

Date: Wednesday, 27/Sep/2017

- 8:00am - 9:00am** **Registration**
Foyer
- 9:00am - 9:15am** **Welcome**
Chairs:
John Janssen, NXP Semiconductors
Wendy Luiten, WLC
Genevieve Martin, Philips Lighting
- 9:15am - 10:00am** **Keynote I**
Session Chair: **John Janssen**, NXP Semiconductors

UvA 3&4 Thomas Harder, ECPE European Center for Power Electronics e.V.
Power Electronics Research in the European ECPE Network – High Power Density System Integration
- 10:00am - 11:00am** **Session 1: Modelling and Simulation I**
Session Chair: **John Janssen**, NXP Semiconductors

UvA 3&4
- 11:00am - 11:30am** **Vendor Session**
Session Chair: **Wendy Luiten**, WLC

UvA 3&4
- 11:30am - 12:00pm** **Coffee break**
- 12:00pm - 1:00pm** **Session 2: Power Electronics**
Session Chair: **Thomas Harder**, ECPE European Center for Power Electronics e.V.

UvA 3&4
- 1:00pm - 2:10pm** **Lunch**
- 2:10pm - 3:30pm** **Session 3: Thermal Measurement I**
Session Chair: **Gabor Farkas**, Mentor Graphics MAD MicReD Division

UvA 3&4
- 3:30pm - 4:00pm** **Coffee break**
- 4:00pm - 5:20pm** **Session 4: Model Order Reduction and Compact models**
Session Chair: **John Janssen**, NXP Semiconductors

UvA 3&4
- 5:20pm - 6:10pm** **P1: Poster 1**
Session Chair: **Marta Rencz**, Budapest University of Technology & Economics

UvA 3&4
- 6:10pm - 8:15pm** **Poster Viewing Session & Cocktails**
Foyer

Date: Thursday, 28/Sep/2017

- 8:30am - 9:15am** **Keynote II**
Session Chair: **Genevieve Martin**, Philips Lighting

UvA 3&4 Wilbert IJzerman, Philips Lighting Research
Development and Future Expectations of LED Lighting Systems
- 9:15am - 10:15am** **Session 5: Solid State Lighting**
Session Chair: **Thomas Zahner**, OSRAM Opto Semiconductors GmbH

UvA 3&4
- 10:15am - 10:50am** **Coffee break**
- 10:50am - 12:10pm** **Session 6: Thermal Materials**
Session Chair: **Bernhard Wunderle**, TU Chemnitz

UvA 3&4
- 12:10pm - 1:30pm** **Lunch**
- 1:30pm - 2:20pm** **P2: Poster 2**
Session Chair: **Genevieve Martin**, Philips Lighting

UvA 3&4
- 2:30pm - 3:20pm** **Poster Viewing 2 and Coffee Break**
Foyer
- 3:20pm - 4:40pm** **Session 7: Electro/Thermal**
Session Chair: **Andrzej Krzysztof Tomasz Napieralski**, Technical University of Lodz

UvA 3&4
- 4:40pm - 5:40pm** **Session 8: Reliability**
Session Chair: **Ari Glezer**, Georgia Institute of Technology

UvA 3&4
- 7:30pm - 10:30pm** **Social Event**

Date: Friday, 29/Sep/2017

8:30am - 9:15am	Keynote III Session Chair: András Poppe , Budapest University of Technology and Economics
UvA 3&4	Clemens Lasance, Principal Scientist at Philips Research 60 Years of Electronics Cooling: 1965-2025
9:15am - 9:30am	Presentation iTHERM
UvA 3&4	Chris Bailey, University of Greenwich
9:30am - 10:30am	Session 9A: Thermal Management Session Chair: Vadim Tsoi , Huawei Technologies Sweden AB
UvA 3&4	
9:30am - 10:30am	Session 9B: European Projects on Measurement Technologies Session Chair: P-Olivier Chapuis , CNRS - INSA Lyon
UvA 2	
10:30am - 11:00am	Coffee break
11:00am - 12:20pm	Session 10A: Novel Cooling /Heatpipes/Additive Manufacturing Session Chair: Wessel W. Wits , University of Twente
UvA 3&4	
11:00am - 12:20pm	Session 10B: European Projects on Modelling and Simulation Session Chair: Robin Bornoff , Mentor Graphics
UvA 2	
12:20pm - 1:20pm	Session 11A: Modelling and Simulation II Session Chair: John David Parry , Mentor Graphics
UvA 3&4	
12:20pm - 1:20pm	Session 11B: European Projects on LED Session Chair: Genevieve Martin , Philips Lighting
UvA 2	
1:20pm - 2:20pm	Lunch
2:20pm - 3:40pm	Session 12: Thermal Measurement II Session Chair: Mohamad Abo Ras , Berliner Nanotest und Design GmbH
UvA 3&4	
3:40pm - 3:50pm	Coffee break
3:50pm - 4:15pm	Award ceremony & closing remarks Session Chair: John Janssen , NXP Semiconductors
UvA 3&4	

Presentations

Session 1: Modelling and Simulation I

Time: Wednesday, 27/Sep/2017: 10:00am - 11:00am · *Location:* UvA 3&4

Session Chair: John Janssen, NXP Semiconductors

Co-Design, Modelling and Simulation Challenges: From Components to Systems

Chris Bailey¹, **John Parry**²

¹University of Greenwich, United Kingdom; ²Mentor Graphics, United Kingdom

A Multi-Objective Genetic Algorithm Optimization of Plate-Fin Heatsinks

Younis O. Abdelsalam, **Sajad Alimohammadi**, **Quentin Pelletier**, **Tim Persoons**

Trinity College, the University of Dublin, Ireland

Design of Experiments in Thermal Architecture

Wendy Luiten

WLC, The Netherlands

Session 2: Power Electronics

Time: Wednesday, 27/Sep/2017: 12:00pm - 1:00pm · *Location:* UvA 3&4

Session Chair: Thomas Harder, ECPE European Center for Power Electronics e.V.

A Simple Metal-Semiconductor Substructure for the Advanced Thermo-Mechanical Numerical Modeling of the of Power Integrated Circuits

Ioan Adrian Bojita¹, Cristian Mihai Boianceanu², Ioan Marius Purcar¹, Cosmin-Sorin Plesa¹

¹Technical University of Cluj-Napoca, Romania; ²Infineon Technologies, Romania

Thermal Characterisation of a Copper Clip Bonded IGBT Module with Double-sided Cooling

Qingwei Zhu¹, Andrew Forsyth¹, Rebecca Todd¹, Liam Mills²

¹School of Electrical and Electronic Engineering, University of Manchester; ²TT Electronics Semelab

Thermal Performance Improvement of an Air-cooled GaN-based Solid State Power Amplifier

Canberk Oztoprak^{1,2}, Eser Erkek¹

¹Aselsan A.Ş., Ankara, Turkey; ²Middle East Technical University, Ankara, Turkey

Session 3: Thermal Measurement I

Time: Wednesday, 27/Sep/2017: 2:10pm - 3:30pm · Location: UvA 3&4

Session Chair: Gabor Farkas, Mentor Graphics MAD MicReD Division

Modelling and Characterisation of a Grease Pump-Out Test Stand and its Use for Accelerated Stress Testing of Thermal Greases

Bernhard Wunderle¹, Jens Heilmann¹, Daniel May¹, Jörg Arnold¹, Josef Hirscheider¹, Jörg Bauer⁴, Ralph Schacht², Jürgen Vogel⁵, Mohamad Abo Ras³

¹TU Chemnitz, Germany; ²BTU Cottbus, Germany; ³Nanotest, Berlin, Germany; ⁴Fraunhofer IZM, Berlin, Germany; ⁵University of Applied Sciences, Zwickau, Germany

Development, Design and Fabrication of a Measurement Chip for Thermal Material Characterization Based on the 3-Omega Method

Corinna Grosse¹, Mohamad Abo Ras¹, Aapo Varpula², Kestutis Grigoras², Daniel May^{1,3}, Mika Prunnila², Bernhard Wunderle³, Séverine Gomès⁴

¹Berliner Nanotest und Design GmbH, Germany; ²VTT Technical Research Centre of Finland Ltd, Finland; ³Technische Universität Chemnitz, Germany; ⁴Université de Lyon, CNRS, INSA de Lyon, CETHIL, France.

Microelectronics Thin Films and Boundaries Characterized by Local Electro-thermal Measurements

Axel Pic^{1,2}, Sébastien Gallois-Garreignot², Vincent Fiori², P-Olivier Chapuis¹

¹CETHIL, CNRS - INSA Lyon, France; ²ST Microelectronics, Crolles, France

Effect of Forward Voltage Change Depending on Gate Voltage in Body Diode of SiC-MOSFET at Thermal Transient Testing for Analysing SiC Power Module Package

Fumiki Kato¹, Hidekazu Tanisawa^{1,2}, Kenichi Kou^{1,3}, Shinji Sato¹, Toru Aoki^{1,3}, Yoshinori Murakami^{1,4}, Hiroshi Nakagawa¹, Hiroshi Yamaguchi¹, Hiroshi Sato¹

¹National Institute of Advanced Industrial Science and Technology, Japan; ²Sanken Electric Co., Ltd; ³Calsonic Kansei Corporation; ⁴NISSAN MOTOR CO., LTD.

Session 4: Model Order Reduction and Compact models

Time: Wednesday, 27/Sep/2017: 4:00pm - 5:20pm · *Location:* UvA 3&4

Session Chair: John Janssen, NXP Semiconductors

Connecting MOR-based Boundary Condition Independent Compact Thermal Models

Lorenzo Codecasa¹, Robin Bornoff², James Dyson², Vincenzo d'Alessandro³, Alessandro Magnani³, Niccolò Rinaldi³

¹Politecnico di Milano, Italy; ²Mentor Graphics, United Kingdom; ³Università Federico II, Italy

Numerical Analysis of 3D Model Order Reduction Based on Second-Order Dual-Phase-Lag Heat Transfer Equation

Tomasz Raszkowski, Agnieszka Samson, Mariusz Zubert, Marcin Janicki, Andrzej Napieralski

Lodz University of Technology, Poland

Delphi-like Compact Thermal Models using Model Order Reduction

Brice Rogie^{1,2}, Lorenzo Codecasa³, Eric Monier-Vinard², Valentin Bissuel², Olivier Daniel², Dario D'amore³, Alessandro Magnani⁴, Vincenzo d'Alessandro⁴, Niccolò Rinaldi⁴, Najib Laraqi¹

¹Université Paris Ouest, France; ²Thales Global Services, France; ³Politecnico di Milano, Italy; ⁴University Federico II, Italy

Novel Approach for the Extraction of Nonlinear Compact Thermal Models

Lorenzo Codecasa¹, Vincenzo d'Alessandro², Alessandro Magnani², Niccolò Rinaldi²

¹Politecnico di Milano, Italy; ²Università Federico II, Italy

P1: Poster 1

Time: Wednesday, 27/Sep/2017: 5:20pm - 6:10pm · *Location:* UvA 3&4
Session Chair: Marta Rencz, Budapest University of Technology & Economics

A Study on Thermal Behaviour Prediction for Automotive Electronic Unit based on CFD

Chang-Kyu Han¹, Hun Jung²

¹LS Automotive Corp., Korea, Republic of (South Korea); ²LS Automotive Corp., Korea, Republic of (South Korea)

A Study on the Measurement of Transient Thermal Characteristics for Multi-Layered Ceramic Substrate

Shuhei Fukunaga, Tsuyoshi Funaki

Osaka University, Japan

Electrical-Thermal-Structural Performances of Packaged Power Terminals for Wafer Baking

Kyoung Joon Kim, Dae Seong Woo

Pukyong National University, Korea, Republic of (South Korea)

Hydrodynamics Behaviour Study of a DCJ System on the Thermal Cooling of Electronic Casings

Jean-Pierre Fradin, Andreas Rumpf, Claudia Cadile, Dominique Elzo

Icam, France

Cold Sprayed Boiling Enhancement Coating

Thomas L. Lupton, Rocco Lupoi, Anthony Robinson

Trinity College Dublin, Ireland

Comparison of Two Alternate Junction Temperature Setting Methods aimed for Thermal and Optical Testing of High Power LEDs

Márton C. Bein², János Hegedűs¹, Gusztáv Hantos¹, Lajos Gaál², Gábor Farkas², Márta Rencz^{1,2}, András Poppe^{1,2}

¹Mentor Graphics, Hungary; ²Budapest University of Technology and Economics, Department of Electron Devices, Hungary

Nanoscale Thermal Imaging of Active Devices by Fluorescent SThM

Hung-Ju Lin¹, Etienne Lemaire², Danick Briand², Laurent Billot¹, Patrick Gredin³, Michel Mortier³, Lionel Aigouy¹, A. Assy¹

¹ESPCI-CNRS, France; ²EPFL, Institute of Microengineering, LMTS, Switzerland; ³Chimie ParisTech, CNRS, IRCP, France

Time Constant Spectra Based Fitting of Thermal Model Parameters

Tomasz Raszkowski, Agnieszka Samson, Piotr Zajac, Tomasz Torzewicz, Artur Sobczak, Marcin Janicki, Mariusz Zubert, Andrzej Napieralski

Lodz University of Technology, Poland

An Investigation of Porous Structure Characteristics of Heat Pipes Made by Additive Manufacturing

Davoud Jafari, Wessel W. Wits, Bernard J. Geurts

University of Twente, The Netherlands

Session 5: Solid State Lighting

Time: Thursday, 28/Sep/2017: 9:15am - 10:15am · *Location:* UvA 3&4

Session Chair: Thomas Zahner, OSRAM Opto Semiconductors GmbH

Thermal Resistance and Temperature Distribution in Blue and White High-Power LED Arrays

Anton Chernyakov¹, Andrew Aladov¹, Ilja Belov², Ivan Kalashnikov¹, Alexander Zakgeim¹

¹Submicron Heterostructures for Microelectronics Research and Engineering Center of RAS, Russian Federation; ²Jönköping University, Jönköping, Sweden

Modulation Method for Measurement of Thermal Resistance of High-Power COB LEDs

Vitaliy I. Smirnov¹, Viacheslav A. Sergeev², Andrey A. Gavrikov², Anton M. Shorin²

¹Ulyanovsk State Technical University, Russian Federation; ²Institute of Radioengineering and Electronics of Russian Academy of Science, Russian Federation

Lifetime Iso-flux Control of LED based Light Sources

János Hegedüs, Gusztáv Hantos, András Poppe

BME, Hungary

Session 6: Thermal Materials

Time: Thursday, 28/Sep/2017: 10:50am - 12:10pm · Location: UvA 3&4

Session Chair: Bernhard Wunderle, TU Chemnitz

Modification of Thermal Conductivity and Phonon Dispersion Relations by Means of Phononic Crystals

Marianna Sledzinska¹, Alexandros El Sachat^{1,2}, J. Sebastian Reparaz¹, Markus R. Wagner¹, Clivia M. Sotomayor Torres^{1,3}, Francesc Alzina¹

¹Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology Campus UAB, Barcelona, Spain; ²Universitat Autònoma de Barcelona, Barcelona, Spain; ³ICREA - Institutio Catalana de Recerca i Estudis Avancats, Barcelona, Spain

Application of Amorphous Diamond Materials to Provide a Reliable, Electrically Insulating, Thermal Interface for IC Devices for Electronics Applications in Harsh Environments

Chris H Walker

Diamond Hard Surfaces Ltd, United Kingdom

Size Effects on the Thermal Conductivity of Nano Aerogels

Jose Ordonez, Younes Ezzahri, Karl Joulain

CNRS, France

Thermal Conduction in Novel Isotropic Conductive Adhesive

Helge Kristiansen^{1,2}, Keith Redford¹, Susanne Helland³, Erik Kalland³, Mohamad Abo Ras⁴, Corinna Grosse⁴, Sigurd Pettersen^{1,2}, Nina Høglund¹, Liana Ramiandrisoa⁵, Guillaume Davée⁵, Bruno Hay⁵, Séverine Gomes⁶

¹Conpart AS, Norway; ²Norwegian University of Science and Technology, Norway; ³Mosaic Solution AS, Norway; ⁴Berliner Nanotest und Design GmbH, Germany; ⁵Laboratoire National de Métrologie et d'Essais (LNE), Paris, France; ⁶National Center for Scientific Research (CNRS), Lyon, France

P2: Poster 2

Time: Thursday, 28/Sep/2017: 1:30pm - 2:20pm · *Location:* UvA 3&4
Session Chair: Genevieve Martin, Philips Lighting

Study on the Temperature-dependent Thermal Resistance Matrix of a Multi-chip LED-Module

Lisa Mitterhuber, Elke Kraker

Materials Center Leoben Forschung GmbH, Austria

Electro-Thermal Co-Design Optimisation of 3D-Stacked Silicon Based LEDs Array for General Lighting

Bertrand Chambion¹, Boris Bouillard¹, Adrien Gasse¹, Aurélie Vandeneynde¹, Nacer Ait-Mani¹, David Henry¹, Frédéric Mercier², Pamela Rueda²

¹Cea-Leti, Minatec Campus, France; ²Aledia SAS, France

The contribution has been withdrawn.

Thermal Transmission Coefficient at Si/Ge, Si/metal Interfaces and across Vacuum Gaps from First Principles Lattice Dynamics Calculations

Samy Merabia, Ali Alkurdi, Stéphane Pailhès

CNRS and Université Lyon 1, France

An Investigation of Component Interaction and Analysis of its Impact on Electro-thermal Behaviour in a Power Dense Boost Converter Topology

Mohammad Shahjalal, Hua Lu, Christopher Bailey

University of Greenwich, United Kingdom

The contribution has been withdrawn.

RC Modelling of Humidity Ingress into Electronic Enclosures

Sailil Joshy

Technical University of Denmark, Denmark

A Numerical Investigation into the Effect of Relative Humidity on Natural Convection Cooling of Electronics

Parizad Shojaee Nasirabadi^{1,2}, Jesper H. Hattel¹

¹Technical University of Denmark, Denmark; ²Georgia Institute of Technology, United States of America

Thermal Interaction of Dissipating Devices in Power Applications

Ferdinand Sluijs

NXP Semiconductors, The Netherlands

Co-Design/Simulation of Flip-Chip Assembly for High Voltage IGBT Packages

Chris Bailey

University of Greenwich, United Kingdom

Thermal Conductivity of 2D and 3D Silicon Nanowire Meshes

Maxime Verdier, David Lacroix, Konstantinos Termentzidis

LEMETA, UMR7563 CNRS and Un. of Lorraine, Vandœuvre-lès-Nancy, France

“TIMAwave” an Innovative Test Platform for Thermal Diffusivity Measurements of Solid Materials at High Temperature

Mohamad Abo Ras¹, Dan Ralf Wargulski¹, Daniel May^{1,2}, Bernhard Wunderle²

¹Berliner Nanotest und Design GmbH, Germany; ²Technische Universität Chemnitz, Germany

Session 7: Electro/Thermal

Time: Thursday, 28/Sep/2017: 3:20pm - 4:40pm · *Location:* UvA 3&4

Session Chair: Andrzej Krzysztof Tomasz Napieralski, Technical University of Lodz

Fast Electro-thermal Simulation of Large Area OLEDs in Natural Convection Environment

László Pohl, Zsolt Kohári, András Poppe

BME, Hungary

Efficient Modelling Approach for Transient Coupled Electro-Thermal Simulation on the Example of a Chip-on-Board Application

Ralph Schacht¹, Sven Rzepka²

¹Brandenburgische Technische Universität Cottbus-Senftenberg, Germany; ²Fraunhofer ENAS, Chemnitz, Germany

Adaptive Co-Simulation of Functional-Thermal Behaviour of Integrated Circuits

Lázár Jani, András Poppe

Budapest University of Technology and Economics, Hungary

Extension of Standard SPICE SiGe HBT Models in the Cryogenic Temperature Range

Konstantin O. Petrosyants^{1,2}, Oleg V. Dvornikov³, Nikolay N. Prokopenko⁴, Maxim V. Kozhukhov⁵

¹National Research University Higher School of Economics, Moscow, Russian Federation; ²Institute for Design Problems in Microelectronics of RAS, Moscow, Russian Federation; ³JSC «MNIPI», Minsk, Belarus; ⁴Don State Technical University, Rostov-On-Don, Russian Federation; ⁵JC 'VNIEM Corporation', Moscow, Russian Federation

Session 8: Reliability

Time: Thursday, 28/Sep/2017: 4:40pm - 5:40pm · *Location:* UvA 3&4

Session Chair: Ari Glezer, Georgia Institute of Technology

A New Analytical Approach to the Geometry of a Compressed Liquid Bump

Co van Veen¹, Wendy Luiten²

¹Mat-Tech B.V., DR Son, The Netherlands; ²WLC, Riethoven, The Netherlands

Failure Analysis of S-Parameter in N-MOSFET Devices after Thermal Life Tests

Mohamed Ali Belaid¹, A.M. Nahhas², M. Masmoudi³

¹LATIS-ENISo, Tunisia; ²Umm Al-Qura University, Makkah, Saudi Arabia; ³GPM-UMR CNRS, University of Rouen, France

Computer Simulation of the Reliability of Wire Bonds and Ribbon Bonds in Power Electronics Modules

Kenneth Chimezie Nwanoro, Hua Lu, Chunyan Yin, Chris Bailey

University of Greenwich, Greenwich, United Kingdom

Session 9A: Thermal Management

Time: Friday, 29/Sep/2017: 9:30am - 10:30am · *Location:* UvA 3&4

Session Chair: Vadim Tsoi, Huawei Technologies Sweden AB

Thermal Modelling to Optimize Design in Mobile Charging Applications

Ferdinand Sluijs

NXP Semiconductors, The Netherlands

Practical Thermal Control by Thermo-Electric Actuators

Rob van Gils

Royal Philips, The Netherlands

Carbon-based Patterned Heat Spreaders for Thermal Mitigation of Wire Bonding Packages

Jean-Philippe Colonna¹, **Rafael Prieto**^{1,2,3}, **Perceval Coudrain**², **Yves Hallez**², **Didier Campos**², **Olivier Le-Briz**², **Rémi Franiatte**¹, **Catherine Brunet-Manquat**¹, **Christian Chancel**¹, **Venceslass Rat**¹

¹CEA, LETI, MINATEC Campus; ²STMicroelectronics, France; ³CNRS G2Elab, Grenoble, France

Session 9B: European Projects on Measurement Technologies

Time: Friday, 29/Sep/2017: 9:30am - 10:30am · *Location:* UvA 2

Session Chair: P-Olivier Chapuis, CNRS - INSA Lyon

QUANTIHEAT Project: Main Results and Products

Séverine Gomès¹, P-Olivier Chapuis²

¹Centre d'Energétique et de Thermique de Lyon, France; ²Centre d'Energétique et de Thermique de Lyon / CNRS, Lyon, France

Quantitative Measurement using Resistive SThM Micro and Nanoprobes

Séverine Gomès, Eloïse Guen, David Renahy, Pierre-Olivier Chapuis

Univ Lyon, CNRS, INSA-Lyon, Villeurbanne, France

Scanning Thermal Microscopy: Wollaston probe/sample Heat Transfer Modeling

Patricia Ai Alam, Rakibul Islam, Dheeraj Pratap, Jaona Randrianalisoa, Nathalie Trannoy

URCA/GRESPI Reims University, France

Session 10A: Novel Cooling /Heatpipes/Additive Manufacturing

Time: Friday, 29/Sep/2017: 11:00am - 12:20pm · *Location:* UvA 3&4

Session Chair: Wessel W. Wits, University of Twente

Enhancement of Forced Convection Heat Transfer using Aeroelastically Fluttering Reeds

Thomas Crittenden, Sourabh Jha, Ari Glezer

Georgia Institute of Technology, United States of America

Experimental Spray Cooling Studies with FC-72 and FC-84 to Comprehend the Validity of Volumetric Flux Model (VFM)

Çağrı Balkcı¹, İlker Tari²

¹ASELSAN, Turkey; ²Middle East Technical University, Turkey

Novel Method for Fast FEM Simulation of Chips with Integrated Microchannel Cooling

Piotr Zajac, Andrzej Napieralski

Lodz University of Technology, Poland

An Experimental Study towards the Practical Application of Closed-loop Flat-plate Pulsating Heat Pipes

Gerben Groeneveld¹, Henk Jan van Gerner², Wessel W. Wits¹

¹University of Twente, The Netherlands; ²National Aerospace Center (NLR), The Netherlands

Session 10B: European Projects on Modelling and Simulation

Time: Friday, 29/Sep/2017: 11:00am - 12:20pm · *Location:* UvA 2

Session Chair: Robin Bornoff, Mentor Graphics

Multiscale Simulation of Heat Transport in Materials Subjected to Localized Heat Sources

Thi Thu Trang Nghiem^{1,2}, Nathalie Trannoy¹, P-Olivier Chapuis², Jaona Randrianalisoa¹

¹University of Reims Champagne-Ardenne, France; ²CETHIL, Campus La Doua – Villeurbanne, Lyon-Tech; France

Microfluidic Cell Cooling System for Electronics

Gerard Laguna¹, Hassan Azarkish², Montse Vilarrubi¹, Manel Ibañez¹, Joan Rosell¹, Yina Betancourt¹, Josep Illa¹, Louis-Michel Collin², Jérôme Barrau¹, Luc Fréchette², Perceval Coudrain³, Guillaume Savelli⁴

¹Universitat de Lleida, Spain; ²Université de Sherbrooke, Canada; ³STMicroelectronics, France; ⁴CEA - Liten, France

Dynamic Compact Thermal Model Extraction for LED Packages Using Model Order Reduction Techniques

Sangye Lungten¹, Wil H.A. Schilders¹, Joseph M.L. Maubach¹, Robin Bornoff², Matt Warner², James Dyson²

¹Eindhoven University of Technology, The Netherlands; ²Mentor, A Siemens Business, Hampton Court, UK

Low Order Compact Model Development for LED Package Thermal Investigation

Márton Németh, András Poppe

Budapest University of Technology and Economics, Hungary

Session 11A: Modelling and Simulation II

Time: Friday, 29/Sep/2017: 12:20pm - 1:20pm · *Location:* UvA 3&4

Session Chair: John David Parry, Mentor Graphics

The Scope of Applicability of DPL Model to the Heat Transfer in Integrated Circuits

Mariusz Zubert, Tomasz Raszkowski, Agnieszka Samson, Marcin Janicki, Piotr Zając

DMCS, Lodz University of Technology, Poland

Manufacturing and Characterisation of MEMS Test Nanostructures

Grzegorz Jablonski¹, Pawel Janus¹, Piotr Pietrzak¹, Tomasz Torzewicz¹, Artur Sobczak¹, Marcin Janicki¹, Andrzej Napieralski¹, Andrzej Sierakowski², Anna Brzezinska², Piotr Prokaryn²

¹Lodz University of Technology, Poland; ²Institute of Electron Technology, Warsaw, Poland

Thermal Behaviour Modeling of Enzymatic Reactions in Flow-through Microchambers

Péter Pálovics, Márta Rencz

Budapest University of Technology and Economics, Hungary

Session 11B: European Projects on LED

Time: Friday, 29/Sep/2017: 12:20pm - 1:20pm · *Location:* UvA 2

Session Chair: Genevieve Martin, Philips Lighting

Assessment of Isothermal Electro-Optical-Thermal Measurement Procedures for LEDs

Grigory A. Onushkin¹, Karel Joop Bosschaart¹, Joan Yu¹, Henk Jan van Aalderen¹, Julien Joly², Genevieve Marin¹, András Poppe³

¹Philips Lighting, The Netherlands; ²Philips Lighting, Miribel, France; ³Budapest University of Technology and Economics, Hungary

Delphi4LED: LED Measurements And Variability Analysis

Thomas Merelle¹, Alessandro Di Bucchianico², Josephine K. Sari², Dan Breton³

¹Pi lighting, Switzerland; ²Eindhoven University of Technology, The Netherlands; ³PISEO, Vénissieux, France

K-factor Calibration Issues of High Power LEDs

Gusztav Hantos, János Hegedüs

BME, Hungary

Session 12: Thermal Measurement II

Time: Friday, 29/Sep/2017: 2:20pm - 3:40pm · *Location:* UvA 3&4

Session Chair: Mohamad Abo Ras, Berliner Nanotest und Design GmbH

In-situ Transient Testing of Thermal Interface Sheets and Metal Core Boards in Power Switch Assemblies

Gabor Farkas¹, Juergen Zettner³, Zoltan Sarkany¹, Marta Rencz²

¹Mentor Graphics, Budapest, Hungary; ²Budapest University of Technology and Economics, Budapest, Hungary; ³Siemens, Nürnberg, Germany

Design and Realization of Characterization Demonstrator to Investigate Thermal Performance of Vertically-aligned Carbon Nanotubes TIM for Avionics and Aerospace applications

Mohamad Abo Ras¹, Tobias von Essen¹, Julien Fortel², Laurent Divay³, Daniel May⁴, Bernhard Wunderle⁴, Afshin Ziaei³

¹Berliner Nanotest und Design GmbH, Germany; ²Thales Microelectronics, France; ³Thales Research and Technology, France; ⁴Technische Universität Chemnitz, Chemnitz, Germany

Calibration of Transient FE Simulation: Improvement of Post-Processing and Simulation Automation

Siddharth Saparia¹, Gordon Patrick Rudolf Elger¹, E Liu¹, Thomas Zahner², Sebastian Besold², Wolfgang Kalb², Sanchit Tandon²

¹Technische Hochschule Ingolstadt, Germany; ²OSRAM Opto Semiconductors GmbH, Regensburg, Germany

Thermopower Characterization of InSb Nanowires Using Thermoreflectance

Ruben Chavez¹, Daniel Vakulov¹, Sasa Gazibegovic^{1,3}, Dustin Kendig⁴, Andrew A. O. Tay⁴, Ali Shakouri^{2,4}, Erik P. A. M. Bakkers²

¹Eindhoven University of Technology, The Netherlands; ²Birk Nanotechnology Center, Purdue University, United States of America; ³Delft University of Technology, The Netherlands; ⁴Microsanj Inc, San Jose, United States of America