli Zhu, Gang Li, Qian Guo, Xingtian Shuai, Rong Sun and Chingping Wong</i>	
Effect of Electromigration on Interfacial Reaction in Cu/Sn-9Zn/Cu and Cu/Sn-9Zn/Ni Interconnects.....	473
<i>Q. Zhou, Q. Li, Y. Zhou, X.J. Wang and M.L. Huang</i>	
Thermal and Flow Characteristics of Device Integrated Metallic Foam Heat Sinks with Central Impingement Flow	477
<i>H.Y. Zhang, C. Li and P.Q. Fan</i>	
Bonding Wire Fatigue Life Prediction of Power Module in Thermal Cycling Test.....	482
<i>Yuanqi Guo, Yangjian Xu, Lihua Liang and Yong Liu</i>	
Advanced Flip Chip Package on Package Technology for Mobile Applications	486
<i>Ming-Che Hsieh</i>	
Enhanced Dielectric Property and Energy Density of Polydopamine Encapsulated BaTiO ₃ Nanofibers/PVDF Nanocomposites	492
<i>Hongchang Liu, Suibin Luo, Shuhui Yu, Shanjun Ding, Rong Sun and Chingping Wong</i>	
Thermal Behavior of Microchannel Cooled High Power Diode Laser Arrays.....	499
<i>Dihai Wu, Pu Zhang, Zhiqiang Nie, Lingling Xiong, Yunfei Song, Qiwen Zhu, Yao Lu, Yifan Dang and Xingsheng Liu</i>	
Solution-casting Dielectric Composite Toward High Energy Storage Density Utilizing Molybdenum Disulfide Sheets.....	506
<i>Shanjun Ding, Shuhui Yu, Yanbin Shen, Hongchang Liu, Rong Sun and Chingping Wong</i>	
A method for measuring thermal conductivity of paste materials	510
<i>Wilson Feng, Fanny Zhao, Brian Shieh and S. W. Ricky Lee</i>	
Investigation on the effect of multiple parameters towards thermal management in 3D Stacked ICs.....	514
<i>Chengdi Xiao, Hu He, Junhui Li, Yan Wang and Wenhui Zhu</i>	

Molecular modeling of the mechanical properties and electrical conductivity of modified carbon nanotube with hydroxyl under the tensile behavior.....	520
<i>Ning Yang, Xianping Chen, Dongjing Liu, Haisheng He, Daoguo Yang and Guoqi Zhang</i>	
Study on the electromigration-induced failure mechanism of Sn-3.0Ag-0.5Cu BGA solder balls	524
<i>Yan Qiu, Mingliang Huang and Aimin Wu</i>	
Preparation of lead-free low-melting glass and its Slurry for vacuum glass packaging.....	528
<i>Ping Zhang, Hong Li, Xujia Xu, Yong Zhuo and Zirui Liu</i>	
Microstructure and interfacial reactions of Sn-Au-Ag solder joints on Cu and Ni substrates.....	534
<i>Yu Chen, Mingliang Huang and Ning Zhao</i>	
Development of a stable non-cyanide gold-tin electroplating solution for optoelectronic applications.....	538
<i>Feifei Huang, Yawei Liu and Mingliang Huang</i>	
Cross-solder interaction on interfacial reactions in Ni/Sn-3.0Ag-0.5Cu/Cu solder interconnects.....	542
<i>M. Fan, M.L. Huang and N. Zhao</i>	
Copper-Based Multimetal-Contact RF MEMS Switch	546
<i>Zhaoqun Jiang, Zhuhao Gong and Zewen Liu</i>	
Compact Size and Low Profile IPD Diplexer Design Applied on Wireless Module of Mobile Phone.....	551
<i>Sheng-Chi Hsieh, Cheng-Yuan Kung, Teck Chong Lee, and Chi-Han Chen, Chen-Chao Wang and Yuan-Hsi Chou</i>	
Parametric Study of DRIE Process for Enhancing the Profile-preserving Property of Square Through Silicon Via	555
<i>Yong Guan, Qinghua Zeng, Jing Chen, Wei Meng, Yufeng Jin and Shenglin Ma</i>	
Warpage Simulation for Multilayered MIS Substrate by Application of Image Recognition Method	558
<i>Xi He, Lin Tan, Lidong Zhang, Lingzhi Chen, Chuan Chen and Jian Cai</i>	
A New Low-cost Approach to Fabricate Silicon Dioxide for Insulator of Through-Silicon-Via	563
<i>Shuai Zheng, Junhong Zhang, Lanya Gao, Shanshan Zhang and Ming Li</i>	
Effect of Heat Treatment on the Adhesion Characteristics of Flexible Copper Clad Laminate with Ion Injection	567
<i>Yanli Zang, Jie Wang, Bing An, Yiping Wu, Weiwen Lv and Hui Liu</i>	

3D Integrated eWLB /FO-WLP Technology for PoP & SiP	571
<i>Yaojian Lin, Chen Kang, Linda Chua, Won Kyung Choi and Seung Wook Yoon</i>	
A comparative study of properties and microstructures on thermal fatigue testing of a High-power LED.....	576
<i>Jibing Chen, Nong Wan, Juying Li, Zhanwen He and Yiping Wu</i>	
Analysis of the influence of different parameters on dipping.....	580
<i>Xiaorui Zhang, Xinxin Chen, Fei Li, Wenya Tian, Junhui Li and Wenhui Zhu</i>	
Application of Failure Analysis Process Flow in Multifunctional SiP.....	584
<i>Han Guo, Genyang Mao, Jianhua Zhong, Yu Chen and Qian Wang</i>	
Design of the Printed Circuit Board for board level drop impact base on the JEDEC standard.....	588
<i>Jian Gu, Yongping Lei, Jian Lin, Hanguang Fu and Zhongwei Wu</i>	
Thermal modeling and analysis on a novel no-substrate LED COB module	592
<i>Yaoyao Nie, D.G. Yang, Miao Cai, Dongjing Liu and Yuezhu Mo</i>	
Thermal Characterization of a Novel 3D Stacked Package Structure by CFD Simulation.....	597
<i>Cheng Chen, Delong Qiu, Fengze Hou, Fengman Liu, Meiyong Su, Qidong Wang, Liqiang Cao and Lixi Wan</i>	
Fabrication and Filling Quality Optimization of the High Density and Small Size Through Silicon Via Array for Three-dimensional Packaging	603
<i>Yong Guan, Qinghua Zeng, Jing Chen, Wei Meng, Yufeng Jin and Shenglin Ma</i>	
Positive Feedback on Imposed Thermal Gradient by Interfacial Bubbles in Cu/liquid Sn-3.5Ag/Cu Joints.....	608
<i>Anil Kunwar, Haoran Ma, Meng Qi, Junhao Sun, Lin Qu, Bingfeng Guo, Ning Zhao, Yunpeng Wang and Haitao Ma</i>	
Investigation on Graphene/Ag Nano-Particles composite ink for flexible electronics	612
<i>Haixin Zhu, Nantian Nie and Fuliang Wang</i>	
Random vibration simulation and structural optimization for DC/DC converter modules assembly.....	616
<i>Tao Lu, Hui Xiao, Junhua Zhu, and Hongqin Wang</i>	
A dynamic shear experiment based on Hopkinson pressure bar.....	620
<i>Xiaoyan Niu, Yingjie Yu, Lianhua Ma and Cong Chen</i>	
Thermal Management of Downhole Electronics Cooling in Oil & Gas Well Logging at High Temperature.....	623
<i>Yupu Ma, Bofeng Shang, Run Hu and Xiaobing Luo</i>	

A Remote Phosphor Coating by Lens Wetting for Phosphor-Converted White Light-Emitting Diodes	628
<i>Xingjian Yu, Falong Liu, Yupu Ma, Mengyu Huang and Xiaobing Luo</i>	
Simulation of droplet spreading process on heterogeneous striped surface by lattice Boltzmann method.....	632
<i>Mengyu Huang, Chao Yuan, Xingjian Yu, Ruikang Wu and Xiaobing Luo</i>	
Electronic properties and work functions of silicane/fully hydrogenated h-BN and silicane/graphene nanosheets.....	636
<i>Qihua Liang, Junke Jiang, Xiang Sun and Xianping Chen</i>	
Study on the Thermal Conductivity of Graphene/Si Interface Structure based on Molecular Dynamics	642
<i>Dongjing Liu, D.G. Yang, Ning Yang and Ping Yang</i>	
Thermal transfer influence of delamination in the die attach layer of chip-on-board LED package base on entropy generation analysis.....	646
<i>Yuezhu Mo, D.G. Yang, Miao Cai, Dongjing Liu and Yaoyao Nie</i>	
Study on thermal fatigue characteristics of lead-free SAC305 solder joint by RPC.....	652
<i>Jibing Chen, Nong Wan, Juying Li, Zhanwen He and Yiping Wu</i>	
The Numerical Investigation of Influence for Shape-Parameters to the Current Carrying Capacity of Solder Joints in the CuCGA	656
<i>Zhili Zhao, Yingjie Liu, Keming Jia, Guanglin Wang and Qi Ge</i>	
Folding Differential Capacitive Accelerometer Made of LTCC.....	661
<i>Mingjie Qin, Yufeng Jin and Min Miao</i>	
The influence of aspect ratio of copper column on warpage of CuCGA structure	664
<i>Zhili Zhao, Guangyue Dang, Keming Jia, Haitao Liu and Guanglin Wang</i>	
Simulation Study on Creep Behavior of BGA Solder Joints under Temperature Cycling.....	669
<i>Xin Li, Lifeng Wang and Haitao Liu</i>	
Step Nano-mechanical Behavior of SnAgCu Solder Joints under nano-indentation method	674
<i>Lifeng Wang, Haitao Liu, Wenqin Dai and Pule Zhang</i>	
The Effect of Rare Earth Elements on the Shear Behavior of BGA Solder Joints under Board-level	679
<i>Keming Jia, Lifeng Wang, Yingjie Liu, Guangyue Dang and Haitao Liu</i>	
Effect of Resin Content on PCB Warpage and Anti-shock Performance of BGA Solder Joint.....	683
<i>Lili Ma and Hang Chen</i>	

Interface adhesion study of Cu interconnection and low-k organic materials	686
<i>Jing Shang, Jianxia Hao, Qi Deng, Tao Hang and Ming Li</i>	
A full chip scale numerical simulation method for thermal management of 3D IC	690
<i>Ningyu Wang, Yufeng Jin, Yudan Pi and Wei Wang</i>	
Failure mechanism study of power packages during MSL and temperature cycling test with finite element analysis	694
<i>Yongbo Yang, Dandong Ge and Wenjie Shen</i>	
Impact of Test Stress (T_{cmin}) on Intermittent operating life.....	700
<i>Yuan Chen and Bo Hou</i>	
Investigation on Rheological Characterization of Solder Paste.....	704
<i>Xinyue He, Yanqing Wang, Jian Zhou and Feng Xue</i>	
Investigation of jet printing performance of lead-free solder paste	709
<i>Saipeng Li, Yanqing Wang, Jian Zhou and Feng Xue</i>	
Investigation on the defect induced thermal mechanical stress for TSV	713
<i>Fei Li, Chengdi Xiao, Hu He, Junhui Li and Wenhui Zhu</i>	
The preparation and characterization of high refractive index and heat-resistant silicone nanocomposites	716
<i>Canqun Liu, Dayong Gui, Si Yu, Wei Chen and Yangyang Zong</i>	
Numerical simulation of the TSV-Cu filling by electroplating process with the accelerator and suppressor	721
<i>Hui-Hui Yuwen and Xinping Zhang</i>	
Study on Short-circuit Failure of Solder-joint Interconnections	727
<i>Zhonghua Wan and Hui Xiao</i>	
Graphene/fully hydrogenated h-BN bilayer: marvellous dihydrogen bonding and effective band structure engineering	730
<i>Junke Jiang, Qiuhua Liang, Xiang Sun and Xianping Chen</i>	
Investigation of a Suitable Material for Automotive Grade 0 Requirement Mitigating Lead Delamination	736
<i>Allen Descartin, Lidong Zhang and Jun Li</i>	
A first-principle study of H ₂ , CO, CH ₄ , H ₂ S and SO ₂ gas molecules on antimonene.....	741
<i>Ruishen Meng, Yiping Huang, Qun Yang and Xianping Chen</i>	
Thermal Resistance Investigation of Ceramic Substrates for High-Power Light-Emitting Diodes Packaging.....	745
<i>Zhen Chen, Hao Cheng, Yang Peng, and Mingxiang Chen and Ruixin Li</i>	
Adsorption of CO ₂ and CO gas on impurity-decorated phosphorenes: A first-principles study.....	749
<i>Qun Yang, Yiping Huang, Ruisheng Meng and Xianping Chen</i>	

Effects of Thermal Aging and Electromigration on Tensile Strength of SnAgCu solder joints with Different Volume.....	753
<i>Gang Wang, Limeng Yin, Zongxiang Yao and Jinzhao Wang</i>	
Tuning electronic properties of bilayer boron-phosphide by stacking order and electric field: a first principles investigation	757
<i>Chunjian Tan, Qiang Zhou and Xianping Chen</i>	
The study of adsorption behavior of small molecules on stanene: A search of superior gas sensors	762
<i>Qiang Zhou, Yiping Huang, Chunjian Tan and Xianping Chen</i>	
First-principles study of gas adsorption on Indium Nitride monolayer as gas sensor applications.....	767
<i>Xiang Sun, Yiping Huang, Junke Jiang, Qiuhua Liang, Ruishen Meng, Chunjian Tan, Qun Yang and Xianping Chen</i>	
Research on the design of mechanical shock test fixture of ceramic package for packaging CCD.....	771
<i>Zhentao Yang, Bo Peng and Ling Gao</i>	
Microstructure of Solar Cell Interconnections by Resistance Welding.....	776
<i>Xiaoliang Ji, Rong An, Chunqing Wang and Yanhong Tian</i>	
Modeling and simulation of InAs/GaSb type-II superlattices with different interface layers.....	780
<i>Kuan Zhou, Dandan Yi, Ming Li, Liancheng Zhao and Liming Gao</i>	
The study of Cu-Cu low temperature bonding using formic acid treatment with/without Pt catalyst.....	784
<i>Wenhua Yang, Yangting Lu and Suga Tadatomo</i>	
The Synthesis of Cu-Ag Core-Shell Bimetallic nanoparticles for IC bonding.....	788
<i>Jiayue Wen and Yanhong Tian</i>	
Analysis of decline of silicon-aluminum alloy cavity air tightness	791
<i>Yongqiang Cui, Yongda Hu, Shengxiang Bao, Wei Jiang, Chuan Luo, Lijie Song and Qiang Li</i>	
Theoretical investigation of electric properties of the silicene / fully hydrogenated BN heterobilayer.....	794
<i>Liming Wang, Xiang Sun, Ruishen Meng, Chunjian Tan, Qun Yang and Xianping Chen</i>	
Simulation Based Selection of the Molding Compound for Power Packaging Based on the Case Study of D ² PAK.....	798
<i>Karthik Doddaballapura, Yan Hong and Gromala Przemyslaw Jakub</i>	

Enhancement of H ₂ S detection in impurity-doped graphene	803
<i>Jiu Pang, Xiaosong Ma, Qun Yang, Ruishen Meng, Chunjian Tan, Xiang Sun and Xianping Chen</i>	
Flip Chip CSP Assembly with Cu Pillar Bump and Molded Underfill.....	807
<i>Peng Sun, Chen Xu, Jun Liu, Fei Geng, and Liqiang Cao</i>	
A simplification method of solder joints for thermal analysis in 3D packages	812
<i>Wenchao Tian and Hao Cui</i>	
Fabrication of Micro-Lens Array by means of ion wind for Chip-on Board (COB).....	816
<i>Jingcao Chu, Xiang Lei, Jiading Wu, Chunlin Xu, Tianwen Chen, Huai Zheng and Sheng Liu</i>	
A simplification method of TSV interposer for thermal analysis in 3D packages.....	820
<i>Wenchao Tian and Hao Cui</i>	
Effect of reverse leakage current on the reliability of InGaN/GaN high power LEDs	824
<i>Chenju Zheng, Jiajiang Lv, Shengjun Zhou and Sheng Liu</i>	
Reverse Pulse Current (RPC) Electrodeposition of Anti-corrosive Nickel-Tungsten Ultrathin Film for Connector Application.....	828
<i>Yuequan Wang, Tao Hang and Ming Li</i>	
Study on bumps deformation of Flip chip bonding process	832
<i>Lezhi Ye, Zhiyue Wang, Jiapeng Wang and Qizhou Zhou</i>	
Phase field simulation of the microstructural evolution and electromigration-induced phase segregation in line-type Cu/Sn-Bi/Cu solder interconnects	836
<i>Shuibao Liang, Changbo Ke, Mengying Tan, Minbo Zhou and Xinping Zhang</i>	
An Arrhenius-type constitutive model to predict the deformation behavior in lead-free solders.....	841
<i>Xiaoyan Niu, Yingjie Yu, Lianhua Ma and Cong Chen</i>	
Effect of As-Pinted Bondline Thickness on Assembling High Power Laser Diodes by Sintering of Nanosilver Paste	845
<i>Haidong Yan, Yunhui Mei, Xin Li, Hailong Li and Guoquan Lu</i>	
Study of Interconnection between Ni Nano-array and Nano-Ag solder	849
<i>Zhen Zheng, Fan Yang and Chunqing Wang</i>	
The Effects of Cu Nanoparticles addition in Sn-3.0Ag-0.5Cu Solder Paste on the Microstructure and Shear Strength of the Solder Joints.....	852
<i>Ping Liu, Xiaolong Gu, Haifeng Fu and Yang Liu</i>	
A Study on microstructure of tin-lead solder joints under thermal cycling.....	856
<i>Qihai Li, Weiwei Chen and Weiming Li</i>	

Size effect on creep deformation and fracture behavior of micro-scale Cu/Sn-3.0Ag-0.5Cu/Cu solder joints.....	860
<i>Wangyun Li, Shanshan Cao and Xinping Zhang</i>	
Scalable Synthesis and Applications of Mono-dispersed Hierarchical Silver Micro-particles	865
<i>Rui Yang, Cheng Yang, Yubin Deng, Yingying Luo, Dang Wu, Yang Wang, Xiaoya Cui and Ronghe Wang</i>	
A novel wafer level high Q planar inductor using Ni-Zn ferrite/BCB composite thick film.....	870
<i>Tao Zheng, Gaowei Xu and Le Luo</i>	
Effects of Long-term High Temperature Services on Surface Micro-structures and Components of Sm ₂ Co ₁₇ Magnets with Ni-coating.....	875
<i>Libo Ai, Shengxiang Bao, Yongda Hu, Qiang Li, Lijie Song, Xueke Wang, Yongqiang Cui, Chuan Luo and Wei Jiang</i>	
Experimental study of measuring LED's temperatures via thermocouple.....	880
<i>Qi Chen, Run Hu, Jinyan Hu, Bin Xie, Xingjian Yu and Xiaobing Luo</i>	
Combined Surface Activation Bonding for Cu/SiO ₂ Hybrid Bonding for 3D Integration.....	884
<i>Ran He, Masahisa Fujino, Tadatomo Suga and Akira Yamauchi</i>	
The Effects of Graphene-Based Films as Heat Spreaders for Thermal Management in Electronic Packaging	889
<i>Shirong Huang, Jie Bao, Hui Ye, Ning Wang, Guangjie Yuan, Wei Ke, Dongsheng Zhang, Wang Yue, Yifeng Fu, Lilei Ye, Kjell Jeppson and Johan Liu</i>	
A Novel Surface Humidity Controlled Bonder for Low-Temperature Wafer Bonding.....	893
<i>Chenxi Wang, Jikai Xu, Yannan Liu, Yanhong Tian, Chunqing Wang and Tadatomo Suga</i>	
A Design of a Multi-Sensor Platform by System-Level Integration in the Package	897
<i>Cheng Li, Han Guo, Xuesong Zhang, Qian Wang and Jian Cai</i>	
Electrical Simulation and Fabrication of High Q Spiral Inductors on Glass Substrate Using the Glass Reflow Process	901
<i>Hailiang Chen, Xiangmeng Jing and Jintang Shang</i>	
Effects of flux activators and processing parameters on solderability and stability of the aluminum solder paste used for automated assembly of LED lighting components	905
<i>Lang Zhang, Minbo Zhou, Fushun Qiu, Xiao Ma and Xinping Zhang</i>	

Magnetic and dielectric properties of $\text{Li}_{0.63}\text{Zn}_{0.37}\text{Fe}_2\text{O}_4\text{-xCaTiO}_3$ composites for LTCC application.....	910
<i>Yixing Gao, Jie Li, Qiang Li, Guokun Ma, Ximeng Yu and Huaiwu Zhang</i>	
The Failure Mechanism Investigation of the Polymer Ball Interconnected CBGA under Board Level Thermal Mechanical Stress.....	915
<i>Jeffrey ChangBing Lee, Cheng-Chih Chen, Dem Lee and Alice Lin</i>	
Integrated Manufacturing of Microphone-array Node for Wireless Sensor Network (WSN)	919
<i>Gaowei Xu, Wei Gai, Tao Zheng, Defeng Liang, Le Luo, Defeng Liang and Juying Chen</i>	
Electrical property of electrically conductive adhesives filled with micro-sized Ag flakes and modified by dicarboxylic acids.....	923
<i>Jiefei Zhu, Hong Jin, Minbo Zhou and Xinping Zhang</i>	
Fabrication of a hybrid paste consisting of microscale Ag-plated Cu flakes and nanoscale Ag particles and characterization of low-temperature sintered hybrid paste joints	927
<i>Hong Jin, Jiefei Zhu, Minbo Zhou and Xinping Zhang</i>	
Novel underfill material with low coefficient of thermal expansion.....	933
<i>Baotan Zhang, Pengli Zhu, Gang Li, Rong Sun and Chingping Wong</i>	
Influence of Li-doping on phase structure and magneto-dielectric behaviors in BiFeO_3	938
<i>Qiang Li, Shengxiang Bao, Yingli Liu, Yongda Hu, Yulan Jing, Jie Li, Libo Ai and Xueke Wang</i>	
Analysis the Interface Delamination of Cu and EMC Adhesive Material in the Cutting Process of Electronic Chip Based on Cohesive Zone Modeling.....	943
<i>Huiping Yu, Mingqing Hu, Fei Qin, Tong An, Pei Chen and Bensong Pi</i>	
Finite element simulation of the size effect on thermal fatigue behavior of solder bump joints in TSV structure	947
<i>Han Jiang, Shuibao Liang, Huihui Yuwen, Xinping Zhang</i>	
Phase field simulation of morphological evolution and migration of the microvoid in small scale solder interconnects driven by temperature gradient.....	953
<i>Shuibao Liang, Changbo Ke, Minbo Zhou and Xinping Zhang</i>	
Influence of the zinc-oxide/salt content in the aluminum soldering flux on interfacial microstructure and mechanical property of Sn-0.7Cu/Al joints in assembling LED lighting components.....	958
<i>Guoliang Chen, Minbo Zhou, Lang Zhang, Yuanjiang Lin, Yupeng Zhang and Xinping Zhang</i>	

Phase Field Crystal Simulation of Morphological Evolution and Propagation of Microcracks in the Intermetallic Compound Layer of Sn/Cu Solder Interconnects	963
<i>Wenjing Ma, Changbo Ke, Minbo Zhou and Xinping Zhang</i>	
Interfacial reactions and microstructural evolution of BGA structure Cu/Sn3.0Ag0.5Cu/Sn58Bi/Cu mixed assembly joints during isothermal aging.....	968
<i>Jiaqiang Huang, Minbo Zhou and Xinping Zhang</i>	
Dynamic wetting behavior and solder ball spattering formation of Sn-Bi solder pastes during reflow soldering process	974
<i>Mengying Tan, Minbo Zhou, Jiaqiang Huang, Faqian Ma, Xiao Ma and Xinping Zhang</i>	
10 μ m pitch Cu-Cu bonding interconnection for wafer level 3D integration	979
<i>Chongshen Song, Hengfu Li, Guangjian Feng, Liqiang Cao and Wenqi Zhang</i>	
Process Development of a New TGV Interposer for Wafer Level Package of Inertial MEMS Device	983
<i>Shenglin Ma, Kuili Ren, Yanming Xia, Jun Yan, Rongfeng Luo, Han Cai, Yufeng Jin, Mingjun Ma, Zhonghe Jin and Jing Chen</i>	
Creep deformation and fracture behavior of micro-scale Cu/Sn-3.0Ag-0.5Cu/Cu joints under electro-thermo-mechanical coupled loads	988
<i>Wangyun Li, Shanshan Cao and Xinping Zhang</i>	
Embedded Package Inductor for High Speed SerDes Design	994
<i>Boping Wu and Tingting Mo</i>	
The study on optical interconnection and assembly technology based on long-rang surface plasmon polaritons grating	996
<i>Qiqin Wei, Jing Xiao and Daoguo Yang</i>	
Enhanced thermal conductivity of QDs-polymer film for light-emitting diodes via electrospinning.....	1000
<i>Xiang Lei, Huai Zheng, Xing Guo, Zefeng Zhang, Jiading Wu, Chunlin Xu and Sheng Liu</i>	
Application of Nano Silver Sintering Technique on the Chip Bonding for Flip-chip and Vertical Light Emitting Diodes	1004
<i>Mian Tao, Yunhui Mei, S. W. Ricky Lee, Feng Yun and Guoquan Lu</i>	
Size effect on the interfacial reactions and microstructural evolution of Cu/Sn3.0Ag0.5Cu-ball/Sn3.0Ag0.5Cu-paste/Cu joints in flip-chip on BGA packaging.....	1010
<i>Jiaqiang Huang, Minbo Zhou, Wangyun Li and Xinping Zhang</i>	
Single Crystal Copper Nanocrystallization and Sintered with Silver Nanoparticles	1015
<i>Wei Zhou, Zhen Zheng and Chunqing Wang</i>	
The Study of LED Packaging Pollution failure	1018
<i>Lan Chen, Huanxiang Xu, Zilian Liu and Yingying Cai</i>	

Interfacial reaction and IMC growth between the undercooled liquid lead-free solder and Cu metallization.....	1023
<i>Minbo Zhou, Jianqiang Feng, Wu Yue and Xinping Zhang</i>	
Influence of the solder volume and reflow process on solderability of the aluminum solder paste and reliability of Sn-0.3Ag-0.7Cu/6061Al solder joints in packages of LED lighting components and structures.....	1028
<i>Yuanjiang Lin, Minbo Zhou, Xiao Ma and Xinping Zhang</i>	
Design and Characterization of Petaloid Hollow Cu Interconnection for Interposer ..	1033
<i>Yanming Xia, Kuili Ren, Shenglin Ma, Yong Guan, Han Cai, Rongfeng Luo, Jun Yan, Jing Chen and Yufeng Jin</i>	
Research and analysis on ecological evaluation technology of air conditioner	1037
<i>Li Peng, Yilin Ni and Ziqi Li</i>	
Fabrication Process of a TSV Interposer for Radio Frequency Chip with Integrated Passive Devices.....	1041
<i>Wei Meng, Yufeng Jin, Yong Guan, Qinghua Zeng and Jing Chen</i>	
Research on the interfacial reaction and mechanism of Cu/Sn/Ni copper pillar bump	1045
<i>Li Rao, Fengtian Hu, Penghui Xu, Anmin Hu, Liming Gao, Ming Li and Wen Zhao</i>	
Study on Conformal Phosphor Coating for Phosphor Converted White LEDs Through Ionic Wind Patterning.....	1051
<i>Jiading Wu, Jingcao Chu, Zefeng Zhang, Xiang Lei, Chunlin Xu, Huai Zheng, Jiahui Huang and Sheng Liu</i>	
Research of Vacuum Soldering on 10# Steel and Thick Film Ceramic Substrates	1055
<i>Ningning Wang, Zongpeng He, Binbin Zhang and Rong An</i>	
Reliability Prediction for IGBT Solder Joints Using Clech Algorithm	1059
<i>Hua Lu and Chris Bailey</i>	
Effects of post-CMP annealing on TSV Cu protrusion and leakage current.....	1064
<i>Hai Jin, Jian Cai , Qian Wang, Yang Hu and ZiYu Liu</i>	
Improved thermal design of fin heat sink for high-power LED lamp cooling	1069
<i>Yicang Huang, Shengnan Shen, Hui Li and Yunjie Gu</i>	
Theoretical and numerical study on bulge testing of ground wafer to characterize mechanical properties and residual stress	1075
<i>Pei Chen, Tian Pan, Jinglong Sun and Fei Qin</i>	
Unlocking the full Potential of Lithography for Advanced packaging	1079
<i>Jelle van der Voort, Gerrit van der Beek, and Berend van der Grinten</i>	

Using wavelength modulation spectroscopy technique to detect trace ammonia gas in near-infrared spectral region	1085
<i>Jiangping Sun, Guo Zhu, Xiongxiang Guo, Libin Zhang, Xixi Zou and Zhiyin Gan</i>	
Advanced Packaging Lithography and Inspection solutions for next generation FOWLP-FOPLP processing.....	1090
<i>Keith Best, Gurvinder Singh and Roger McCleary</i>	
TSV-Cu protrusion induced by thermal cycling test	1095
<i>Si Chen, Fei Qin, Jingyi Zhao and Tong An</i>	
Edge chipping of silicon wafers in rotating grinding.....	1099
<i>Jinglong Sun, Fei Qin, Pei Chen, Tong An and Zhongkang Wang</i>	
Thermal Fatigue Reliability Analysis of PBGA with Sn63Pb37 Solder Joints.....	1104
<i>Huaicheng Li, Tong An, Xiaorui Bie, Ge Shi and Fei Qin</i>	
Copper Pillar Bump Design Optimization Based on Taguchi Method	1108
<i>Ge Shi, Xiaorui Bie, Tong An and Fei Qin</i>	
Effect of solder flux system on rheology and jet printing performance of solder paste.....	1112
<i>Fuqiang Tu, Yanqing Wang, Jian Zhou and Feng Xue</i>	
Comparison of smoothing methods for the analysis of transient thermal resistance.....	1117
<i>Yanan Liu, Zhangfu Chen, Jianhua Zhang and Lianqiao Yang</i>	
An analysis on damage of light-emitting diodes reliability induced by electronic static discharge.....	1122
<i>Tingting Nan, Piaopiao He, Luqiao Yin and Jianhua Zhang</i>	
Instrument for water vapor transmission rate of thin-film encapsulation in aging environment	1127
<i>Sheng Li, Zhilin Zhang and Jianhua Zhang</i>	
Investigation of thermomechanical stress characteristics in high-power 808-nm AlGaAs/GaAs laser diode bars.....	1132
<i>Yanbin Qiao, Yanning Chen, Jin Shao, Dongyan Zhao, Haifeng Zhang, Yang Zhao, Chong Zhang and Wei Yang</i>	
Optimization of Heat Transfer of Microchannels in LTCC Substrate with Via Holes and Liquid Metal	1135
<i>Nian Liu, Yufeng Jin, Min Miao and Xiaole Cui</i>	
Investigation on Solder Bump Process Polyimide Cracking for Wafer Level Packaging.....	1140
<i>Lei Shi, Lin Chen, David Wei Zhang, Evan Liu and Jinxin Huang</i>	

Effect of the viscosity of organic carrier on the quality of laser-assisted glass frit bonding.....	1146
<i>Yi Li, Yanyi Xiao, Wen Wang, Luqiao Yin and Jianhua Zhang</i>	
Kirkendall Voids Evolution in Sn-Ag-In Solder Bumps and Its Effect on Reliability	1151
<i>Xiaojun Ding, Dongliang Wang, Lu Zhang, LiHua Chen and Wenji Zhang</i>	
Activated sintering and thermal properties of 1 wt.%Ag-W/Cu thermal-management composites.....	1155
<i>Guoqiang Luo, Yuan Li, Jian Zhang, Yang Dai, Qiang Shen and Lianmeng Zhang</i>	
Analysis and solution of bump deformation failure in Flip chip process.....	1159
<i>Ning Wang, Xiaoqing Li, Liqun Gu, Ying Li, Jianwei Zhou and Jonghyun Chae</i>	
3D Interconnect technology based on low temperature copper nanoparticle sintering.....	1163
<i>B. Zhang, Y.C.P. Carisey, A. Damian, R.H. Poelma, G.Q. Zhang and H.W. van Zeijl</i>	
Mechanism and process study for high performance COB development	1168
<i>Haomin Bao, Peng Zhang, Yinglei Chen, Jiangtao Liu, Jianwei Zhou and Jonghyun Chae</i>	
Thermal modeling and analysis for a novel packaging structure of CMOS image sensor	1174
<i>S. F. Han, D.G. Yang, M. Cai, D.J. Liu and Y.Y. Nie</i>	
Si/Si bonding based on self-propagating exothermic reaction	1180
<i>Anna Zhang, Zheng Zhou, Wenbo Zhu, Liping Mo and Fengshun Wu</i>	
Effect of P and Ge doping on microstructure of Sn-0.3Ag-0.7Cu/Cu solder joints.....	1185
<i>Xingchen Yan, Yichen Zhang, Chunyan Wang, Kexin Xu, Junjie Wang and Xicheng Wei</i>	
Integrated of PDMS Microfluidic Channel with cantilever based bio-sensor	1189
<i>Shuaipeng Wang, Yanning Chen, Haifeng Zhang and Dongyan Zhao</i>	
Temperature monitoring of phosphor/silicone mixture in multichip-on board packaged light-emitting diodes with Bragg grating-based sensor	1192
<i>Quan Chen, Min Wang, Shengjun Zhou and Sheng Liu</i>	
Impacts of back-grinding process parameters on the strength of thinned silicon wafer.....	1197
<i>Xiaorui Bie, Fei Qin, Linfeng Zhou, Jinglong Sun, Pei Chen and Zhongkang Wang</i>	
Effect of the Au bonding pad contamination on the wettability of Au/Sn-3.0Ag-0.5Cu/Au solder joints in flux-free laser jet solder ball bonding process.....	1201
<i>Wu Yue, Minbo Zhou and Xinpeng Zhang</i>	
Dynamic Stiffness Analysis of Repetitive Control and Applied to Advanced Metrology Analyzer.....	1206
<i>Wu-Sung Yao, Ian Hu, Golden Kao, Mengkai Shih, and Karen Chen</i>	

Thermal dissipation enhancement of LED filament bulb by ionic wind.....	1212
<i>Chunlin Xu, Zefeng Zhang, Jingcao Chu, Jiading Wu, Xiang Lei, Huai Zheng and Sheng Liu</i>	
Via last TSV process for wafer level packaging.....	1216
<i>Xiangmeng Jing, Fengwei Dai, Wenqi Zhang and Liqiang Cao</i>	
Characteristics of coaxial-annular through-silicon-via in microwave field	1219
<i>Fengjuan Wang, Gang Wang and Ningmei Yu</i>	
The Role of Ultrasonics in Formation of Bonding for Solid State Solder Interconnections.....	1222
<i>Zhuo Chen, Xianhe Zhang, Xian Fang, Hu He and Wenhui Zhu</i>	
Model Simplification Method for PBGA Assembly Simulation under Random Vibration.....	1226
<i>Tao Tang, Tong An and Fei Qin</i>	
Dynamic analysis of piezo-based accelerometer with a symmetric gapped cantilever array.....	1230
<i>Zhang Luo, Chaojun Liu, Shuai Yu, Yong Xu and Sheng Liu</i>	
An a-IGZO TFT Pixel Circuit with Improved Current Mirror for Active Matrix Organic Light Emitting Diode Displays.....	1235
<i>Lilin Liu, Kun Sun, Xiangying Zhang, Dongdong Teng and Gang Wang</i>	
Failure Mechanisms and Package Reliability Issues in Optocouplers	1240
<i>Huiwei Wu, Shengzong He, Xuanlong Chen, Guangning Xu and Dengyun Lei</i>	
Design of 14-14.5GHz Semiconductor Microwave Digital Phase Shifters	1244
<i>Dan Yang, Zhaojun Zhu and Peng Liu</i>	
Vibration reliability test and analysis of plastic ball grid array	1247
<i>Huaicheng Li, Tong An, Tao Tang and Fei Qin</i>	
In-situ Assembly for MEMS Based Pressure Sensor	1251
<i>Yuanfu Shang, Wan Cao and Sheng Liu</i>	
Utilizing CdSe/ZnS Core/Shell QDs to Improve the Modulation Bandwidth of WLED for Visible Light Communication.....	1257
<i>Xiangtian Xiao, Haodong Tang, Tianqi Zhang, Wei Chen, Wanli Chen, Junjie Hao, Rui Wang and Kai Wang</i>	
A novel manufacturing scheme for TSVs with porous polymer insulation liners	1262
<i>Ke Wu and Zheyao Wang</i>	
Integrated Circuit ESD Protection Structure Failure Analysis Based on TLP Technique	1267
<i>Jiang Xie, Qian Shi and Yue Gao</i>	

PEM/OBIRCH in Failure Localization of Flip-chip	1272
<i>Zhe Sun, Xuanlong Chen and Daotan Lin</i>	
Large-scale Alignment Quantum Rods Film for High Efficiency Wide Color Gamut LED Display.....	1275
<i>Zuoliang Wen, Shang Li, Jing Qin, Junjie Hao, Tianqi Zhang, Haodong Tang and Kai Wang</i>	
Influence of temperature on pumping rate and crystalline grain of copper filler in through-silicon vias	1280
<i>Xiaoxu Pan, Pengfei Huang, Fei Su, Yong Guan, Shenglin Ma and Jing Chen</i>	
Application of Three-Dimensional X-Ray Microscopy in Failure Analysis for Plastic Encapsulated Microelectronics.....	1284
<i>Daotan Lin and Zhe Sun</i>	
QFP plastic cavity carrier design for MPW chip package.....	1288
<i>Zhenchao Li, Qian Wang, Yu Chen, Guangjun Cui and Zhaolin Liu</i>	
Conductive Property of Inkjet Printed Film by Reactive Silver Inks on PET Flexible Substrate	1293
<i>Xingming Tang, Hongbo Xu, Ximing Liu and Hongyun Zhao</i>	
Research on failure mechanism of the phosphors and sealants for white light emitting diode package.....	1297
<i>Hailin Wu, Lin Zhou, Haimei Luo, Wenpeng Xiao, Minggao Cao, Yimin Hu, Gang Jing and Yan Liu</i>	
Design and analysis of video information transmission system based on visible LED light communication.....	1301
<i>Nanbo Li, Zaifu Cui, Han Lu, Xuanyou Chen, Junyan Wei, Miao Cai, Ping Zhang and Daoguo Yang</i>	
High Reliable Wire Bonding Technology in Microwave Module Packaging.....	1307
<i>Zongjie Han, Wei Yan, Yongfang Hu and Xiaoxuan Li</i>	
N-layer Screen Printed Ceramic on Stainless Steel Based Pressure Sensor.....	1311
<i>Xiaoping Wang, Dengfeng Wu, Wan Cao, Fanliang Li, Xiaoyan Wang and Sheng Liu</i>	
Novel fabrication method of LED freeform lens based on electrohydrodynamic	1315
<i>Zhili Zhao, Huai Zheng, Xing Guo, Zefeng Zhang, Jinchao Chu and Sheng Liu</i>	
Highly Efficient Chip Scale Package (CSP) LED Based on Surface Patterning	1318
<i>Tianqi Zhang, Haodong Tang, Shang Li, Zuoliang Wen, Xiangtian Xiao, Yulong Zhang, Fei Wang and Kai Wang</i>	
Typical Failure Mechanisms of Plastic Encapsulated Devices' Internal Connection	1323
<i>Jinbao Cai, Xuanlong Chen, Huiwei Wu and Xianjun Kuang</i>	

Study on the Electrical Performance of One Differential Pair Bonding Fingers on Different Layers in Wire Bonding Package	1327
<i>Feng Lu, Yusheng Cao and Binhao Lian</i>	
The Finite Element Analysis on Reliability of Gold Bump	1330
<i>Jiansong Liu, Quanbin Yao, Pengrong Lin, Yusheng Cao and Binhao Lian</i>	
INVESTIGATION OF EPOXY MOLDING COMPOUND WITH HIGH ADHESION ON PD PLATED LEAD FRAMES.....	1334
<i>Hongjie Liu, Wei Tan, Erzeng Shi, Lanxia Li, Xingming Cheng and Jianglong Han</i>	
Investigation on Graphene/Ag Nano-Particles composite ink for flexible electronics	1337
<i>Hu He, Zhuo Chen, Fuliang Wang and Wenhui Zhu</i>	
Failure analysis on the mechanical property of Through-Silicon Vias interface using a cohesive zone model	1341
<i>Ganglong Li, Zhuo Chen, Sen Cao, Honglong Luo, Liulu Jiang and Wenhui Zhu</i>	
Study on the formation mechanism of liquid film on the Au/Cu bilayered film	1346
<i>W. Liu, S.D. Zhang, Y.F. Jin, T.Z. Zhang and L.C. Guo</i>	
Thermal Effects of Packaging Material and Structure on High Power White LEDs	1350
<i>Xi Yang, Zili Wang, Yi Ren and Bo Sun</i>	
Thermal properties of TIM using CNTs forest in electronics packaging	1355
<i>Dongsheng Zhang, Jiawen Liu, Shuangxi Sun, Shirong Huang, Jie Bao, Ning Wang, Johan Liu and Xiuzhen Lu</i>	
Electrical characteristics and thermal reliability of blind through-silicon-vias with polyimide liners.....	1360
<i>Bin Liu, Yangyang Yan, Ziyue Zhang, Zhiming Chen and Yingtao Ding</i>	
A Brief Overview of Atomic Layer Deposition and Etching in the Semiconductor Processing.....	1365
<i>Guangjie Yuan, Ning Wang, Shirong Huang and Johan Liu</i>	
Effect of Pb Content on Thermal Fatigue Life of Mixed SnAgCu-SnPb Solder Joints	1369
<i>Qiang Wen, Xunping Li and Guoyuan Li</i>	
A Wet Process To Etch Arrayed Vias For Through Silicon Via Application Of 3D Packaging.....	1373
<i>Lanya Gao, Junhong Zhang, Shuai Zheng, Shanshan Zhang and Ming Li</i>	
Research on thermal-electric coupling effect of the Copper Pillar Bump in the Flip Chip Packaging.....	1377
<i>Zhiwei Fu, Bin Zhou, Ruohe Yao and Xunping Li</i>	

An Analytical Model for the Underfill Flow Driven by Capillary Forces in Chip Packaging	1381
<i>Wan Luo, Junjie Liang, Yun Zhang and Huamin Zhou</i>	
The Effect of Gap Height on Non-Newtonian Underfill Flow in Chip Packaging: Experiments and Simulations.....	1387
<i>Wan Luo, Junjie Liang, Yun Zhang and Huamin Zhou</i>	
Applying Novel Non-destructive Failure Analysis Techniques on the Package Related Failures	1391
<i>C.H. Chu, Y.T. Lin, W.J. Hsu, C.T. Chang, P.S. Kuo and Y.F. Hsieh</i>	
Thermo-plastically Stretchable Electronic and Sensor circuits	1396
<i>Imen Chtioui, Frederick Bossuyt and Mohamed Hedi Bedoui</i>	
Experimental Investigation of Paraffin Wax with Graphene Enhancement as Thermal Management Materials for Batteries	1401
<i>Yan Zhang, Wang Yue, Shaochun Zhang, Shirong Huang and Johan Liu</i>	
MEMS Bandpass Filter Based On Substrate Integrated Waveguide Structure	1406
<i>Zehua Cao and Chao Wang</i>	
Design of Stepped Impedance Resonator Bandpass Hairpin Filter	1409
<i>Zehua Cao and Chao Wang</i>	
High efficiency GaN Power Amplifier on C band	1413
<i>Houlu Tang, Zhaobi Wang and Xiaolong Wang</i>	
The Microanalysis of Copper-Coated Diamond Composite Powders Prepared by Electroless Plating.....	1418
<i>Lianmeng Zhang, Shuya Xiong, Ruxia Liu, Jian Zhang, Guoqiang Luo and Qiang Shen</i>	
Failure analysis of die-bonding interfaces between LED chip and heat sink	1423
<i>W. Liu, S.D. Zhang, Y.F. Jin, T.Z. Zhang and L.C. Guo</i>	
ESD damage mechanism study of metal fuse area.....	1427
<i>Yaqun Zhang, Huirong Zhang, Chintien Chiu and Haoran Tian</i>	
Application of Orthogonal Experiment Method of Copper Samples of Small Size in Energy Dispersive Spectroscopy Quantitative Analysis.....	1430
<i>Xueke Wang, Shengxiang Bao, Yongda Hu, Qiang Li and Libo Ai</i>	
Simulation and Design of Ku Band seven bit Digital Phase Shifter Based on ADS	1437
<i>Dan Yang, Zhaojun Zhu and Peng Liu</i>	
Research on process of Cu-Hf infiltration on 304 stainless steel by double glow plasma technology	1440
<i>Jian Wang, Yan Tang, Yan Wang, Jinyong Xu and Yiguang Wang</i>	
A Compact Dual-band Antenna for C-band Applications	1445
<i>Jianzhi He and Xi Wei</i>	

A Wide-Band Waveguide Orthomode Transducer	1447
<i>Xi Wei and Jianzhi He</i>	
Electromigration-induced morphology and microstructure changes in Sn58Bi/Sn3.0Ag0.5Cu compositional solder interconnect.....	1450
<i>Fengjiang Wang, Lili Zhou, Jiheng Wang and Xiaojing Wang</i>	
Effects of Impurities and Grain Size on Welding Performance of T3 Copper	1454
<i>Xueke Wang, Shengxiang Bao, Yongda Hu, Qiang Li and Libo Ai</i>	
An efficient approach for designing Highpass Filter.....	1461
<i>Shuhuai Dai</i>	
An Analytical Model for Capacitance of Silicon-Insulator-Silicon Through-Silicon-Vias.....	1464
<i>Bohao Li, An'An Li, Miao Xiong, Jianxun Yang, Zhiming Chen and Yingtao Ding</i>	
Research on Thermal Coupling Effect of Multi-heating Sources in MCM	1469
<i>Ji Cheng and Xiaoqi He</i>	
A dual-band compact branch line coupler based on r-shaped transformer	1476
<i>Peng Liu and Dan Yang</i>	
A new Dual band wilkinson power divider.....	1480
<i>Peng Liu and Dan Yang</i>	
Tape & Reel Single Side Peel Force Test Verification	1483
<i>Shuai Qiao, Luqi Tao, Tianling Ren and Zhaolin Liu</i>	
Effect of Voltage and Gap on the Morphology of the Ni Micro-column by Localized Electrochemical Deposition.....	1487
<i>Tao Chen, Fuliang Wang, Jiadong Sun and Junling Gao</i>	
Disposable electrochemical immunosensor based on r-GO/Thi/AuNPs nanocomposites for detection of NSE.....	1493
<i>Jinping Luo, Yang Wang, Hui ren Xu, Yan Fan, Juntao Liu and Xinxia Cai</i>	
Server Platform Power Design Optimization using Switching Voltage Regulator Modeling Techniques	1497
<i>Amarjoyt Singh and Qing Zhou</i>	
The effect of substrate temperature on the solidification of tin bonding wire via droplets jetting forming.....	1503
<i>Dan Su, Chunxi Wang, Sheng Liu, Xiaotian Li and Honghai Zhang</i>	
Effects of drive air pressure, exhaust pipe length and deposition height on the morphology of Sn99.3Cu0.7 solder ball	1508
<i>Daokun Liao, Dan Su, Sheng Liu, Xiaotian Li and Honghai Zhang</i>	

Effect of droplet spacing & deposition height on Sn conductive lines by pneumatic diaphragm drop-on-demand technology.....	1512
<i>Chunxi Wang, Daokun Liao, Sheng Liu, Xiaotian Li and Honghai Zhang</i>	
Thermal Imaging Based on Thermoreflectance Addresses the Challenges for Thermal Analysis of Today's Advanced Complex Devices	1517
<i>Dustin Kendig, Andrew A. O. Tay and Ali Shakouri</i>	
Investigation of Cu Wire Neck Crack under Thermal Cycling Test.....	1522
<i>Haibo Fan, WW Chow, Kan Lee, Fei Wong, Haibin Chen and Jingshen Wu</i>	
Characterization of 2.5D package warpage through Shadow Moiré Technique and Failure Analysis	1526
<i>Haiyan Liu, Daquan Yu, Hongwen He, Xiaoyang Liu and Tingyu Lin</i>	