

Transactions on Components, Packaging and Manufacturing Technology Best Paper Award

Past Recipients

Advanced Packaging Technologies Category:

2021 ["Fan-Out Panel-Level Packaging of Mini-LED RGB Display"](#) John H. Lau; Cheng-Ta Ko; Curry Lin; Tzvy-Jang Tseng; Kai-Ming Yang; Tim Xia; Puru Bruce Lin; Chia-Yu Peng; Eagle Lin; Leo Chang; Ning Liu; Show May Chiu; Tzu Nien Lee; Volume 11, Issue 5, May 2021

2020 ["Thin Film Metallization Stacks Serve as Reliable Conductors on Ceramic-based Substrates for Active Implants"](#) Patrick Kiele, Paul Čvančara, Michael Langenmair, Matthias Mueller, Thomas Stieglitz; Volume 10, Issue 11, November 2020

2019 ["Transferable-Tip Technology for Fine-Pitch Probes and Interconnections"](#) Steven Wright, Yang Liu; Volume 9, Issue 9, August 2019

2018 ["Mechanical Reliability of Thick-Film Materials for High Temperature Packaging"](#) Zhangming Zhou, R. Wayne Johnson, Michael C. Hamilton; Volume 8, Issue 6, June 2018

2018 ["Integrated Sensor System for DNA Amplification and Separation based on Thin Film Technology"](#) Francesca Costantini, Giulia Petrucci, Nicola Lovecchio, Marco Nardecchia, Augusto Nascetti, Giampiero de Cesare, Lorena Tedeschi, Claudio Domenici, Albert Ruggi, Pisana Placidi, Andrea Scorzoni, Domenico Caputo; Volume 8, Issue 7, July 2018

2016 ["Finite Element Analysis and Experimental Test for A Capped-Die Flip Chip Package Design"](#) Yuci Shen, Leilei Zhang, Weihang Zhu, Jiang Zhou, Xuejan Fan; Volume 6, Issue 9, September 2016

2015 ["Thermal Remote Phosphor Coating for Phosphor-Converted White-Light-Emitting Diodes"](#) [Thermal Remote Phosphor Coating for Phosphor-Converted White-Light-Emitting Diodes"](#) Xingjian Yu, Bin Xie, Qi Chen, Yupu Ma, Ruikang Wu, and Xiaobing Luo; Volume 5, Issue 9, September 2015

2014 ["Self-Aligned Silicon Interposer Tiles and Silicon Bridges Using Positive Self-Alignment Structures and Rematable Mechanically Flexible Interconnects"](#) Hyung Suk Yang; Chaoqi Zhang; Bakir, M.S.; Volume 4, Issue 11, November 2014

Components: Characterization and Modeling Category:

2022 ["A Mechanistic Model for Plastic Metal Line Ratcheting Induced BEOL Cracks in Molded Packages"](#) Chun-Pei Chen, Yaxiong Chen, Ganesh Subbarayan, Hung-Yun Lin, Siva Gurrum; Volume 12, Issue 3, March 2022

2021 ["Cascaded Multicore Vapor Chambers for Intrapackage Spreading of High-Power Heterogeneous Heat Loads"](#) Soumya Bandyopadhyay; Amy M. Marconnet; Justin A. Weibel; Volume 11, Issue 6, June 2021

2020 ["Experimental Study of Relationship between Arc Light Intensity and Temperature in Low Voltage Switching Devices"](#) Dongkyu Shin, Thomas G. Bull, John W. McBride; Volume 10, Issue 11, November 2020

2020 ["Steady-State Parametric Optimization and Transient Characterization of Heat Flow Regulation with Binary Diffusion"](#) Tanya Liu, James W. Palko, Joseph S. Katz, Feng Zhou, Ercan M. Dede, Mehdi Asheghi, Kenneth E. Goodson; Volume 10, Issue 12, December 2020

2019 ["Evaluation of Additively Manufactured Microchannel Heat Sinks"](#) Ivel L. Collins, Justin Weibel, Liang Pan and Suresh V. Garimella; Volume 9, Issue 3, March 2019

2017 "[Monolithic Integration of a Micropin-fin Heat Sink in a 28 nm FPGA](#)" Thomas Sarvey, Yang Zhang, Colman Cheung, Ravi Gutala, Arifur Rahman, Aravind Dasu, Muhannad S. Bakir; Volume 7, Issue 10, October 2017

2016 "[Chip to Chiller Experimental Cooling Failure Analysis of Data Centers: The Interaction Between IT and Facility](#)" Husam Alissa, Kourosh Nemati, Bahgat Sammakia, Mark Seymour, Russell Tipton, Davide Mendo, Dustin Demetriou, Ken Schneebeli; Volume 6, Issue 9, September 2016

2015 "[Cox-Proportional Hazards Modeling in Reliability Analysis—A Study of Electromagnetic Relays Data](#)" Lingling Li, Dongjuan Ma, and Zhigang Li; Volume 5, Issue 11, November 2015

2013 "[POWER MULTIPLEXING FOR THERMAL FIELD MANAGEMENT IN MANY-CORE PROCESSORS](#)" Minki Cho, Chad Kersey, Student Member, IEEE, Man Prakash Gupta, Nikhil Sathe, Satish Kumar, Sudhakar Yalamanchili, Senior Member, IEEE, and Saibal Mukhopadhyay, Senior Member, IEEE; Volume 3, Number 1, January 2013

2012 "[Microstructurally Adaptive Model for Primary and Secondary Creep of Sn-Ag-Based Solders](#)" Praveen Kumar, Zhe Huang, Sri Chaitra Chavali, Dennis K. Chan, Indranath Dutta, Ganesh Subbarayan, and Vikas Gupta; Volume 2 Number 2, February 2012

2011 "[Phenomenological Study of the Effect of Microstructural Evolution on the Thermal Fatigue Resistance of Pb-Free Solder Joints](#)" Richard Coyle, John Osenbach, Maurice N. Collins, Heather McCormick, Peter Read, Debra Fleming, Richard Popowich, Jeff Punch, Michael Reid, and Steven Kummerl; Volume 1 Number 10, October 2011

Electrical Performance of Integrated Systems Category:

2022 "[Fast and Stable Circuit Simulation via Interpolation- Supported Numerical Inversion of the Laplace Transform](#)" Emad Gad, Ye Tao, Michel Nakhla; Volume 12, Issue 1, January 2022

2021 "[Towards 224Gb/s Electrical Signaling - Modulation, Equalization and Channel Option](#)" Masum Hossain; Wendemagegnehu T. Beyene; Volume 11, Issue 3, March 2021

2019 "[Stochastic Collocation with Non-Gaussian Correlated Process Variations: Theory, Algorithms and Applications](#)" Chunfeng Cui and Zheng Zhang; Volume 9, Issue 5, July 2019

2017 "[Big-Data Tensor Recovery for High-Dimensional Uncertainty Quantification of Process Variations](#)"; Zheng Zhang, Tsui-Wei Weng, Luca Daniel; Volume 7, Issue 5, May 2017

2017 "[High-Fidelity, High-Performance Computational Algorithms for Intra-System Electromagnetic Interference Analysis of IC and Electronics](#)" Zhen Peng, Yang Shao, Hong-Wei Gao, Shu Wang, Shen Lin; Volume 7, Issue 5, May 2017

2016 "[Efficient Total Crosstalk Analysis of Large Via Arrays in Silicon Interposers](#)" David Dahl, Torsten Reuschel, Jan Birger Preibisch, Xiaomin Duan, Ivan Ndip, Klaus-Dieter Lang, Christian Schuster; Volume 6, Issue 12, December 2016

2015 "[Modeling of Through-Silicon Via \(TSV\) Interposer Considering Depletion Capacitance and Substrate Layer Thickness Effects](#)" Ki Jin Han, Madhavan Swaminathan, and Jongwoo Jeong; Volume 5, Issue 1, January 2015

2014 "[5-Gb/s and 10-GHz Center-Frequency Gaussian Monocycle Pulse Transmission Using 65-nm Logic CMOS With On-Chip Dipole Antenna and High- k Interposer](#)" Kubota, S.; Toya, A. ; Sugitani, T. ; Kikkawa, T.; Volume 4, Issue 7, July 2014

2013 "[OPTIMUM ORDER ESTIMATION OF REDUCED MACROMODELS BASED ON A GEOMETRIC APPROACH FOR PROJECTION-BASED MOR METHODS](#)" Behzad Nouri, Student Member, IEEE, Michel S. Nakhla, Life Fellow, IEEE, and Ramachandra Achar, Fellow, IEEE; Volume 3, Number 7, July 2013

2012 "[Extension of the Contour Integral Method to Anisotropic Modes on Circular Ports](#)" Xiaomin Duan, Renato Rimolo-Donadio, Heinz-Dietrich Brüns, and Christian Schuster; Volume 2 Number 2, February 2012

2011 "[Efficient Implicit–Explicit Time Stepping Scheme With Domain Decomposition for Multiscale Modeling of Layered Structures](#)" Jiefu Chen, Luis Eduardo Tobon, Mei Chai, Jason A. Mix, and Qing Huo Liu; Volume 1 Number 9, September 2011

Electronics Manufacturing Category:

2020 "[Effects of Thickness and Crystallographic Orientation on Tensile Properties of Thinned Silicon Wafers](#)" Sangmin Lee, Jae-Han Kim, Young Suk Kim, Takayuki Ohba, Taek-Soo Kim; Volume 10, Issue 2, February 2020

2016 "[Materials Characteristics of Ag-alloy Wires and their Applications in Advanced Packages](#)" Chih-Hsin Tsai, Chien-Hsun Chuang, Hsing-Hua Tsai, Jun-Der Lee, Dennis Change, Hsin-Jung Lin, Tung-Han Chuang; Volume 6, Issue 2, February 2016

2015 "[Model for Inverse Determination of Process and Material Parameters for Control of Package-on-Package Warpage](#)"[Control of Package-on-Package Warpage](#)" Pradeep Lall; Kewal Patel; Vikalp Narayan; Volume 5, Issue 9, September 2015

2014 "[Photonic Flash Soldering of Thin Chips and SMD Components on Foils for Flexible Electronics](#)" van den Ende, D.A. ; Hendriks, R. ; Cauchois, R. ; Kusters, R.H.L. ; Cauwe, M. ; Groen, W.A. ; van den Brand, J.; Volume 4, Issue 11, November 2014

2013 "[3-D NUMERICAL AND EXPERIMENTAL INVESTIGATIONS ON COMPRESSION MOLDING IN MULTICHIP EMBEDDED WAFER LEVEL PACKAGING](#)" Lin Ji, Dexter Velez Sorono, Tai Chong Chai, and Xiaowu Zhang, Senior Member, IEEE; Volume 3, Number 4, April 2013

2012 "[Testing of Copper Pillar Bumps for Wafer Sort](#)" Bahadir Tunaboylu; Volume 2 Number 6, June 2012

2011 "[Influence of Thermal-Cycling-Induced Failures on the RF Performance of Ceramic Antenna Assemblies](#)" Jussi Putaala, Olli Nousiainen, Mikko Komulainen, Tero Kangasvieri, Heli Jantunen, Markku Moilanen; Volume 1 Number 9, September 2011

Packaging Technologies Category:

2013 "[SUPERHYDROPHOBIC NANOCOMPOSITE COATING FOR RELIABILITY IMPROVEMENT OF MICROELECTRONICS](#)" Yan Liu, Ziyin Lin, Kyoungsik Moon, and Ching Ping Wong; Volume 3, Number 7, July 2013

2012 "[Silicon Carbide Power Modules for High-Temperature Applications](#)" Michael J. Palmer, R. Wayne Johnson, Tracy Autry, Rizal Aguirre, Victor Lee, and James D. Scofield; Volume 2, Number 2, February 2012

2011 "[In-Situ Sensor-Matrix to Determine Package-Induced Stresses](#)" Christian Djelassi, Thomas Aichinger, Michael Glavanovics, and Manfred Kaltenbacher, ; Volume 1 Number 11, November 2011
Advanced Packaging Category:

2013 "[EVALUATION OF ANISOTROPIC CONDUCTIVE FILMS BASED ON VERTICAL FIBERS FOR POST-CMOS WAFER-LEVEL PACKAGING](#)" Mamadou Diobet Diop, Member, IEEE, Moufid Radji, Senior Member, IEEE, Anas A. Hamoui, Yves Blaquière, Member, IEEE, and Ricardo Izquierdo, Member, IEEE; Volume 3, Number 4, April 2013

2012 "[Compact High-Gain mmWave Antenna for TSV-Based System-in-Package Application](#)" Sanming Hu, Yong-Zhong Xiong, Lei Wang, Rui Li, Jinglin Shi, and Teck-Guan Lim; Volume 2 Number 5, May 2012

2011 "[Wafer Scale Integration of CMOS Chips for Biomedical Applications via Self-Aligned Masking](#)" Ashfaque Uddin, Kaveh Milaninia, Chin-Hsuan Chen, and Luke Theogarajan; Volume 1 Number 12, December 2011

Predecessor Publications (Prior To Merger In 2011)

Transactions on Components and Packaging Technologies Best Paper Award Recipients

2010 "Development of 3-D Silicon Module With TSV for System in Packaging" by Navas Khan, Vempati Srinivasa Rao, Samuel Lim, Ho Soon We, Vincent Lee, Xiaowu Zhang, E. B. Liao, Ranganathan Nagarajan, T. C. Chai, V. Kripesh and John H. Lau ; VOL. 33, NO. 1, March 2010

2009 "Effect of Permittivity and Permeability of a Flexible Magnetic Composite Material on the Performance and Miniaturization Capability of Planar Antennas for RFID and Wearable Wireless Applications" by Lara J. Martin, Sooliam Ooi, Daniela Staiculescu, Michael D. Hill, C. P. Wong, and Manos M. Tentzeris; VOL. 32, NO. 4, December 2009

2008 "Interfacial Delamination Mechanisms during Soldering Reflow with Moisture Preconditioning", by Xuejun Fan, G.Q. Zhang, Willem D. van Driel, Leo J. Ernst, VOL. 31, NO. 2, June 2008

2007 "A Practical Implementation of Silicon Microchannel Coolers for High Power Chips," by Evan G. Colgan, Bruce Furman, Michael Gaynes, William S. Graham, Nancy C. LaBianca, John H. Magerlein, Robert J. Polastre, Mary Beth Rothwell, R. J. Bezama, Kenneth C. Marston, Hilton Toy, Jamil Wakil, Jeffrey A. Zitz, Rehan Choudhary, Roger R. Schmidt, VOL. 30, NO. 2, June 2007

2006 "On-chip high speed localized cooling using superlattice microrefrigerators" by Yan Zhang, James Christofferson, Ali Shakouri, Gehong Zeng, John E. Bowers, Edward T Croke, VOL. 29, NO. 2, June 2006

2005 "Increasing the Accuracy of Structure Function Based Thermal Material Parameter Measurements" by Márta Rencz , András Poppe, Ernő Kollár, Sándor Ress, Vladimir Székely, VOL. 28, NO.1 , March 2005 issue

2004 "Characterization of Hygroscopic Swelling Behavior of Mold Compounds and Plastic Packages" by Eric Stellrecht, Bongtae Han, Michael G. Pecht, VOL. 27, NO. 3, September 2004

2003 "Thermal Management of BioMEMS: Temperature Control for Ceramic-based PCR and DNA Detection Devices" by Daniel J Sadler, Rajnish G, Changrani, Peter C Roberts, Chia-Fu Chou, Frederic Zenhausern, VOL. 26, NO. 2, June 2003

2002 "Experimental and Theoretical Characterization of an Antiferroelectric Ceramic Capacitor of Power Electronics," Jacobus D. van Wyk coauthored with Colin Kydd Campbell and Rengang Chen, VOL. 25, NO. 2, June 2003

2001 "Interfacial Fracture Toughness for Delamination Growth Prediction in a Novel Peripheral Array Package" by Suresh Sitaraman, Viswanathan Sundararaman, VOL. 24, NO. 2, June 2003

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2010 "Noise Coupling Mitigation in PWR/GND Plane Pair by Means of Photonic Crystal Fence: Sensitivity Analysis and Design Parameters Extraction" by Antonio Ciccomancini Scogna, Tzong-Lin Wu, VOL. 33, NO. 3, August 2010

2009 "Through-Silicon via Interconnection for 3D Integration Using Room-Temperature Bonding" by Naotaka Tanaka, Yasuhiro Yoshimura, Michihiro Kawashita, Toshihide Uematsu, Chuichi Miyazaki,

Norihisa Toma, Kenji Hanada, Masaki Nakanishi, Takahiro Naito, Takafumi Kikuchi, and Takashi Akazawa, VOL. 32, NO. 4, November 2009

And

"Fast Methodology for Determining Eye Diagram Characteristics of Lossy Transmission Lines" by Wei-Da Guo, Jeng-Hau Lin, Chien-Min Lin, Tian-Wei Huang, and Ruey-Beei Wu, VOL. 32, NO. 1, February 2009

2008 "Accurate System Voltage and Timing Margin Simulation in High-Speed I/O System Designs", Kyung Suk (Dan) Oh, Frank Lambrecht, Sam Chang, Qi Lin, Jihong Ren, Chuck Yuan, Jared Zerbe, Vladimir Stojanovic, VOL. 31, NO. 4, November 2008

2007 "Quilt Packaging: High-Density, High-Speed Interchip Communications," by Gary H. Bernstein, Qing Liu, Minjun Yan, Zhuowen Sun, David Kopp, Wolfgang Porod, Greg Snider and Patrick Fay, VOL. 30, NO. 4, November 2007

And

"Stability, Causality, and Passivity in Electrical Interconnect Models," by Piero Triverio, Stefano Grivet-Talocia, Flavio G. Canavero, Michel S. Nakhla, Ramachandra Achar, VOL. 30, NO. 4, November 2007

2006 "Novel method for simultaneous formation of wires and vias of a printed circuit board using nanoporous body" by Koji Asakawa, Shigeru Matake, Yasuyuki Hotta and Toshiro Hiraoka, VOL. 29, NO. 2, May 2006

2005 No award given

2004 "Characterization of Hygroscopic Swelling Behavior of Mold Compounds and Plastic Packages" by Eric Stellrecht, Bongtae Han, Michael G. Pecht, VOL. 27, NO. 3, September 2004

2003 "High-Density 3D Packaging Technology for CCD Micro-Camera System Module" by Hiroshi Yamada, Takashi Togasaki, Masanobu Kimura, Hajime Sudo, VOL. 26, NO. 2, May 2003

Transactions on Electronics Packaging Manufacturing Best Paper Award Recipients

2010 "Correlation Between Whisker Initiation and Compressive Stress in Electrodeposited Tin-Copper Coating on Copper Leadframes" by Takahiko Kato, Haruo Akahoshi, Masato Nakamura, Takeshi Terasaki, Tomio Iwasaki, Tomoaki Hashimoto, Asao Nishimura, VOL. 33, NO. 3, July 2010

2009 "Fabrication of Molded Interconnection Devices by Ultrasonic Hot Embossing on Thin Polymer Films" by Puttachat Khuntontong, Thomas Blaser, and Werner Karl Schomburg; VOL. 32, NO. 3, July 2009