Publication list

Until 2015.9, 7 book chapters, 3 standards, 37 journal papers, 59 conference papers, 35 patents.

Thesis

[1] **C.-A. Yuan**, "Investigation of nano-scaled structural mechanics using the clustered atomistic-continuum method," PhD Thesis, Dep. of Power mechanics, National Tsing Hua University, Hsinchu, Taiwan, 2005.

Book Chapters (7)

- [1] O. Van der Sluis, **C. Yuan**, W. van Driel, and G. Zhang, "Advances in delamination modeling," in *Nanopackaging: Nanotechnologies and Electronics Packaging*, J. E. Morris, Ed., Springer US, 2008, pp. 61-91.
- [2] W. D. van Driel, D. G. Yang, C. A. Yuan, and G. Q. Zhang, "Industrial Applications of Moisture-Related Reliability Problems," in *Moisture Sensitivity of Plastic Packages of IC Devices*, X. J. Fan and E. Suhir, Eds., Springer US, 2010, pp. 411-434.
- [3] C. Yuan, W. D. van Driel, R. Poelma, and G. Q. Zhang, "The Mechanical Properties Modeling of Nano-Scale Materials by Molecular Dynamics," in *Molecular Modeling and Multiscaling Issues for Electronic Material Applications*, N. Iwamoto, M. M. F. Yuen, and H. Fan, Eds., Springer US, 2012, pp. 115-131.
- [4] S. Koh, W. D. van Driel, C. A. Yuan, and G. Q. Zhang, "Degradation Mechanisms in LED Packages," in *Solid State Lighting Reliability*. vol. 1, W. D. van Driel and X. J. Fan, Eds., Springer New York, 2013, pp. 185-205.
- [5] W. D. van Driel, F. E. Evertz, J. J. M. Zaal, O. M. Nápoles, and C. A. Yuan, "An Introduction to System Reliability for Solid-State Lighting," in *Solid State Lighting Reliability*. vol. 1, W. D. van Driel and X. J. Fan, Eds., Springer New York, 2013, pp. 329-346.
- [6] **C. A. Yuan**, C. N. Han, H. M. Liu, and W. D. van Driel, "Solid-State Lighting Technology in a Nutshell," in *Solid State Lighting Reliability*. vol. 1, W. D. van Driel and X. J. Fan, Eds., Springer New York, 2013, pp. 13-41.
- [7] C. Y. Wong, S. Y. Y. Leung, R. H. Poelma, K. M. B. Jansen, C. C. A. Yuan, W. D. van Driel, et al., "Establishment of the Mesoscale Parameters for Separation: A Nonequilibrium Molecular Dynamics Model," in *Molecular Modeling and Multiscaling Issues for Electronic Material Applications*, A. Wymyslowski, N. Iwamoto, M. Yuen, and H. Fan, Eds., Springer International Publishing, 2015, pp. 133-148.

Standards (3)

- [1] 袁长安, 许绍伟, 李博, 阮军, 张国旗, 樊学军等., "Accelerating depreciation test method for LED lighting products," No. CSA020-2013, Beijing: CSAS, 2013.
- [2] 黄杰,彭浩,刘东月,张国旗,樊学军,袁长安等,"LED照明产品检验试验规范 第一部分:通用要求" No. CSA019.1-2013, Beijing: CSAS, 2013.
- [3] 张国旗, 袁长安, 樊学军, 钱诚, 孙博, 罗长春等, "室外LED照明产品用LED模块直流或交流电子控制装置加速试验方法," No. CSA029-2015, Beijing: CSAS, 2015.

Journal Papers (37)

- [1] K.-N. Chiang and **C.-A. Yuan**, "An overview of solder bump shape prediction algorithms with validations," *IEEE Trans. Adv. Packag.*, vol. 24, pp. 158-162, 2001.
- [2] **C.-A. Yuan** and K.-N. Chiang, "Micro to Macro Thermo-Mechanical Simulation of Wafer Level Packaging," *J. Electron. Packag.*, vol. 125, pp. 576-581, 2003.
- [3] **C. Yuan** and K. Chiang, "Investigation of dsDNA stretching meso-mechanics using LS-DYNA," *FEA information worldwide news (e-journal)*, vol. 11, pp. 61 68, 2004.
- [4] **C.-A. Yuan**, C. N. Han, M.-C. Yew, C.-Y. Chou, and K.-N. Chiang, "Design, analysis, and development of novel three-dimensional stacking WLCSP," *IEEE Trans. Adv. Packag.*, vol. 28, pp. 387-396, 2005.
- [5] K. Chiang, C. Yuan, C. Han, C. Chou, and Y. Cui, "Mechanical characteristic of ssDNA/dsDNA molecule under external loading," *Appl. Phys. Lett.*, vol. 88, p. 023902, 2006.
- [6] K.-N. Chiang, C.-Y. Chou, C.-J. Wu, and C.-A. Yuan, "Prediction of the bulk elastic constant of metals using atomic-level single-lattice analytical method," *Appl. Phys. Lett.*, vol. 88, p. 171904, 2006.
- [7] **C. Yuan**, W. van Driel, R. van Silfhout, O. van der Sluis, R. Engelen, L. J. Ernst, *et al.*, "Delamination analysis of Cu/low-k technology subjected to chemical-mechanical polishing process conditions," *Microelectron. Reliab.*, vol. 46, pp. 1679-1684, 2006.
- [8] **C. Yuan**, G. Zhang, C. Han, K. Chiang, and Y. Cui, "Numerical simulation on the mechanical characteristics of double-stranded DNA under axial stretching and lateral unzipping," *J. Appl. Phys.*, vol. 101, p. 074702, 2007.
- [9] W. D. van Driel, D. Yang, C. A. Yuan, M. Van Kleef, and G. Zhang, "Mechanical reliability challenges for MEMS packages: Capping," *Microelectron. Reliab.*, vol. 47, pp. 1823-1826, 2007.
- [10] **C. A. Yuan**, O. van der Sluis, G. K. Zhang, L. J. Ernst, W. D. van Driel, and R. B. van Silfhout, "Molecular simulation on the material/interfacial strength of the low-dielectric materials," *Microelectron. Reliab.*, vol. 47, pp. 1483-1491, 2007.
- [11] **C. A. Yuan**, O. van der Sluis, G. Q. Zhang, L. J. Ernst, W. D. van Driel, A. E. Flower, *et al.*, "Molecular simulation strategy for mechanical modeling of amorphous/porous low-dielectric

- constant materials," Appl. Phys. Lett., vol. 92, p. 061909, 2008.
- [12] **C. Yuan**, O. van der Sluis, G. Zhang, L. Ernst, W. van Driel, R. van Silfhout, *et al.*, "Chemical—mechanical relationship of amorphous/porous low-dielectric film materials," *Comp. Mater. Sci.*, vol. 42, pp. 606-613, 2008.
- [13] **C. A. Yuan**, O. van der Sluis, W. D. van Driel, and G. K. Zhang, "The need for multi-scale approaches in Cu/low-k reliability issues," *Microelectron. Reliab.*, vol. 48, pp. 833-842, 2008.
- [14] M.-C. Yew, C. C. Yuan, C.-J. Wu, D.-C. Hu, W.-K. Yang, and K.-N. Chiang, "Investigation of the Trace Line Failure Mechanism and Design of Flexible Wafer Level Packaging," *IEEE Trans. Adv. Packag.*, vol. 32, pp. 390-398, 2009.
- [15] K. Seetharaman, B. van Velzen, J. van Wingerden, H. van Zadelhoff, C. Yuan, F. Rietveld, et al., "A robust thin-film wafer-level packaging approach for MEMS devices," J. Microelectron. Electron. Packag., vol. 7, pp. 175-180, 2010.
- [16] X. Chen, C. A. Yuan, C. K. Wong, and G. K. Zhang, "Forcefields based molecular modeling on the mechanical and physical properties of emeraldine base polyaniline," *Procedia Engineering*, vol. 5, pp. 1268-1271, 2010.
- [17] C. Yuan, M. Erinc, S. Gielen, A. van der WAAL, W. van DRIEL, and K. Zhang, "Thermomechanical model optimization of HB-LED packaging," *Journal of Light & Visual Environment*, vol. 35, pp. 214-221, 2011.
- [18] X. Chen, C. Yuan, C. Wong, S. Koh, and G. Zhang, "Validation of forcefields in predicting the physical and thermophysical properties of emeraldine base polyaniline," *Molecular Simulation*, vol. 37, pp. 990-996, 2011.
- [19] X. P. Chen, C. K. Y. Wong, C. A. Yuan, and G. Q. Zhang, "Evaluation and selection of sensing materials for carbon dioxide (CO2) sensor by molecular modeling," *Procedia Engineering*, vol. 25, pp. 379-382, 2011.
- [20] C. K. Wong, S. Y. Leung, R. H. Poelma, K. M. Jansen, C. C. Yuan, W. D. van Driel, *et al.*, "Establishment of the coarse grained parameters for epoxy-copper interfacial separation," *J. Appl. Phys.*, vol. 111, p. 094906, 2012.
- [21] X. Chen, C. Yuan, C. K. Wong, and G. Zhang, "Molecular modeling of temperature dependence of solubility parameters for amorphous polymers," *J. Mol. Model.*, vol. 18, pp. 2333-2341, 2012.
- [22] X. Chen, C. K. Wong, **C. A. Yuan**, and G. Zhang, "Impact of the functional group on the working range of polyaniline as carbon dioxide sensors," *Sens. Actuators. B-Chem.*, vol. 175, pp. 15-21, 2012.
- [23] X. Chen, C. A. Yuan, C. K. Wong, H. Ye, S. Y. Leung, and G. Zhang, "Molecular modeling of protonic acid doping of emeraldine base polyaniline for chemical sensors," *Sens. Actuators. B-Chem.*, vol. 174, pp. 210-216, 2012.
- [24] M. Dong, J. Wei, H. Ye, C. Yuan, and K. Zhang, "Thermal analysis of remote phosphor in LED modules," *J. Semicond.*, vol. 34, p. 053007, 2013.

- [25] X. Chen, L. Shen, C. A. Yuan, C. K. Wong, and G. Zhang, "Molecular model for the charge carrier density dependence of conductivity of polyaniline as chemical sensing materials," *Sens. Actuators. B-Chem.*, vol. 177, pp. 856-861, 2013.
- [26] X. Chen, C. K. Wong, C. A. Yuan, and G. Zhang, "Nanowire-based gas sensors," *Sens. Actuators. B-Chem.*, vol. 177, pp. 178-195, 2013.
- [27] H. Ye, S. W. Koh, C. Yuan, H. Van Zeijl, A. W. Gielen, S.-W. R. Lee, *et al.*, "Electrical—thermal—luminous—chromatic model of phosphor-converted white light-emitting diodes," *Appl. Therm. Eng.*, vol. 63, pp. 588-597, 2014.
- [28] Y. Liu, J. Zhao, C. C.-A. Yuan, G. Q. Zhang, and F. Sun, "Chip-on-flexible packaging for high-power flip-chip light-emitting diode by AuSn and SAC soldering," *IEEE Trans.* Compon. Packag. Manuf. Technol., vol. 4, pp. 1754-1759, 2014.
- [29] Y. Liu, J. Meerwijk, L. Luo, H. Zhang, F. Sun, C. Yuan, et al., "Formation and evolution of intermetallic layer structures at SAC305/Ag/Cu and SAC0705-Bi-Ni/Ag/Cu solder joint interfaces after reflow and aging," J. Mater. Sci-Mater. El., vol. 25, pp. 4954-4959, 2014/11/01 2014.
- [30] Y. Liu, S. Y. Leung, J. Zhao, C. K. Wong, C. A. Yuan, G. Zhang, et al., "Thermal and mechanical effects of voids within flip chip soldering in LED packages," *Microelectron. Reliab.*, vol. 54, pp. 2028-2033, 2014.
- [31] H. Ye, B. Li, H. Tang, J. Zhao, C. Yuan, and G. Zhang, "Design of vertical fin arrays with heat pipes used for high-power light-emitting diodes," *Microelectron. Reliab.*, vol. 54, pp. 2448-2455, 2014.
- [32] Y. Liu, F. Sun, L. Luo, C. A. Yuan, and G. Zhang, "Microstructure Evolution and Shear Behavior of the Solder Joints for Flip-Chip LED on ENIG Substrate," *J. Electron. Mater.*, pp. 1-8, 2015.
- [33] Y. Liu, Y. Y. L. Stanley, K. Y. W. Cell, **C.Yuan**, G. Zhang, and F. Sun, "Thermal simulation of flexible LED package enhanced with copper pillars," *J. Semicond.*, vol. 36, p. 064011, 2015.
- [34] M. Dong, F. Santagata, R. Sokolovskij, J. Wei, C. Yuan, and G. Zhang, "3D system-in-package design using stacked silicon submount technology," *Microelectronics International*, vol. 32, pp. 63-72, 2015.
- [35] Y. Liu, F. Sun, H. Zhang, T. Xin, C. A. Yuan, and G. Zhang, "Interfacial reaction and failure mode analysis of the solder joints for flip-chip LED on ENIG and Cu-OSP surface finishes," *Microelectron. Reliab.*, 2015.
- [36] C. Qian, X.J. Fan, J.J. Fan, C.A. Yuan, G.Q. Zhang, "An Accelerated Test Method of Luminous Flux Depreciation for LED Luminaires and Lamps," *Reliability Engineering & System Safety*, 2015. (accepted)
- [37] **C.A. Yuan**, "The extended Beer-Lambert Theory for Ray Tracing Modeling of LED Chipscaled Packaging Application With Multiple Luminescence Materials," *Optical Materials*, vol

50, pp. 193-198, 2015.

Conference Papers (59)

- [1] C.-A. Yuan, C. N. Han, and K.-N. Chiang, "Design and analysis of novel glass WLCSP structure," in *Proc. 5th International Conference on Thermal and Mechanical Simulation and Experiments in Microelectronics and Microsystems (EuroSimE)*, Brussels, Belgium, 2004, pp. 279-285.
- [2] **C. A. Yuan** and K. N. Chiang, "Investigation of dsDNA stretching meso-mechanics using finite element method " in *Proc. NSTI-Nanotech*, Boston, Massachusetts, U.S.A., 2004, pp. 399 402.
- [3] C.-A. Yuan, C.-N. Han, and K.-N. Chiang, "Investigation of the sequence-dependent dsDNA mechanical behavior using clustered atomistic-continuum Method," in *Proc. NSTI Nanotechnology Conference*, Anaheim, California, USA, 2005.
- [4] C.-N. Han, **C. Yuan**, and K.-N. Chiang, "Investigation of ssDNA molecule using clustered atomistic method and its application to the dsDNA analysis," in *Proc. SPIE 6036*, *BioMEMS and Nanotechnology II*, 2005, p. 603605.
- [5] A. Xiao, L. G. Wang, W. D. van Driel, D. G. Yang, C. A. Yuan, and G. Q. Zhang, "Thin Film Interfacial Strength Characterization Using Mixed Mode Bending," in *Proc. 7th International Conference on Electronic Packaging Technology (ICEPT)*, Shanghai, China, 2006, pp. 1-5.
- [6] M.-C. Yew, C.-A. Yuan, K.-N. Chiang, Y.-H. Chen, and W.-K. Yang, "Sensitivity Design of the Chip-in-Substrate Package Using DOE with Factorial Analysis Technology," in *Proc. 7th International Conference on Thermal, Mechanical and Multiphysics Simulation and Experiments in Micro-Electronics and Micro-Systems (EuroSime)*, Como, Italy 2006, pp. 1-7.
- [7] C. Yuan, G. Zhang, C.-S. Huang, C.-H. Yu, C.-C. Yang, W.-K. Yang, et al., "Design and Analysis of a novel fan-out WLCSP structure," in *Proc. 7th International Conference on Thermal, Mechanical and Multiphysics Simulation and Experiments in Micro-Electronics and Micro-Systems (EuroSime)*, Como, Italy, 2006, pp. 1-8.
- [8] C. Yuan, G. Zhang, C.-S. Huang, C.-H. Yu, C.-C. Yang, W.-K. Yang, et al., "Design, Experiment and Analysis of the Solder on Rubber (SOR) structure of WLCSP," in *Proc. 7th International Conference on Thermal, Mechanical and Multiphysics Simulation and Experiments in Micro-Electronics and Micro-Systems (EuroSime)*, Como, Italy, 2006, pp. 1-7.
- [9] M. Yew, C. Yuan, C. Han, C. Huang, W. Yang, and K. Chiang, "Factorial analysis of chipon-metal WLCSP technology with fan-out capability," in *Proc. 13th International Symposium on the Physical and Failure Analysis of Integrated Circuits*, Singapore, 2006, pp. 223-228.
- [10] C. Yuan, O. Van Der Sluis, G. Zhang, L. Ernst, W. Van Driel, R. Van Silfhout, et al., "The chemical-mechanical relationship of the SiOC (H) dielectric film," in *Proc. International Conference on Thermal, Mechanical and Multi-Physics Simulation Experiments in Microelectronics and Micro-Systems (EuroSime)*, London, Great-Britain, 2007, pp. 1-6.
- [11] A. W. Dawotola, C. Yuan, W. Van Driel, E. Bakkers, and G. Zhang, "Mechanical

- Characterization of III-V Nanowire Using Molecular Dynamics Simulation," in *Proc. International Conference Thermal, Mechanical and Multi-Physics Simulation Experiments in Microelectronics and Micro-Systems, (EuroSime)*, London, Great-Britain, 2007, pp. 1-5.
- [12] **C. Yuan**, O. van der Sluis, G. Zhang, L. Ernst, F. van Keulen, W. van Driel, *et al.*, "The prediction of the mechanical stiffness of the silicon based crystalline/amorphous nanostructures using molecular dynamic (MD) simulation," in *Proc. NSTI Nanotech*, Santa Clara, CA, USA, 2007, pp. 57 60.
- [13] C. Yuan, A. E. Flower, O. van der Sluis, G. Zhang, L. J. Ernst, M. Cherkaoui, et al., "The mechanical influence of the porosity and nano-scale pore size effect of the SiOC (H) dielectric film," in Proc. 9th International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Micro-Systems (EuroSimE), Freiburgim-Breisgau, Germany, 2008, pp. 1-5.
- [14] **C. Yuan**, O. van der Sluis, W. van Driel, and G. Zhang, "The role of the molecular simulation approach for IC-backend developments," in *Proc. International Conference on Electronic Packaging Technology & High Density Packaging (ICEPT-HDP)*, Shanghai, China, 2008, pp. 1-4.
- [15] D. Pavel, K. Zhang, and C. Yuan, "Computational study of armchair single wall carbon nanotubes," in *Proc. 10th International Conference on Thermal, Mechanical and Multi-Physics simulation and Experiments in Microelectronics and Microsystems (EuroSimE)*, Delft, The Netherlands, 2009, pp. 1-4.
- [16] **C. Yuan**, G. Zhang, J. Salta, and R. Jos, "The needs of multi-scale/multi-physics simulation for RF Power packaging/product development," in *Proc. 10th International Conference on Thermal, Mechanical and Multi-Physics simulation and Experiments in Microelectronics and Microsystems (EuroSimE), Delft, The Netherlands, 2009, pp. 1-1.*
- [17] **C. Yuan**, A. Xiao, J. Salta, M. De Langen, and W. Van Driel, "Thermal modeling for advanced high power packaging development and on-line performance monitoring," in *Proc.* 3rd Electronic System-Integration Technology Conference (ESTC), Berlin, Germany, 2010, pp. 1-5.
- [18] E. Spaan, E. Ooms, W. Van Driel, C. Yuan, D. Yang, and G. Zhang, "Wire bonding the future: a combined experimental and numerical approach to improve the Cu-wire bonding quality," in *Proc. 11th International Conference on Thermal, Mechanical & Multi-Physics Simulation, and Experiments in Microelectronics and Microsystems (EuroSimE)*, Delft, The Netherlands, 2010, pp. 1-4.
- [19] **C. Yuan**, M. Asis, J. Salta, and W. van Driel, "Board level reliability of the advanced RF power packaging," in *Proc. 11th International Conference on Thermal, Mechanical & Multi-Physics Simulation, and Experiments in Microelectronics and Microsystems (EuroSimE), Bordeaux, France, 2010, pp. 1-5.*
- [20] C. Yuan, R. Kregting, H. Ye, W. van Driel, S. Gielen, and G. Zhang, "High power electronics

- package: from modeling to implementation," in *Proc. 6th International Microsystems*, *Packaging, Assembly and Circuits Technology Conference (IMPACT)*, Taipei, Taiwan, 2011, pp. 249-252.
- [21] R. Kregting, C. Yuan, A. Xiao, and F. De Bruijn, "Modelling aluminium wire bond reliability in high power OMP devices," in *Proc. 12th International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Microsystems* (EuroSimE), Linz, Austria, 2011, pp. 1/4-4/4.
- [22] W. van Driel, C. Yuan, S. Koh, and G. Zhang, "LED system reliability," in *Proc. 12th International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Microsystems (EuroSimE)*, Linz, Austria, 2011, pp. 1/5-5/5.
- [23] C. Wong, S. Leung, R. Poelma, K. Jansen, C. Yuan, W. Van Drie, et al., "Molecular Dynamics study of the traction-displacement relations of epoxy-copper interfaces," in *Proc.*12th International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Microsystems (EuroSimE), Linz, Austria, 2011, pp. 1/5-5/5.
- [24] C. Yuan, E. Weltevreden, P. Van dan Akker, R. Kregting, J. De Vreugd, and G. Zhang, "FE modeling of Cu wire bond process and reliability," in *Proc. 12th International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Microsystems (EuroSimE)*, Cascais, Portugal, 2011, pp. 1/5-5/5.
- [25] C. Yuan, R. Kregting, W. v. Driel, A. Gielen, A. Xiao, and G. Zhang, "Overview on thermal and mechanical challenges of high power RF electronic packaging," in *Proc. 44th International Symposium on Microelectronics 2011 (IMAPS)*, Long Beach, CA, USA, 2011, pp. 418-429
- [26] S. Koh, W. van Driel, and C. Yuan, "Solid state lighting system reliability [C]," in *Proc. ChinaSSL. China*, Shanghai, China, 2011, pp. 121-126.
- [27] M. Cai, W. Chen, L. Liang, M. Gong, W. Tian, H. Tang, C. Yuan, et al., "Highly accelerated life testing of LED luminaries," in *Proc. 13th International Conference on Electronic Packaging Technology and High Density Packaging (ICEPT-HDP)*, Guilin, China, 2012, pp. 1659-1664.
- [28] H. Ye, S. Koh, C. Yuan, and G. Zhang, "Thermal analysis of phosphor in high brightness LED," in *Proc. 13th International Conference on Electronic Packaging Technology and High Density Packaging (ICEPT-HDP)*, Guilin, China, 2012, pp. 1535-1539.
- [29] M. Cai, G. Yang, S. Koh, C. Yuan, W. Chen, B. Wu, et al., "Accelerated testing method of LED luminaries," in *Proc. 13th International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Microsystems (EuroSimE)*, Cascais, Portugal, 2012, pp. 1/6-6/6.
- [30] X. Chen, C. Yuan, C. K. Wong, and G. Zhang, "Molecular modeling of the conductivity

- changes of the emeraldine base polyaniline due to protonic acid doping," in *Proc. 13th International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Microsystems (EuroSimE)*, Cascais, Portugal, 2012, pp. 1/4-4/4.
- [31] M. Kouters, G. Gubbels, and C. Yuan, "Characterization of intermetallic compounds in Cu-Al ball bonds: mechanical properties, delamination strength and thermal conductivity," in *Proc.*13th International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Microsystems (EuroSimE), Cascais, Portugal, 2012, pp. 1/9-9/9.
- [32] C. Wong, S. Leung, R. Poelma, K. Jansen, C. Yuan, W. Van Driel, et al., "Establishment of the mesoscale parameters for epoxy-copper interfacial separation," in *Proc. 13th International Conference on Thermal, mechanical and multi-physics simulation and experiments in microelectronics and microsystems (EuroSimE)*, Cascais, Portugal, 2012, pp. 1/6-6/6.
- [33] C. Yuan, J. Wei, H. Ye, S. Koh, S. Harianto, M. Van den Nieuwenhof, et al., "Polymer-based 2D/3D wafer level heterogeneous integration for SSL module," in *Proc. 13th International Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Microsystems (EuroSime)*, Cascais, Portugal, 2012.
- [34] C. K. Wong, S. Y. Leung, L. Niu, G. Fan, X. Zhou, C. C. Yuan, et al., "Color consistence improvement in LED packages," in Proc. 14th International Conference on Electronic Materials and Packaging (EMAP), Lantau Island, HongKong, 2012, pp. 1-5.
- [35] C. K. Wong, X. Chen, C. A. Yuan, and G. Zhang, "P1. 9.15 Molecular Modeling of Protonic Acid Doping of Emeraldine Base Polyaniline for Chemical Sensing Applications," in *Proc.* 14th International Meeting on Chemical Sensors (IMCS), Nuremberg, Germany, 2012, pp. 1202-1205.
- [36] S. Koh, C. Yuan, B. Sun, B. Li, X. Fan, and G. Zhang, "Product level accelerated lifetime test for indoor LED luminaires," in *Proc. 14th International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Microsystems* (EuroSimE) Wroclaw, Poland, 2013, pp. 1-6.
- [37] S. Y. Leung, L. Zhong, J. Wei, Z. Xu, C. C. Yuan, and G. Zhang, "Optical design and characterization of micro-fabricated light reflector for 3D multi-chip LED module," in *Proc.* 14th International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Microsystems (EuroSimE), Wroclaw, Poland, 2013, pp. 1-5.
- [38] B. Sun, S. W. Koh, C. Yuan, X. Fan, and G. Zhang, "Accelerated lifetime test for isolated components in linear drivers of high-voltage LED system," in *Proc. 14th International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Microsystems (EuroSimE)*, Wroclaw, Poland, 2013, pp. 1-5.
- [39] C. Wong, L.-R. Zhong, Y. Qin, C. C. Yuan, and G. Zhang, "A model for color prediction of

- LED packages," in *Proc. 14th International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Microsystems (EuroSimE)*, Wroclaw, Poland, 2013, pp. 1-4.
- [40] X. Fan and **C. Yuan**, "Effect of temperature gradient on moisture diffusion in high power devices and the applications in LED packages," in *Proc. 63rd Electronic Components and Technology Conference (ECTC)*, Las Vegas, NV, USA, 2013, pp. 1466-1470.
- [41] M. Dong, F. Santagata, J. Wei, C. Yuan, and K. Zhang, "Thermal analysis for silicon-based integration of LED systems," in *Proc. Solid State Lighting (ChinaSSL)*, 2013, pp. 206-209.
- [42] Y. Liu, G. Zhang, F. Sun, X. Fan, C. K. Wong, **C. A. Yuan**, *et al.*, "Thermal behavior of flip chip LED packages using electrical conductive adhesive and soldering methods," in *Proc. Solid State Lighting (ChinaSSL)*, Beijing, China, 2013, pp. 4-7.
- [43] G. Lu, C. Yuan, B. Sun, B. Li, X. Fan, and G. Zhang, "Validation of the methodology of lumen depreciation acceleration of LED lighting," in *Proc. Solid State Lighting (ChinaSSL)*, Beijing, China, 2013, pp. 154-157.
- [44] G. Lu, C. Yuan, H. Tang, X. Fan, and G. Zhang, "Cause analysis on highly depreciated indoor LED product in CSA020," in *Proc. Solid State Lighting (ChinaSSL)*, Beijing, China, 2013, pp. 48-51.
- [45] B. Sun, C. Yuan, X. Fan, S. W. Koh, and G. Zhang, "An accelerated lifetime test method for DC or AC supplied electronic control gear for LED modules of outdoor LED lighting products," in *Proc. Solid State Lighting (ChinaSSL)*, Beijing, China, 2013, pp. 65-68.
- [46] H. Tang, D. Li, M. Pan, T. Yang, C. Yuan, and X. Fan, "Thermal analysis and optimization design of LED streetlight module," in *Proc. Solid State Lighting (ChinaSSL)*, Beijing, China, 2013, pp. 193-197.
- [47] L. Wang, T. van Weelden, C. Yuan, and J. Wei, "LED encapsulation and integration with Film Assisted Molding technology," in *Proc. Solid State Lighting (ChinaSSL)*, Beijing, China, 2013, pp. 89-94.
- [48] H. Tang, Y. Yu, M. Jia, S. Y. Leung, C. Qian, C. C. Yuan, et al., "Influences of viscoelasticity of polybutylene terephthalate (PBT) on the thermal interface contact of LED spotlight module," in *Proc. 15th International Conference on Electronic Packaging Technology (ICEPT)*, Chengdu, China, 2014, pp. 1198-1201.
- [49] J. Zhao, Y. Liu, H. Tang, S. Y. Leung, C. C. Yuan, and G. Zhang, "A novel design of heatsink-less LED base fluorescent lamp retrofit," in *Proc. 15th International Conference on Electronic Packaging Technology (ICEPT)*, Chengdu, China, 2014, pp. 1202-1207.
- [50] G. Lu, C. Yuan, X. Fan, and G. Zhang, "Correlation of activation energy between LEDs and luminaires in the lumen depreciation test," in *Proc. 15th international conference on Thermal, mechanical and multi-physics simulation and experiments in microelectronics and microsystems (EuroSime)*, Ghent, Belgium, 2014, pp. 1-3.
- [51] B. Sun, X. Fan, L. Zhao, C. Yuan, S. W. Koh, and G. Zhang, "A lifetime prediction method

- for Solid State Lighting power converters based on SPICE models and finite element thermal simulations," in *Proc. 15th international conference on Thermal, mechanical and multi-physics simulation and experiments in microelectronics and microsystems (EuroSime)*, Ghent, Belgium, 2014, pp. 1-4.
- [52] H. Tang, J. Zhao, B. Li, S. Y. Leung, C. C. Yuan, and G. Zhang, "Thermal performance of embedded heat pipe in high power density LED streetlight module," in *Proc. 15th international conference on Thermal, mechanical and multi-physics simulation and experiments in microelectronics and microsystems (EuroSime)*, Ghent, Belgium, 2014, pp. 1-6.
- [53] C. Wong, S. Y. Leung, Y. Xiong, C. C. Yuan, and G. Zhang, "A model in predicting color of LED packages with different phosphor layer dimensions," in *Proc. 15th international conference on Thermal, mechanical and multi-physics simulation and experiments in microelectronics and microsystems (EuroSime)*, Ghent, Belgium, 2014, pp. 1-5.
- [54] M. Dong, F. Santagata, J. Wei, **C. Yuan**, and G. Zhang, "Novel system-in-package design and packaging solution for solid state lighting systems," in *Proc. 64th Electronic Components and Technology Conference (ECTC)*, Orlando, FL, USA, 2014, pp. 1192-1197.
- [55] X. Li, E. Iervolino, F. Santagata, J. Wei, **C. Yuan**, P. Sarro, *et al.*, "Miniaturized particulate matter sensor for portable air quality monitoring devices," in *Proc. 2014 IEEE SENSORS*, Valencia, Spin, 2014, pp. 2151-2154.
- [56] X. Li, J. Wei, T. Ma, C. Yuan, L. Sarro, and K. Zhang, "Compact tunable optics for dynamic lighting," in *Proc. Classical Optics* 2014, Kohala Coast, Hawaii, 2014, p. JTu5A.35.
- [57] H. Tang, Y. Yu, M. Jia, S. Y. Leung, C. Qian, C. C. Yuan, *et al.*, "Effect of material creeping on the reliability of thermal interface of LED spotlight module," in *Proc. Solid State Lighting* (SSLCHINA), Guangzhou, China, 2014, pp. 120-124.
- [58] C. Wong, G. Fan, S. Leung, **C. Yuan**, and G. Zhang, "The new generation package free LED: The performance and reliability of white chip," in *Proc. Solid State Lighting (SSLCHINA)*, Guangzhou, China, 2014, pp. 114-119.
- [59] B. Sun, X. Fan, C. Yuan, C. Qian, and G. Zhang, "A degradation model of aluminum electrolytic capacitors for LED drivers," in *Proc. 16th International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Microsystems (EuroSimE)*, Budapest, Hungary, 2015, pp. 1-4.

Patent (35)

- [1] 杨文焜,杨文彬,王志荣,林明辉,孙文彬,吴皓然,**袁長安**,江國寧*等*,"晶圆级测试卡的探针构造及其制造方法," Taiwan Patent, 2002.
- [2] 江國寧, **袁長安**, 李昌駿, 廖啟銘, 江國寧, "具複數個接觸單元之電訊測試組件結構," Taiwan Patent, 2003.
- [3] 江國寧,楊文焜,楊文彬,王誌榮,林明輝,孫文彬,**袁長安**等,"晶圓級測試卡之探針結構," Taiwan Patent, 2003.
- [4] 江國寧, 袁長安, "晶片電訊檢測組件結構," Taiwan Patent, 2004.
- [5] 工國寧, 鄭仙志, **袁長安**, "具基板側凸塊結構之電子構裝結構," Taiwan Patent, 2004.
- [6] 許永昱, 江國寧, **袁長安**, 李昌駿,鄭仙志, "多晶片堆疊立體電子構裝結構," Taiwan Patent, 2005.
- [7] 江國寧, 游明志, **袁長安**,周展延,"具導電特性支撐底板之立體堆疊封裝結構," Taiwan Patent, 2006.
- [8] Y. Y. Hsu, K. N. Chiang, C. A. Yuan, C. C. Lee, and H. C. Cheng, "Three-dimensional multichip stack electronic package structure," US Patent, 2007.
- [9] M. C. Yew, C. A. Yuan, C. Y. Chou, and K. N. Chiang, "3D electronic packaging structure having a conductive support substrate," US Patent, 2006, 2011.
- [10] 韦嘉, **袁长安**, 亨德里克斯·威廉默斯·范·蔡吉, 董明智, 梁润园,张国旗, "LED封装单元 及包括其的LED封装系统," China Patent, 2012.
- [11] 韦嘉, **袁长安**, 董明智, 梁润园,张国旗, "LED封装、其制作方法及包含其的LED系统," China Patent, 2012.
- [12] 许绍伟, 孙博, 樊学军, **袁长安**,张国旗,"照明驱动器件寿命的检测方法及装置," China Patent, 2012.
- [13] 许绍伟, 樊学军, 王之英, 孙博, **袁长安**,张国旗, "照明装置光通维持率的加速检测方法及装置," China Patent, 2012.
- [14] 崔成强, 梁润园, 韦嘉,**袁长安**, "LED芯片及制造方法," China Patent, 2012.
- [15] 韦嘉, 刘洋, **袁长安**, 崔成强,张国旗,"一种LED封装杯体的加工方法及相应模具," China Patent, 2013.
- [16] 韦嘉,梁润园,黄超,**袁长安**,张国旗,"一种LED封装单元及其封装方法和阵列面光源," China Patent, 2013.
- [17] 韦嘉, 黄超, **袁长安**, 黄洁莹,张国旗,"一种LED封装单元及其封装方法和阵列面光源," China Patent, 2013.
- [18] 叶雅楠,黄洁莹,梁润园,范供齐,**袁长安**,张国旗,"一种LED喷涂装置及使用其进行喷涂补粉的方法," China Patent, 2013.
- [19] 刘磊, 牛琳, 韦嘉, **袁长安**, 崔成强,张国旗, "LED 软灯条的载体装置以及光通量测试系统与方法," China Patent, 2013.
- [20] 李博, 范供齐, **袁长安**, 张国旗,崔成强,"用于将LED软板光源安装到物件上的安装设备

- 及其使用方法," China Patent, 2013.
- [21] **袁长安**, 牛琳, 崔成强,张国旗,"一种白光LED封装方法及相应封装结构," China Patent, 2013.
- [22] 崔成强, 韦嘉, **袁长安**,张国旗, "制造发光二极管芯片的方法," China Patent, 2013.
- [23] 崔成强, 韦嘉, **袁长安**,张国旗, "粉料涂覆方法和使用其进行LED荧光粉涂覆的方法," China Patent, 2013.
- [24] 崔成强, **袁长安**,张国旗, "LED封装结构及其制作方法," China Patent, 2013.
- [25] 崔成强, **袁长安**,张国旗, "LED封装基板及制作工艺," China Patent, 2013.
- [26] 崔成强,梁润园,韦嘉,**袁长安**,"LED封装结构及其制作方法,"China Patent, 2013.
- [27] 牛琳, 韦嘉, 梁润园, **袁长安**,张国旗, "一种软基板光源模组及其制造方法," China Patent, 2014
- [28] 牛琳, 韦嘉, 梁润园, **袁长安**,张国旗, "软基板光源模组和其制造方法以及平面光源装置," China Patent, 2014.
- [29] 牛琳, 韦嘉, 梁润园, **袁长安**,张国旗,"一种软基板光源模组及其制造方法," China Patent, 2014.
- [30] 刘洋, 韦嘉, 崔成强, **袁长安**, "基板和在基板上安装芯片的工艺," China Patent, 2014.
- [31] **袁长安**, 方涛, 韦嘉, 崔成强,张国旗,"用于柔性基板的桥接模块和基板组件," China Patent, 2014.
- [32] 袁长安, 韦嘉, 梁润园, 黄洁莹, 崔成强,张国旗, "一种LED封装组件," China Patent, 2014.
- [33] 梁润园,黄洁莹,袁长安,张国旗,"一种发光二极管器件及光源模组及光源模块," China Patent, 2014.
- [34] 梁润园, 黄超, 钟浪, 李云, 方涛, 韦嘉, **袁长安**等.,"用于切割柔性基板LED光源装置的 切割机构及方法." China Patent, 2014.
- [35] 梁润园, 黄超, **袁长安**, 张国旗, "发光二极管封装件," China Patent, 2014.