

2021 IEEE International Symposium on the Physical and Failure Analysis of Integrated Circuits (IPFA 2021)

Singapore

15 September – 15 October 2021



IEEE Catalog Number: CFP21777-POD
ISBN: 978-1-6654-3989-3

**Copyright © 2021 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 is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP21777-POD
ISBN (Print-On-Demand):	978-1-6654-3989-3
ISBN (Online):	978-1-6654-3988-6
ISSN:	1946-1542

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

GUIDELINES OF PLASMA-FIB DELAYERING TECHNIQUES FOR ADVANCED PROCESS NODE.....	1
<i>Ching-Chun Lin, Yun-Da Li, Kim Hsu</i>	
GENERATIVE ADVERSARIAL NETWORK FOR INTEGRATED CIRCUITS PHYSICAL ASSURANCE USING SCANNING ELECTRON MICROSCOPY	5
<i>Md Mahfuz Al Hasan, Nidish Vashistha, Shayan Taheri, Mark Tehranipoor, Navid Asadizanjani</i>	
A RELIABILITY-CONCERNED COMPUTE-IN-MEMORY BEHAVIOR MODEL FOR CONVOLUTIONAL NEURAL NETWORK.....	17
<i>Kaili Cheng, Jiahao Song, Xinyue Zhang, Yandong He, Runsheng Wang, Yuan Wang</i>	
IMPROVING TOMOGRAPHIC SENSING OF SCALPEL SPM WITH MULTI-PROBE FUNCTIONALITY AND AUTOMATIC REMOVAL RATE EXTRACTION	21
<i>C. O'Sullivan, M. Tedaldi, C. Drilakis, T. Hantschel, A. D. L. Humphris, J. P. Hole, J. Goulden, U. Celano</i>	
COMPARISON OF DC/AC HOT CARRIER DEGRADATION BETWEEN SHORT CHANNEL SI BULK AND SIGE SOI P-FINFETS.....	25
<i>Hao Chang, Yongkui Zhang, Longda Zhou, Zhigang Ji, Hong Yang, Qianqian Liu, Yongliang Li, Renrong Liang, Eddy Simoen, Huilong Zhu, Jun Luo, Wenwu Wang</i>	
A SYSTEMATIC FAILURE ANALYSIS APPROACH ON COPPER PAD DISCOLORATION ISSUE.....	29
<i>Hemalatha Somu, Krishnan Arul</i>	
TEMPERATURE CYCLING FAILURE ANALYSIS AND IMPROVEMENT OF A PANEL LEVEL FAN-OUT QFN PACKAGE	33
<i>Li Chen, Wei Gao, Yan Huo, Lei Xie, Yuyu Peng, Min Ren, Bo Zhang</i>	
INNOVATIVE USE OF TCAD PROCESS SIMULATION FOR DEVICE FAILURE ANALYSIS	39
<i>Shang Yi Lim, Joydeep Ghosh, Aaron Thean</i>	
FAILURE ANALYSIS AND RELIABILITY IMPROVEMENT OF THE CORNER REGION OF VARIATION LATERAL DOPING TERMINATION	43
<i>Min Ren, Xuefan Zhang, Xin Zhang, Junwei Feng, Yahan Yang, Youke Bai, Jiakang Fan, Rongyao Ma, Fang Zheng, Yining Ma, Zehong Li, Bo Zhang</i>	
DIGITAL AND AMS YIELD DIAGNOSIS FLOW COMBINING AUTOMATED TESTING AND FAULT INJECTION-BASED CIRCUIT SIMULATION	47
<i>C. Shaalini, Song Li, Sh Goh, Wf Soh</i>	
HV ESD DEVICE SOLUTION EVALUATIONS IN 55NM BCD TECHNOLOGY	51
<i>Sagar P Karalkar, Milova Paul, Xiao Mei Elaine Low, Kyong Jin Hwang, Robert Gauthier</i>	
ANALYSIS OF THRESHOLD VOLTAGE INSTABILITY UNDER SEMI-ON HOT ELECTRON STRESS IN ALGAN/GAN HIGH ELECTRON MOBILITY TRANSISTOR.....	57
<i>Fong-Min Ciou, Yu-Shan Lin, Jia-Hong Lin, Ting-Tzu Kuo, Jui-Tse Hsu, Po-Hsun Chen, Ting-Chang Chang</i>	

FAILURE ANALYSIS TECHNIQUES AND STUDIES ON VERTICAL SHORT ISSUE FOR PRODUCTION WAFERS	61
<i>P. K. Tan, S. L. Ting, Y. L. Pan, N. Y. Xu, D. Nagalingam, H. H. W. Thoungh, H. Kyaw, H. Tan, K. Menon, R. Fransiscus, A. Quah, P. T. Ng, S. M. Parab, C. Q. Chen</i>	
ANALYTICAL AND FINITE ELEMENT STUDY ON WARPAGE AND STRESS OF 2.5D CHIP-PACKAGE STRUCTURES	66
<i>Sida Hao, Weishen Chu, Paul S. Ho, Joonsik Sohn Lee, Rui Huang</i>	
DEGRADATION STUDIES ON 8-LAYER 3D VERTICAL RESISTIVE RANDOM ACCESS MEMORY UNDER MOISTURE	74
<i>Dengyun Lei, Huiwei Wu, Yiqiang Chen, Yun Huang, Yunfei En, Qiantong Guo, Feng Zhang, Rui Gao</i>	
DIGITAL TWIN AIDED IC PACKAGING STRUCTURE ANALYSIS FOR HIGH-QUALITY SAMPLE PREPARATION	78
<i>Chengjie Xi, Aslam A. Khan, John True, Nidish Vashistha, Nathan Jessurun, Navid Asadizanjani</i>	
CHARGE-SENSING METHOD FOR NICKEL CONTAMINATION DETECTION ON A 4H-SIC POWERMOSFET	84
<i>B. Mazza, F. Cordiano, M. Boscaglia, V. Scuderi, M. Frazzica, R. Ricciari, M. Poma, C. Gagliano, S. Patanè</i>	
FAILURE LOCALIZATION OF BIPOLAR INTEGRATED CIRCUITS BY IMPLEMENTING ACTIVE VOLTAGE CONTRAST	90
<i>Yiqiang Ni, Xuanlong Chen, Enliang Li, Linting Zheng, Liang He, Shizheng Yang</i>	
HYBRID MODELLING FOR THE FAILURE ANALYSIS OF SIC POWER TRANSISTORS ON TIME-DOMAIN REFLECTOMETRY DATA	95
<i>Simon Kamm, Kanuj Sharma, Ingmar Kallfass, Nasser Jazdi, Michael Weyrich</i>	
E-TEST PROBE MARK TOPOLOGY-INDUCED FAILURE	101
<i>Jf Jong, Tw Lim, Sh Goh, Yang Qu, Jeffrey Lam</i>	
FAILURE ANALYSIS OF A PROM AT LOW TEMPERATURE INDUCED BY PROCESS DEVIATION	106
<i>Pengfei Lian, Jianshe Lou, Yunlong Liu, Peipei Fan, Rong Zhao, Zebin Kong, Weiming Zhu, Kunshu Wang, Lu Tang</i>	
ELECTROSTATIC DISCHARGE SWITCH SIMULATION ENABLEMENT IN RF SOI TECHNOLOGIES	110
<i>Mengfu Di, Anindya Nath, Meng Miao, Xiang Xiang Lu, Lin Lin, Robert Gauthier</i>	
STUDY OF LAYOUT EFFECT ON GATE OXIDE TDDDB IN SUB-16NM FINFET TECHNOLOGY	115
<i>Xiangyu Liu, Yongsheng Sun, Junlin Huang, Changze Liu, Xiaolu Shang</i>	
ELECTROMIGRATION FAILURE CONTROLLED BY AGING-LIKE GRADUAL RESISTANCE SHIFT IN CO-CAPPED CU INTERCONNECTS	120
<i>Hui Zheng, Yongsheng Sun, Weichun Luo, Junlin Huang</i>	
SIMULTANEOUS, SUBMICRON INFRARED AND RAMAN MICROSPECTROSCOPIES FOR EFFECTIVE FAILURE AND CONTAMINATION ANALYSES	125
<i>Michael Lo, Mustafa Kansiz, Eoghan Dillon, Jay Anderson, Curtis Marcott</i>	

ANALYSIS OF A FAILURE IN HIGH-VOLTAGE VDMOS DEVICE CAUSED BY DIE CONTAMINATION	131
<i>Zhaoxi Wu, Chao Duan, Zhiming Ding, Yaning Wu, Rui Cao, Xu Wang, Meng Meng</i>	
FEM SIMULATION-BASED FAILURE ANALYSIS OF ADDITIVE MANUFACTURING LIQUID COLD PLATES FOR MORE RELIABLE POWER PRESS-PACK ASSEMBLIES.....	137
<i>Davide Spaggiari, Nicola Delmonte, Danilo Santoro, Federico Portesine, Filippo Vaccaro, Emilio Sacchi, Paolo Cova</i>	
INVESTIGATION ON THE COPPER VOID DEFECT BY TRANSMISSION ELECTRON MICROSCOPE (TEM)	144
<i>Chi Wen Soo, Jie Zhu</i>	
TOOL AUTOMATION AND COMPUTER VISION METHODOLOGIES FOR FASTER IC DIAGNOSTICS	151
<i>Franco Stellari, Chung-Ching Lin, Fei Lan, Peilin Song</i>	
STUDY ON TRANSMITTER WITH STACKING-MOS STRUCTURE OF INTERFACE CIRCUITS FOR CROSS-DOMAIN CDM ESD PROTECTION.....	158
<i>Cheng-Yun Hsueh, Ming-Dou Ker</i>	
DATA ANALYTICS AND MACHINE LEARNING: ROOT-CAUSE PROBLEM-SOLVING APPROACH TO PREVENT YIELD LOSS AND QUALITY ISSUES IN SEMICONDUCTOR INDUSTRY FOR AUTOMOTIVE APPLICATIONS	165
<i>Corinne Bergès, Jim Bird, Mehul D. Shroff, René Rongen, Chris Smith</i>	
FAILURE MECHANISM OF STRESS MIGRATION IN VIA SIDEWALL FOR DUAL DAMASCENE CU INTERCONNECTION	175
<i>Yu Chun Teng, Liwei Yang</i>	
SIMS ANALYSIS OF ULTRA-SHALLOW BORON IMPLANT	179
<i>Han Wei Teo, Y. Wang, Kenny Ong, Z. Q. Mo</i>	
SAMPLE PREPARATION FOR VCSEL DEVICE CONTAMINATION ANALYSIS.....	183
<i>Lei Zhu, Derrick Tan, Caryn Sek, Binghai Liu, Younan Hua, Xiaomin Li</i>	
SILICON DEFECT OBSERVATION FROM ULTRA-THICK SAMPLE USING TEM EELS TECHNIQUE	187
<i>Gek Li Lee, Kok Wah Lee, Jie Zhu</i>	
A NOVEL CMOS IMAGE SENSOR PACKAGE COVER GLASS WHITE STAIN MATERIAL IDENTIFICATION METROLOGY BY TOF-SIMS.....	191
<i>Yeh Yee Kee, Kei Lin Sek, Lei Zhu, Younan Hua, Xiaomin Li</i>	
EBIC TECHNIQUE STUDY FOR IMPLANT DOPING PROBLEM IN FAILURE ANALYSIS	194
<i>Pin Cheng Huang, Jeng Hung Pan, De Bin Lin, Jackal Ma, Shih Yuan Liu, James Cc Chang, Jian Chang Lin</i>	
RESEARCH ON REDUCING ELECTRO-STATIC DISCHARGE OF TEARING FILM OF EPD.....	198
<i>Haowei Zou, Xin Li, Yong Song, Hanqing Liu, Junru Ma, Hongjun Yu, Chun Cheng Che, Hailin Xue</i>	
RESEARCH ON THE DESIGN FACTORS AFFECTING THE COG MURA OF IPS DISPLAY PRODUCTS	203
<i>Yazhou Bao, Gang Yang, Xingge Jia, Yong Song, Hongjun Yu, Chun Cheng Che, Hailin Xue</i>	

SIMPLE METHODS TO IMPROVE THE CSAM THRU-SCAN EFFICIENCY ON PACKAGE UNITS	206
<i>Hao Tan, Hnin Hnin Win Thoung, Krishnanunni Menon, Htin Kyaw, Naiyun Xu, Pik Kee Tan, Changqing Chang</i>	
INFLUENCE OF RPO FILM AND CESL MATERIAL ON DATA RETENTION IN NON-VOLATILE MEMORY	210
<i>Yen-Ting Chen, Ming-Shan Lo</i>	
DYNAMIC DEFECT LOCALIZATION BY TOGGLING INTEGRATED CIRCUITS STATES.....	214
<i>Ke-Ying Lin, Paul Kenneth Ang, Chun-Wei Ke, Toby Chen</i>	
THE MONITOR AND MANAGEMENT OF SULFIDE CONTAMINATION FOR PROBING FAB CLEAN ROOM.....	219
<i>Frank Su, W. F. Hsieh, Henry Lin, Vincent Chen, Y. S. Lou</i>	
ELECTROMIGRATION OF GOLD METALLIZATION	223
<i>Christine Hau-Riege, Youwen Yau</i>	
TEM EELS ANALYSIS FOR DRAM FAILURE ANALYSIS	228
<i>S. Y. Chen, W. Yang, G. F. Xu, C. T. Liu</i>	
APPLICATION OF EBIC AND EBAC FOR NANOSCALE FAULT ISOLATION OF FEOL DEFECT.....	232
<i>F. Rivai, P. T. Ng, Y. Z. Ma, A. C. T. Quah, N. Y. Xu, J. C. Alag, C. Q. Chen</i>	
X-RAY MICROANALYSIS BACKGROUND NOISE REDUCTION BY FIB SAMPLE PREPARATION	236
<i>K. H. Yip, P. C. Ang, K. F. Lee, L. H. Khoo</i>	
MIPI RFFE FUNCTIONAL LEAKAGE FAILURE DEBUG USING AN INTEGRATED NI-PXIE SETUP	240
<i>D. Nagalingam, A. C. T. Quah, S. J. Moon, J. C. Alag, A. W. Teo</i>	
NAND FLASH RELATIONSHIP BETWEEN THE INITIAL STATE OF NON-VOLATILE MEMORY CYCLING ENDURANCE AND THE HIGH TEMPERATURE DATA RETENTION ABILITY OF POST CYCLING.....	246
<i>Chia-Sheng Huang, Yun-Chi Liao</i>	
ASIC CIRCUIT NETLIST RECOGNITION USING GRAPH NEURAL NETWORK	251
<i>Xuenong Hong, Tong Lin, Yiqiong Shi, Bah Hwee Gwee</i>	
ANALYSIS AND IMPROVEMENT OF REPEATED WAKE-UP JITTERING H-LINE.....	256
<i>Qiang Wang, Zhengxin Zhang, Ye Wang, Honggui Jin, Qi Sun, Yong Song, Hongjun Yu, Hailin Xue, Chuncheng Che</i>	
PRINCIPAL COMPONENT ANALYSIS (PCA) OF SURFACE CONTAMINATION BY TOF-SIMS.....	260
<i>Kei Lin Sek, Pei Lin Lee, Khin Yin Pang, Younan Hua, Lei Zhu, Xiaomin Li</i>	
ANALYZE THE ESD PERFORMANCE AND BANDWIDTH DIFFERENCE FOR LC T-NETWORK AND BRIDGED T-COIL.....	264
<i>Jian-Hsing Lee, Karuna Nidhi, Natarajan Mahadeva Iyer</i>	
HYSTERESIS EFFECT INDUCES THE INDUCTOR POWER LOSS OF CONVERTER DURING THE VOLTAGE CONVERSION	269
<i>Jian-Hsing Lee, Karuna Nidhi, Chung-Yu Hung, Ting-Wei Liao, Wu-Yang Liu, Hung-Der Su</i>	

THE FAILURE MECHANISM OF THE E-SOA BOUNDARY OF POWER TRANSISTOR COLLAPSED AT HIGHER GATE VOLTAGE	276
<i>Jian-Hsing Lee, Karuna Nidhi, Tingyou Lin, Hsueh-Chun Liao, Fu-Chun Tseng, Scott Lee</i>	
3D NAND MEMORY AUTO-DELAYERING WITH GENERIC DELAYERING MODEL USING PFIB	281
<i>Bingxing Wu, Ruixin Zhang, Zhengqiang Guo, Zhenxin Zhong</i>	
NEW ROUTINE TO DETERMINE MICROSTRUCTURES OF METALLIC INTERCONNECTORS USING SEM-EBSD TECHNIQUE	287
<i>Jiang Wu, Eugene Choo</i>	
RELIABILITY ANALYSIS USING ADVANCED MODELING TECHNIQUE FOR MEMS MICROPHONE.....	295
<i>Shubham Shubham, Xin Song, Yunfei Ma, Mark G. Da Silva, Zhijun Guo, Jeremy Johnson, Michael Pedersen</i>	
IC SYNTHLOGO: A SYNTHETIC LOGO IMAGE DATASET FOR COUNTERFEIT AND RECYCLED IC DETECTION.....	302
<i>Mukhil Azhagan Mallaiyan Sathiaselan, Manoj Yasaswi Vutukuru, Suryaprakash Vasudev Pandurangi, Shayan Taheri, Navid Asadizanjani</i>	
ANALYSIS FOR THE PHYSICAL MECHANISM OF THE ABNORMAL INCREASE OF IDSAT IN NMOS UNDER HCI.....	310
<i>Wei-Cheng Chu, Bo-An Tsai, Cheng-Te. Chen, Chi-Li Chang, Wei-Fong Lin</i>	
STUDY ON THE FACTORS OF START-UP WHITE LINE CAUSED BY COUPLED ELECTRIC FIELD IN TFT LCD	315
<i>Xin Li, Yong Song, Hongjun Yu, Chunheng Che, Hailin Xue</i>	
VIRTUAL METROLOGY OF VISUALIZING COPPER MICROSTRUCTURE FEATURED WITH COMPUTER VISION AND ARTIFICIAL NEURAL NETWORK.....	319
<i>Lingyen Yeh, Rencheng Chen</i>	
METAL MIGRATION INDUCED BREAKDOWN FROM GATE CONTACT IN BULK FINFET DEVICES	324
<i>Xin Yang, Yihong Qing, Kuei-Shu Chang-Liao, Yuchong Qiao, Chaolun Wang, Zhiwei Liu, Luoyong Li, Chihang Tsai, Yongren Wu, Yazhen Xie, Weisong Yu, Xing Wu</i>	
LOCAL CAPACITANCE-VOLTAGE PROFILING AND DEEP LEVEL TRANSIENT SPECTROSCOPY OF SiO ₂ /SiC INTERFACES BY SCANNING NONLINEAR DIELECTRIC MICROSCOPY	328
<i>Kohei Yamasue, Yasuo Cho</i>	
FAILURE ANALYSIS ON DIODE-TRIGGERED SILICON-CONTROLLED RECTIFIERS BY USING NONDESTRUCTIVE X-RAY MICROSCOPY	334
<i>Xinqian Chen, Mengge Jin, Feihou, Fang Liang, Zijian Zhang, Yanan Wang, Dongming Liu, Le Chen, Chaolun Wang, Zhiwei Liu, Xing Wu</i>	
FINDING INVISIBLE CRACKS VIA NANO-PROBING.....	338
<i>Lai-Seng Yeoh, Kok-Cheng Chong, Susan Li, Andreas Rummel</i>	
SUPER WIDE AREA CROSS SECTIONING USING BROAD AR ION BEAM ON SOLDER BUMPING	342
<i>Natsuko Asano, Tamae Omoto, Lu Jinfeng, Shogo Kataoka, Shunsuke Asahina</i>	

SIMS METHODOLOGY STUDY OF INDIUM IMPLANT QUANTIFICATION	347
<i>Yun Wang, Kian Kok Ong, Han Wei Teo, Ramesh Rao Nistala, Zhi Qiang Mo</i>	
PHYSICAL MECHANISM FOR DIFFERENT PHASES AND TURN-AROUND OF IDSAT IN PMOS UNDER HCI STRESS	351
<i>Bo-An Tsai, Wei-Cheng Chu, Yu-Chih Chang, Yi-Heng Chen, Chien-Fu Chen</i>	
RESEARCH ON THE RELATIONSHIP BETWEEN THE LIMIT DESIGN AND MATERIAL OF THE LGP AND THE DAMAGE OF THE LGP	357
<i>Shixin Wang, Gang Yang, Yong Song, Hongjun Yu, Chuncheng Che, Hailin Xue, Kai Wang</i>	
A COMPREHENSIVE NEGATIVE BIAS TEMPERATURE INSTABILITY MODEL FOR GALLIUM-NITRIDE METAL-INSULATOR-SEMICONDUCTOR HIGH ELECTRON MOBILITY TRANSISTORS FROM 77K TO 393K.....	361
<i>Ting-Tzu Kuo, Ying-Chung Chen, Yu-Shan Lin, Yu-Chieh Chien, Fong-Min Ciou, Po-Hsun Chen, Ting-Chang Chang</i>	
FAILURE ANALYSIS ON MIM CAPACITOR FAILURES OF RF DEVICES USING SIMPLE CIRCUIT EDIT PASSIVE VOLTAGE CONTRAST METHOD	365
<i>Siong Luong Ting, Pik Kee Tan, Naiyun Xu, Hnin Hnin Win Thoungh, Htin Kyaw, Krishnanunni Menon, Yanlin Pan, Hao Tan, Changqing Chen</i>	
REINFORCEMENT LEARNING TO REDUCE FAILURES IN SOT-MRAM SWITCHING	371
<i>Johannes Ender, Roberto Lacerda De Orio, Simone Fiorentini, Siegfried Selberherr, Wolfgang Goes, Viktor Sverdlov</i>	
APPLICATION OF ION CHROMATOGRAPHY IN CORROSION FAILURE ANALYSIS OF COMPONENTS AND DEVICES.....	375
<i>Chao Cui, Yun Zhao, Yong Xiao, Ziwen Cai, Haolin Wang, Jin Li</i>	
LOW-VOLTAGE EBIC INVESTIGATION OF FAILS	380
<i>Andreas Rummel, Greg M. Johnson, Matthias Kemmler, Thomas Rodgers</i>	
PROPOSAL FOR ADVANCED DEVICES ANALYSIS USING 930NM LIGHT SOURCE AND GAAS SIL	386
<i>Tomonori Nakamura, Akihito Uchikado, Mitsunori Nishizawa, Ikuo Arata, Masanori Kobayashi, Xiangguang Mao, Akira Shimase</i>	
HCI SOA ENHANCEMENT FOR EDNMOS WITH METAL FIELD PLATE.....	390
<i>J. M. Soon, P. Y. Tan, C. W. Eng, M. Cai, M. Li</i>	
TEM-EDX CHARACTERIZATION OF IMMERSION PD & PD-MOOX ON CU & NIP.....	394
<i>Wan Tatt Wai, Arul Krishnan</i>	
THE INFLUENCE OF ADHESIVE TAPE ON L0 LIGHT LEAKAGE OF TFT-LCD PRODUCTS AFTER RELIABILITY TEST	398
<i>Tianyu Xu, Gang Yang, Zheng Jia, Jingang Wang, Yong Song, Hongjun Yu, Chuncheng Che, Hailin Xue</i>	
STABILITY OF SCHOTTKY BARRIER DIODE INTEGRATED IN P-GAN ENHANCEMENT-MODE GAN POWER TECHNOLOGY.....	402
<i>Jethro Oroceo Gallardo, Brice De Jaeger, Sachidananda Dash, Shun-Wei Tang, Thanh Nga Tran, Dirk Wellekens, Benoit Bakeroot, Stefaan Decoutere, Tian-Li Wu</i>	

IN-SITU SEM MICROMECHANICAL EXPERIMENTS ON DUAL DAMASCENE COPPER TEST STRUCTURES FOR INVESTIGATION OF INTERFACIAL PROPERTIES OF COPPER INTERCONNECTS	408
<i>Wieland Heyn, Hanno Melzner, Klaus Goller, Sergey Ananiev, Andre Clausner, Johannes Zechner, Ehrenfried Zschech</i>	
NANO-CT IMAGING OF ELECTRICALLY STRESSED POWER DEVICE METALLIZATION.....	413
<i>Dominik Mueller, Christian Fella, Frank Altmann, Jonas Graetz, Andreas Balles, Matt Ring, Jeff Gambino</i>	
CASE STUDIES: MASKED READ-ONLY MEMORY FAILURE FAULT ISOLATION WITHOUT BITMAPPING	420
<i>Bl Yeoh, Mh Thor, Ls Gan, Sh Goh, Yh Chan, Wf Soh, C. Shaalini, Wiswa Naradha</i>	
MECHANICAL BEOL STABILITY INVESTIGATION AT CU-PILLARS UNDER CYCLIC LOAD.....	426
<i>Jendrik Silomon, Jürgen Gluch, André Clausner, Ehrenfried Zschech</i>	
METICULOUS SYSTEM CALIBRATION AS A KEY FOR EXTRACTING CORRECT PHOTON EMISSION SPECTRA.....	432
<i>Norbert Herfurth, Christian Boit</i>	
EXTRACTION OF SECRETS FROM ALLEGEDLY SECRET-FREE IOT SENSORS USING ARTIFICIAL INTELLIGENCE	437
<i>Tuba Kiyan, Thilo Krachenfels, Elham Amini, Zarin Shakibaei, Christian Boit, Jean-Pierre Seifert</i>	
FAILURE ANALYSIS OF LARGE AREA PT/HFO ₂ /PT CAPACITORS USING MULTILAYER PERCEPTRONS	443
<i>J. Muñoz-Gorritz, S. Monaghan, K. Cherkaoui, J. Suñé, P. K. Hurley, E. Miranda</i>	
A NEW 3D X-RAY SOLUTION FOR NON-DESTRUCTIVE CONSTRUCTION ANALYSIS OF ADVANCED ELECTRONICS PACKAGES.....	448
<i>Yanjing Yang, Allen Gu, Thom Gregorich, Masako Terada</i>	
RAPID ASSESSMENT OF SEMICONDUCTOR THERMAL QUALITY.....	452
<i>Voon Hon Wong, Andras Vass-Varnai, Antonio Caruso, Young Joon Cho, Yong Seoung Lee, Kwon Hyung Lee</i>	
PITFALLS FOR THE CHARACTERIZATION OF SELF-HEATING EFFECT IN NANO-SCALED DEVICES.....	458
<i>Dongxing Zhang, Pengpeng Ren, Zhigang Ji</i>	
SIGNIFICANCE OF DYNAMIC ELECTRICAL FAULT ISOLATION TECHNIQUES ON BURIED VIA VOID DEFECTS.....	462
<i>M. H. Thor, S. H. Goh, B. L. Yeoh, L. S. Gan, Y. H. Chan</i>	
AUTOMATIC DEFECT REVIEW OF A PATTERNED WAFER USING HYBRID METROLOGY	467
<i>Byungwoon Ahn, Ahjin Jo, Jubok Lee, Sang-Joon Cho</i>	
ATMOSPHERIC CORROSION OF AG/CU PLATED FENI BASED LEADFRAME USED IN MOSFET PACKAGE	471
<i>Lois Jinzhi Liao, Bisheng Wang, Juanlu Cai, Tao Zhang, Jing Liu, Liu Binhai, Xi Zhang, Younan Hua, Xiaomin Li</i>	

Author Index