

**2017 18th International Conference
on Thermal, Mechanical and
Multi-Physics Simulation and
Experiments in Microelectronics
and Microsystems
(EuroSimE 2017)**

**Dresden, Germany
3 – 5 April 2017**



**IEEE Catalog Number: CFP17566-POD
ISBN: 978-1-5090-4345-3**

**Copyright © 2017 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:	CFP17566-POD
ISBN (Print-On-Demand):	978-1-5090-4345-3
ISBN (Online):	978-1-5090-4344-6

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

OPTIMIZATION OF THROUGH CRACKSTOP VIA USING FINITE ELEMENT MODELING	1
<i>Mohamed A. Rabie ; Nick Polomoff</i>	
DETERMINATION OF E, CTE OF THIN FILMS FROM CURVATURE MEASUREMENT	6
<i>S. Ananiev ; M. Schneegans</i>	
FIN-TUBE AND PLATE HEAT EXCHANGERS — EVALUATION OF TRANSIENT PERFORMANCE.....	7
<i>Ilja Belov ; Andreas Nordh ; Kent Salomonsson ; Peter Leisner</i>	
A STUDY ON THE CORRELATION BETWEEN EXPERIMENT AND SIMULATION BOARD LEVEL DROP TEST FOR SSD.....	12
<i>Tae Min Kang ; Yong Chang Lee ; Byung Kwon Bae ; Won Seob Song ; Jae Sung Lee</i>	
INTERFACE COMPARISON INVOLVED IN FLEXIBLE ELECTRONICS USING MOLECULAR MODELING	18
<i>N. E. Iwamoto ; Carol Putman ; Gregory Vernon ; Rachel Cramm Horn ; Aaron Bernreuther</i>	
LIFE PREDICTION OF LEAD ALLOY BASED ON MULTI-FAILURE CRITERIA.....	25
<i>Krystian Jankowski ; Artur Wymyslowski</i>	
INVESTIGATION AND OPTIMIZATION OF MICROFLUIDIC FLOW-THROUGH CHAMBERS FOR HOMOGENEOUS REACTION SPACE	30
<i>Péter Pálovics ; Márta Rencz</i>	
ANALYZING DELAMINATION IN ASIC PACKAGES.....	36
<i>G. Pecanac ; C. Silber ; K. Kosbi ; L. Vollmer ; M. Wiedenmann ; T. von Bargen ; A. Fischer</i>	
PACKAGING EFFECTS ON Q FACTOR OF MEMS RESONATOR	41
<i>Kisoo Shin ; Do-Hwan Park ; Seungoh Han</i>	
TRANSIENT THERMAL SIMULATION OF HIGH POWER LED AND ITS CHALLENGES	45
<i>Sanchit Tandon ; E. Liu ; Thomas Zahner ; Sebastian Besold ; Wolfgang Kalb ; Gordon Elger</i>	
THERMO-MECHANICAL PROPERTIES OF ABS PARTS FABRICATED BY FUSED DEPOSITION MODELING AND VAPOR SMOOTHING	53
<i>Sung-Uk Zhang ; Jonghyeuk Han ; Hyun-Wook Kang ; Byoung-Chul Shin</i>	
UNDERSTANDING AND CONTROLLING CHROMATICITY SHIFT IN LED DEVICES	59
<i>J. Lynn Davis ; Karmann Mills ; Michael Lamvik ; Curtis Perkins ; Georgiy Bobashev ; Joseph Young ; Robert Yaga ; Cortina Johnson</i>	
LEVERAGING ACCELERATED TESTING TO ASSESS THE RELIABILITY OF TWO-STAGE AND MULTI-CHANNEL DRIVERS	67
<i>J. Lynn Davis ; Curtis Perkins ; Aaron Smith ; Terry Clark ; Karmann Mills</i>	
INFLUENCE OF UNDER BUMP METALIZATION DIMENSIONS ON PASSIVATION NITRIDE STRESS	73
<i>Raj Sekar Sethu ; Salil Hari Kulkarni ; How Ung Ha ; Kok Heng Soon</i>	
SIMULATION INVESTIGATIONS FOR THE COMPARISON OF STANDARD AND HIGHLY ROBUST ALCU THICK METAL TRACKS	78
<i>Raj Sekar Sethu ; Verena Hein ; Marco Erstling ; Kirsten Weide-Zaage</i>	
IMPACT OF WIRE MATERIAL AND FLUORINE IN DIELECTRIC ON WIRE PULL TEST STRESS	84
<i>Raj Sekar Sethu ; Christian Schirrmann ; How Ung Ha ; Kok Heng Soon</i>	
IR IMAGING OF LASER STRUCTURES FOR THERMAL CONTROL OF PHOTONICS INTEGRATED CIRCUITS (PICS)	91
<i>Niamh Richardson ; Jeff Punch ; Eric Dalton ; Marian Carroll</i>	
INVESTIGATION ON THE TEMPERATURE DISTRIBUTION OF INTEGRATED HEATER CONFIGURATIONS IN A LAB-ON-A-CHIP SYSTEM.....	98
<i>Petra Streit ; Joerg Nestler ; Robert Schulze ; Alexey Shaporin ; Thomas Otto</i>	
EFFECT OF VOIDS ON CRACK PROPAGATION IN AUSN DIE ATTACH FOR HIGH-TEMPERATURE POWER MODULES	106
<i>F. Arabi ; L. Theolier ; T. Youssef ; M. Medina ; J.-Y. Deletage ; E. Woirgard</i>	
A PRACTICAL APPLICATION OF THE RESPONSE SURFACE METHODOLOGY TO POWER ELECTRONICS FAILURE PREDICTION	112
<i>A. Renaud ; E. Woirgard</i>	

THEORETICAL AND EXPERIMENTAL STUDY OF THERMAL RESISTANCE & TEMPERATURE DISTRIBUTION IN HIGH-POWER ALGAINN LED ARRAYS	118
<i>A. E. Chernyakov ; A. V. Aladov ; A. L. Zakgeim ; M. N. Mizerov ; V. M. Ustinov ; I. A. Kalashnikov ; A. A. Gavrikov ; V. I. Smirnov ; V. A. Sergeev</i>	
LIFETIME PREDICTION BASED ON ANALYTICAL MULTI-PHYSICS SIMULATION FOR LIGHT-EMITTING DIODE (LED) SYSTEMS	123
<i>Xi Yang ; Zili Wang ; Yi Ren ; Bo Sun ; Cheng Qian</i>	
LEAD FREE SOLDER JOINTS CHARACTERISATION USING SINGLE LAP SHEAR TESTS	131
<i>S. Pin ; H. Frémont ; A. Gracia</i>	
EFFECTS OF RESIDUAL STRESSES ON CRACKING AND DELAMINATION RISKS OF AN AVIONICS MEMS PRESSURE SENSOR	137
<i>J. Auersperg ; E. Auerswald ; C. Collet ; T. Dean ; D. Vogel ; T. Winkler ; S. Rzepka</i>	
ALTERNATIVE CU PILLAR BUMPS DESIGN TO REDUCE THERMOMECHANICAL STRESS INDUCED DURING FLIP CHIP ASSEMBLY	142
<i>Melina Lofrano ; Vladimir Cherman ; Mario Gonzalez ; Eric Beyne</i>	
CHARACTERIZATION OF EPOXY BASED HIGHLY FILLED DIE ATTACH MATERIALS IN MICROELECTRONICS	150
<i>I. Maus ; C. Liebl ; M. Fink ; D.-K. Vu ; M. Hartung ; H. Preu ; K. M. B. Jansen ; B. Michel ; B. Wunderle ; L. Weiss</i>	
UNDERSTANDING THE TRANSPORT PHENOMENA LEADING TO TARNISHING OF THE REFLECTING SILVER LAYER CAUSING REDUCED LIGHT OUTPUT OF LEDS	157
<i>A. Herrmann ; S. J. F. Erich ; L. G. J. v. d. Ven ; W. D. van Driel ; M. van Soestbergen ; A. Mavinkurve ; F. De Buyl ; O. C. G. Adan</i>	
EXPERIMENTAL DETERMINATION OF THE YOUNG'S MODULUS OF VARIOUS ELECTRONIC PACKAGING MATERIALS	163
<i>F. Kraemer ; M. Roellig ; R. Metasch ; S. Wiese ; J. Al Ahmar ; K. Meier</i>	
THE ONSET OF PLASTIC FLOW IN COPPER MATERIALS USED FOR RIGID AND FLEXIBLE PCB	169
<i>S. Wiese ; F. Kraemer ; J. Al Ahmar</i>	
STRENGTH CHARACTERIZATION OF TEOS AND FTEOS INTERLAYER DIELECTRIC MATERIALS TO COMPARE FRACTURE RISK IN DIE STACK BY 3D FE SIMULATION APPROACH	174
<i>Nishant Lakhera ; Jim Howell ; Scott Kipperman ; Evan Welsh ; Ilko Schmadlak</i>	
UNCERTAINTY QUANTIFICATION IN POLYSILICON MEMS THROUGH ON-CHIP TESTING AND REDUCED-ORDER MODELLING	180
<i>Ramin Mirzazadeh ; Saeed Eftekhari Azam ; Eelco Jansen ; Stefano Mariani</i>	
THERMAL DESIGN OF MONOCULAR VISION SYSTEM USED IN AUTOMOTIVE APPLICATION	188
<i>Gamal Refai-Ahmed ; Hoa Do ; Arun Raghupathy ; Rubab Kadam ; Jay Gillis</i>	
EFFECTS OF PHOSPHOR DISPERSION ON OPTICAL CHARACTERISTICS OF LED CHIP SCALE PACKAGE LEDS	195
<i>Cheng Qian ; Liang Liang Luo ; Jia Jie Fan ; Xiao Qiang Li ; Xue Jun Fan ; Guo Qi Zhang</i>	
LUMINESCENCE MECHANISM ANALYSIS ON HIGH POWER TUNABLE COLOR TEMPERATURE CHIP-ON-BOARD WHITE LED MODULES	198
<i>Jiajie Fan ; Chaoyi Xie ; Cheng Qian ; Xuejun Fan ; Guoqi Zhang</i>	
RAPID TESTING METHOD FOR INTERFACE CRACK ANALYSIS OF AN ADHESIVE BONDED JOINT USING AN ELECTRODYNAMIC SHAKER	204
<i>C. Vernier ; M. Dressler ; H.-P. Seebich ; B. Wunderle</i>	
THERMAL CONDUCTIVITY OF FUNCTIONALIZED GRAPHENE-POLYMER NANOCOMPOSITE: A NON-EQUILIBRIUM MOLECULAR DYNAMICS STUDY	205
<i>Hongyu Tang ; Huaiyu Ye ; Xianping Chen ; Xuejun Fan ; Guoqi Zhang</i>	
PROGNOSTICS AND HEALTH MONITORING OF ELECTRONIC SYSTEM: A REVIEW	210
<i>Alexandru Prisacaru ; Przemyslaw Jakub Gromala ; Mateus Bagetti Jeronimo ; Bongtae Han ; Guo Qi Zhang</i>	
DESIGN OPTIMIZATION FOR A POWER PACKAGE BY SIMULATION	221
<i>Haibo Fan ; WW Chow ; Pompeo V. Umali ; Fei Wong ; Kai Zhang ; Haibin Chen ; Jingshen Wu</i>	
CORRELATION BETWEEN MECHANICAL MATERIAL PROPERTIES AND STRESS IN 3D-INTEGRATED SILICON MICROSTRUCTURES	225
<i>M. Stiebing ; D. Vogel ; W. Steller ; M. J. Wolf ; U. Zschenderlein ; B. Wunderle</i>	
NONLINEAR MODELING AND CHARACTERIZATION OF A THERMALLY DRIVEN MEMS ACTUATOR WITH A FOLDED SPRING REFERENCE BEAM	231
<i>Shahabeddin Vamegh Estahbanati ; Maher Bakri-Kassem ; Rached Dhaouadi</i>	

SIMULATION-DRIVEN DEVELOPMENT OF A NOVEL SIC EMBEDDED POWER MODULE DESIGN CONCEPT	235
<i>Yafan Zhang ; Klaus Neumaier ; Olaf Zschieschang ; Gerald Weis ; Gerhard Schmid ; Mietek Bakowski ; Hans-Peter Nee</i>	
AIR-COUPLED PMUT AT 100 KHZ WITH PZT ACTIVE LAYER AND RESIDUAL STRESSES: MULTIPHYSICS MODEL AND EXPERIMENTAL VALIDATION	242
<i>G. Massimino ; L. D'Alessandro ; F. Procopio ; R. Ardito ; M. Ferrera ; A. Corigliano</i>	
NONLOCAL CONTINUUM DAMAGE MECHANICS APPROACH IN THE FINITE ELEMENT SIMULATION OF LEAD-FREE SOLDER JOINTS	246
<i>Youssef Maniar ; Benjamin Metais ; Marta Kuczynska ; Alexander Kabakchiev ; Peter Binkele ; Siegfried Schmauder</i>	
PREDICTIVE RELIABILITY WITH SIGNAL BASED META-MODELS	254
<i>Stephanie Kunath ; Veit Bayer ; Roland Niemeier</i>	
FRACTURE PROBABILITY OF MLCC IN DEPENDENCE OF SOLDER FILLET HEIGHT	257
<i>Joseph Al Ahmar ; Erik Wiss ; Steffen Wiese</i>	
FEM SIMULATION OF CRACKS IN MLCC DURING REFLOW SOLDERING	261
<i>Joseph Al Ahmar ; Steffen Wiese</i>	
ANALYTICAL AND SIMULATION-BASED RISK ASSESSMENT OF IMPRINT DEPTH AND BRITTLE FRACTURE IN BOND PAD STACKS.....	265
<i>Georg M. Reuther ; Ivan Penjovic ; Angel Ochoa Brezmes ; Reinhard Pufall</i>	
HIGHLY PARALLEL COMPUTATIONS OF CREEP DEFORMATION IN FLIP-CHIP INTERCONNECTIONS	271
<i>Cedrick Bouchard ; Julien Sylvestre</i>	
VALIDATION OF DIFFERENT SAC305 MATERIAL MODELS CALIBRATED ON ISOTHERMAL TESTS USING IN-SITU TMF MEASUREMENT OF THERMALLY INDUCED SHEAR LOAD.....	277
<i>M. Kuczynska ; N. Schafet ; U. Becker ; R. Metasch ; M. Roellig ; A. Kabakchiev ; S. Weihe</i>	
THE NUMERICAL ANALYSIS OF HEAT TRANSFER AT NANOSCALE USING FULL AND REDUCED DPL MODELS	295
<i>Tomasz Raszkowski ; Agnieszka Samson ; Mariusz Zubert ; Marcin Janicki ; Andrzej Napieralski</i>	
A TEST DEVICE FOR IN SITU TEM INVESTIGATIONS ON FAILURE BEHAVIOUR OF CARBON NANOTUBES EMBEDDED IN METALS UNDER TENSILE LOAD.....	301
<i>Nathanael Jöhrmann ; Steffen Hartmann ; Kiran Jacob ; Jens Bonitz ; Kathrine E. MacArthur ; Sascha Hermann ; Stefan E. Schulz ; Bernhard Wunderle</i>	
DESIGN AND SIMULATION OF A 2-BIT DISTRIBUTED S-BAND MEMS PHASE SHIFTER	308
<i>Noor Amalina Ramli ; Tughrul Arslan</i>	
A POF AND STATISTICS COMBINED RELIABILITY PREDICTION FOR LED ARRAYS IN LAMPS.....	313
<i>Bo Sun ; Xuejun Fan ; Jiajie Fan ; Cheng Qian ; G. Q. Zhang</i>	
TRANSFER FUNCTION ORDER REDUCING METHOD FOR SUCCESSIVE NETWORK REDUCTION IN COMPLEX FREQUENCY SPACE	318
<i>Márton Németh ; Péter Pálovics ; András Poppe</i>	
THERMAL SIMULATION OF HYBRID CIRCUITS WITH VARIABLE HEAT TRANSFER COEFFICIENT	325
<i>Tomasz Torzewicz ; Agnieszka Samson ; Tomasz Raszkowski ; Artur Sobczak ; Marcin Janicki ; Mariusz Zubert ; Andrzej Napieralski</i>	
IN-SITU MONITORING OF FIELD CONDITIONS AND INTERCONNECT INTEGRITY FOR AN ELECTRONIC ON-BOARD MODULE	329
<i>Riet Labie ; Bart Vandavelde ; Wesley van Meensel ; Mike Vogeeler ; Daniel Werkhoven ; Bart Allaert ; Geert Willems</i>	
A MODEL OF THE ELECTRIC FIELD IN A ONE-DIMENSIONAL MICRO-MIRROR ARRAY AND ELECTROMECHANICAL SIMULATIONS AND OPTIMIZATION IN A SINGLE CELL	334
<i>Duy Duc Nguyen ; Nguyen Nhat Binh Trinh ; Michel Lenczner ; Frédéric Zamkotsian ; Scott Cogan</i>	
A TOOL FOR AIDED MULTI-SCALE MODEL DERIVATION AND ITS APPLICATION TO THE SIMULATION OF A MICRO MIRROR ARRAY.....	339
<i>Walid Belkhir ; Nicolas Ratier ; Duy Duc Nguyen ; Nguyen Nhat Binh Trinh ; Michel Lenczner ; Frédéric Zamkotsian</i>	
DESIGN OF HIGH VOLTAGE 140×100 FOOTPRINT IGBT MODULE.....	347
<i>Daohui Li ; Matthew Packwood ; Fang Qi ; Steve Jones ; Xiaoping Dai</i>	
MODELLING OF THERMAL AGING OF MOULDING COMPOUND BY USING AN EQUIVALENT LAYER ASSUMPTION	352
<i>Bingbing Zhang ; Alexander Lion ; Michael Johlitz ; Leo Ernst ; K. M. B. Jansen ; Duc-Khoi Vu ; Laurens Weiss</i>	

LIFETIME MODELING BASED ON ANODIC OXIDATION FAILURE FOR PACKAGES WITH INTERNAL GALVANIC ISOLATION	358
<i>R. Schaller ; V. Strutz ; H. Theuss ; R. Dudek ; S. Rzepka</i>	
A LASER SPECKLE PHOTOMETRY BASED NON-DESTRUCTIVE METHOD FOR MEASURING STRESS CONDITIONS IN DIRECT-COPPER-BONDED CERAMICS FOR POWER ELECTRONIC APPLICATION	363
<i>S. Muench ; M. Roellig ; U. Cikalova ; B. Bendjus ; L. Chen ; S. Sudip</i>	
MULTI-PHYSICS BASED SYSTEM SIMULATIONS FOR MAGNETIC SENSORS	371
<i>Helmut Köck ; Gernot Binder ; Frank Heinrichs ; Gregor Wautischer ; Florian Bruckner ; Dieter Süß</i>	
IN-SITU CHARACTERIZATION OF MOISTURE ABSORPTION AND HYGROSCOPIC SWELLING OF SILICONE/PHOSPHOR COMPOSITE FILM AND EPOXY MOLD COMPOUND IN LED PACKAGING	376
<i>Ibrahim Khalilullah ; Talukder Reza ; Liangbiao Chen ; A. K. M. Monayem H. Mazumder ; Jiajie Fan ; Cheng Qian ; Guoqi Zhang ; Xuejun Fan</i>	
VIBRATION INVESTIGATION IN POWER MODULE BUSBAR DESIGN	385
<i>Matt Packwood ; Daohui Li ; Xiapoing Dai ; Steve Jones</i>	
BOARD LEVEL RELIABILITY ASSESSMENT OF CONSUMER COMPONENTS FOR AUTOMOTIVE USE BY SIMULATION AND SOPHISTICATED OPTICAL DEFORMATION ANALYSES	391
<i>R. Dudek ; M. Hildebrand ; S. Rzepka ; J. Beintner ; R. Döring ; L. Scheiter ; B. Seiler ; T. Fries ; R. W. Ortmann</i>	
FATIGUE MEASUREMENT SETUP UNDER COMBINED THERMAL AND VIBRATION LOADING ON ELECTRONIC SMT ASSEMBLY	400
<i>Karsten Meier ; René Metasch ; Mike Roellig ; Karlheinz Bock</i>	
CONSIDERATIONS ON PRE-STRESS IN A 3D-PRINTED CAPACITIVE FORCE/PRESSURE SENSOR	407
<i>Lisa-Marie Faller ; Hubert Zangl</i>	
ADSORPTION OF GASES ON MONOLAYER GESE: A FIRST PRINCIPLE STUDY	413
<i>Lian Liu ; Qun Yang ; Huaiyu Ye ; Xianping Chen ; Guoqi Zhang</i>	
SNS MONOLAYER AS GAS SENSORS: INSIGHTS FROM A FIRST-PRINCIPLES INVESTIGATION	418
<i>Fafei Hu ; Chunjian Tan ; Huaiyu Ye ; Xianping Chen ; Guoqi Zhang</i>	
MODEL EVALUATION AND IMPROVEMENT FOR COMMERCIALY AVAILABLE SILICON CARBIDE POWER MOSFETS	424
<i>Andrii Stefanskyi ; Lukasz Starzak ; Andrzej Napieralski</i>	
ELECTRICAL AND OPTICAL PROPERTIES OF NO AND H2S ADSORPTION ON ARSENIC PHOSPHORUS	428
<i>Yingying Zhang ; Kai Zheng ; Xianping Chen ; Guoqi Zhang ; Lian liu ; Chunjian Tan ; Qun Yang ; Junke Jiang ; Huaiyu Ye</i>	
FIRST PRINCIPLE DESIGN OF CDS/GERMANENE HETEROSTRUCTURES WITH TUNABLE ELECTRONIC AND TRANSPORT PROPERTIES	434
<i>Kai Zheng ; Huaiyu Ye ; Guoqi Zhang ; Yingying Zhang ; Lian Liu ; Junke Jiang ; Qun Yang ; Chunjian Tan ; Xianping Chen</i>	
MODELLING AND DESIGN OF MICRO-OPTO-MECHANICAL PRESSURE SENSORS IN THE PRESENCE OF RESIDUAL STRESSES	440
<i>V. Rochus ; R. Jansen ; R. Haouari ; B. Figeys ; V. Mukund ; F. Verhaegen ; J. Goyvaerts ; P. Neutens ; J. O'Callaghan ; A. Stassen ; S. Lenci ; X. Rottenberg</i>	
MULTI-PHYSICS MODELS AND CONDITION-BASED MONITORING FOR 3D-PRINTING OF ELECTRONIC PACKAGES	445
<i>Chris Bailey ; Stoyan Stoyanov ; Tim Tilford ; Georgios Tourloukis</i>	
ACCELERATED LIFE TIME MEASUREMENT WITH IN-SITU FORCE AND DISPLACEMENT MONITORING DURING THERMAL CYCLING ON SOLDER JOINTS	453
<i>R. Metasch ; M. Roellig ; M. Kuczynska ; N. Schafet ; U. Becker ; K. Meier ; I. Panchenko</i>	
THE SCOPE OF APPLICABILITY OF DPL MODEL TO THE HEAT TRANSFER IN ELECTRON DEVICES	460
<i>Mariusz Zubert ; Tomasz Raszkowski ; Agnieszka Samson ; Marcin Janicki ; Andrzej Napieralski</i>	
SIMULATIONS OF THE IMPACT OF SINGLE-GRAINED LEAD-FREE SOLDER JOINTS ON THE RELIABILITY OF BALL GRID ARRAY COMPONENTS	466
<i>Andreas Löwberg ; Per-Erik Tegehall ; Göran Wetter ; Klas Brinkfeldt ; Dag Andersson</i>	
ROBUST DESIGN OPTIMIZATION: ON METHODOLOGY AND SHORT REVIEW	476
<i>E. Bektas ; K. Broermann ; G. Pećanac ; S. Rzepka ; C. Silber ; B. Wunderle</i>	
TOWARDS HIGH FIDELITY SILICON MICROPHONES: EVALUATING THE POTENTIAL OF INDUSTRIAL MICROSYSTEMS APPLYING TAILORED SYSTEM-LEVEL MODELS	483
<i>G. Schrag ; T. Künzig</i>	

TOPOLOGY OPTIMIZATION OF A 3D PRINTED ACOUSTIC CHAMBER FOR PHOTOACOUSTIC SPECTROSCOPY	489
<i>Rachid Haouari ; Veronique Rochus ; Liesbeth Lagae ; Xavier Rottenberg</i>	
PROGNOSTICS & HEALTH MANAGEMENT FOR LED-BASED APPLICATIONS	494
<i>W. D. van Driel ; B. Jacobs ; D. Schenkelaars ; M. Klompenhouwer ; R. Poelma ; B. El Mansouri ; L. M. Middelburg</i>	
DELAMINATION-INDUCED STITCH CRACK OF COPPER WIRES	498
<i>M. van Soestbergen ; A. Mavinkurve ; S. Shantaram ; J. J. M. Zaal</i>	
EFFECT OF EXCITATION CONDITIONS ON THE DURABILITY OF HIGH STANDOFF ELECTRONIC COMPONENTS AND ASSEMBLIES UNDER MULTIAXIAL VIBRATION EXCITATION	502
<i>Raman Sridharan ; Abhijit Dasgupta</i>	
REQUIREMENTS SPECIFICATION FOR MULTI-DOMAIN LED COMPACT MODEL DEVELOPMENT IN DELPHI4LED	507
<i>A. Alexeev ; R. Bornoff ; S. Lungten ; G. Martin ; G. Onushkin ; A. Poppe ; M. Rencz ; J. Yu</i>	
SIMULATION OF DELAMINATION INITIATION AND SUBSEQUENT PROPAGATION USING COHESIVE ZONES	515
<i>Maofen Zhang ; Daoguo Yang ; Leo Ernst ; Bingbing Zhang</i>	
AN ALAS/GERMANENE HETEROSTRUCTURE WITH OUTSTANDING TUNABILITY OF ELECTRONIC PROPERTIES	525
<i>Chunjian Tan ; Qun Yang ; Huaiyu Ye ; Xianping Chen ; G. Q. Zhang</i>	
THE INTRIGUING ELECTRONIC AND OPTICAL PROPERTIES MODULATION IN BLUE PHOSPHORENE/G-III-NITRIDES HETEROSTRUCTURES	530
<i>Qun Yang ; Chunjian Tan ; Huaiyu Ye ; Xianping Chen ; Guoqi Zhang</i>	
CHARACTERIZATION OF THERMAL CONDUCTIVITY IN POLYMER COMPOSITE HEAT EXCHANGER PARTS	535
<i>Ismail Darawsheh ; Antoine Diana ; Peter Rodgers ; Valerie Evely ; Fahad Almaskari</i>	
MODEL ORDER REDUCTION AS AN INTEGRAL PART OF E-MOBILITY DEVELOPMENT PROCESS	545
<i>Thomas Iberer</i>	
THERMAL EXPANSION MULTI PHYSIC SIMULATION METHODOLOGY FOR LED HEADLAMPS	550
<i>H. Mechmeche ; Y. Cheng ; C. Roucoules ; D. Vilette</i>	
Author Index	