

2011 IEEE 17th International Symposium for Design and Technology in Electronic Packaging

(SIITME 2011)

**Timisoara, Romania
20-23 October 2011**



**IEEE Catalog Number: CFP1170I-PRT
ISBN: 978-1-4577-1276-0**

PAPERS OVERVIEW

ORAL SESSION I.

PP. 25-27.:

VISA: INTEGRATION OF ELECTRONIC COMPONENTS IN PCB BASED TECHNOLOGY FOR AUTOMOTIVE ELECTRONICS

Thomas Hofmann, Stefan Gottschling, and Alexander Neumann

PP. 29-34.:

HARDWARE ACCELERATION FOR RAPID PROTOTYPING OF COMMUNICATION SYSTEM

Ciprian Gavrinca, Joan Bas

PP. 35-38.:

CHARACTERIZATION OF MECHANICAL AND PHYSICAL PARAMETERS OF IMCS IN SOLDER MATERIALS USING NANO HARDNESS TESTS AND EBSD MEASUREMENTS

S. Klima, J. Villain, U. Corradi, Chr. Weippert, A. Svetly

ORAL SESSION II.

PP. 39-44.:

DATA MATRIX CODE - A RELIABLE OPTICAL IDENTIFICATION OF MICROELECTRONIC COMPONENTS

Ion-Cosmin Dita, Marius Ottesteanu, Franz Quint

PP. 45-48.:

INTEROPERABILITY SOLUTION BETWEEN PEER – TO – PEER AND CLIENT – SERVER BASED MAILING SYSTEMS

Patrik Emanuel Mezö, Mircea Vladutiu, Lucian Prodan

PP. 49-54.:

TIN WHISKER GROWTH FROM SN-CU (0-5 WT%) SURFACE FINISHES

Balázs Illés, Barbara Horváth, Tadashi Shinohara, Gábor Harsányi

PP. 55-58.:

OPTIMIZING LASER SOLDERING OF SMD COMPONENTS: FROM THEORY TO PRACTICE

Radu Bunea, Paul Svasta, Zsolt Illyefalvi-Vitez, Reka Batorfi, Attila Geczy

ORAL SESSION III.

PP. 59-62.:

RESISTANCE AND NON-LINEARITY OF ELECTRICALLY CONDUCTIVE ADHESIVES AGED BY THERMAL, HUMIDITY AND COMBINED AGING

Seba Barto, Pavel Mach

PP. 63-68.:

ACCELERATED AGEING TESTS FOR PREDICTING CAPACITOR LIFETIMES

Rajmond Jánó, Dan Pitică

PP. 69-72.:

CURRENT DEMANDS ON ELECTRONIC CONTROL UNITS IN POWERTRAIN APPLICATION

Cristian Satmarel, Reiner Kohl, and Bernhard Schuch

ORAL SESISON IV.

PP. 73-76.:

THERMAL ANALYSIS AND EXPERIMENTAL VALIDATION ON COOLING EFFICIENCY OF THIN FILM TRANSISTOR LIQUID CRYSTAL DISPLAY (TFT-LCD) PANELS

Ismail Tavman, Alpaslan Turgut, Murat Iz

PP. 77-80.:

PRE-LAYOUT POWER INTEGRITY ANALYSIS IN THE DESIGN FLOW OF A PCB

Raul Fizesan, Dan Pitică

PP. 81-84.:

ITERATIVE DESIGN OF FREQUENCY SYNTHESIZERS USING CPPSIM AND MATLAB

Anamaria Oros, Istvan Kovacs, Marius Neag

POSTER SESSION

TOPIC A – EMERGING TECHNOLOGIES & TRENDS IN ADVANCED PACKAGING

PP. 85-88.:

ORGANIC CAPACITIVE STRUCTURES USING BIOPOLYMERS

Andreea Bonea, Ileana Rău, Alexandrina Țane, Andreea Brodeală, Paul Svasta

PP. 89-92.:

ANALYTIC PARAMETER EXTRACTION FOR ORGANIC TRANSISTORS WITH TIPS-PENTACENE

Iulian Bușu, Andreea Bonea, Paul Svasta, Detlef Bonfert

PP. N/A

ANALYSIS OF HEATSINK PERFORMANCE USING NANOFLUIDS FOR SEMICONDUCTOR DIODE LASER

E. Farsad, S. P. Abbasi, M. S. Zabihi, J. Sabbaghzadeh

PP. 99-102.:

MODIFICATION OF INTERFACIAL PROPERTIES BETWEEN FILLER PARTICLES IN ELECTRICALLY CONDUCTIVE ADHESIVES

Pavel Mach, David Busek

PP. 103-106.:

CONDUCTIVE MECHANISMS IN ELECTRICAL CONDUCTIVE ADHESIVES WITH ISOTROPICAL ELECTRICAL CONDUCTIVITY

Pavel Mach, Jakub Cinert

PP. 107-110.:

MODELING OF THERMAL VIA HEAT TRANSFER PERFORMANCE FOR POWER ELECTRONICS COOLING

Catalin Negrea, Paul Svasta

PP. 111-115.:

DESIGN OF ANTI BURGLAR ALARM SYSTEMS DETECTION AND SIGNALING

Paul Schiopu, Aurelian Costea

TOPIC B – POWER ELECTRONICS AND MICROSYSTEMS PACKAGING

PP. 117-120.:

CPE INVESTIGATION OF GOLD THIN FILMS

Attila Bonyár, Gábor Harsányi

PP. 121-124.:

START SOFT STOP FOR CONTROLLING A REVERSIBLE ELECTRIC MOTOR USED IN AUTOMOTIVE

B. Mihailescu, A. Vasile, P. Svasta and A. Brodeala

PP. 125-128.:

ELECTRICAL BEHAVIOUR OF A POWER UNIT AT THE LIMITS OF THE NOMINAL RANGE

A.Tulbure, E.Ceuca and I.Ileana

TOPIC C – ASSEMBLY AND MANUFACTURING TECHNOLOGY

PP. 129-132.:

ON AUTOMATED ULTRASONIC MEASUREMENT SYSTEM

Silviu Epure, Radu Belea, Dorel Aiordachioaie, Razvan Solea

PP. 133-136.:

ON PINNAE DESIGN AND FABRICATION TECHNOLOGY

Silviu Epure and Dorel Aiordachioaie

PP. 137-140.:

DEFECT ANALYSIS OF ULTRASONIC AL WIRE BONDS ON NI-PLATED PACKAGE LEADS

Reka Batorfi, Zsolt Illyefálvi-Vitez

PP. 141-144.:

STORAGE AND USAGE SYSTEM OF ELECTROSTATIC ENERGY WITH EDCL

Andreea Brodeală, Alexandru Vasile, Paul Svasta, Bogdan Mihailescu

PP. 145-148.:

INTEGRATED MONITORING SYSTEM FOR TRACKING GREEN ENERGY PRODUCTION

Emilian Ceuca, Adrian Tulbure, Simona Plesa

PP. 149-152.:

SOLDERING PROFILE OPTIMIZATION FOR VAPOUR PHASE REFLOW TECHNOLOGY

Attila Géczy, Péter Szőke, Zsolt Illyefalvi-Vitéz and Miklós Ruzinkó

PP. 153-158.:

OPTIMIZATION OF BREAKING PROCESSES IN LTCC MANUFACTURING

Eszter Horváth, András Erényi, Attila Géczy, and Gábor Harsányi

PP. 159-162.:

INVESTIGATING THE EFFECT OF NITROGEN ATMOSPHERE ON LEAD-FREE SOLDER WETTING ANGLE

Olivér Krammer, László Puskás

PP. 163-168.:

SOLDER JOINTS PROPERTIES ASSESSMENT IN THE TERMS OF 4P SOLDERING MODEL

Ioan Plotog, Traian Cucu, Bogdan Mihailescu, Paul Svasta, Mihai Branzei, Mihai Tarcolea, Florin Miculescu

PP. 169-172.:

DEVELOPMENT OF SAW FILTERS BASED ON GaPO_4

P. Schiopu, I. Cristea, N. Grosu, A. Craciun

TOPIC D – ELECTRICAL DESIGN, SIMULATION & MODELING

PP. 173-178.:

IMPROVING PERFORMANCE AND AREA OVERHEAD BY REDUCING THE SWITCHING TABLE FOR SELF ADAPTIVE CACHE MEMORIES

Liviu Agnola, Mircea Vlăduțiu, Mihai Udrescu, Lucian Prodan

PP. 179-182.:

ELECTRONIC COMPONENTS IDENTIFIED BY COMPUTER VISION USING MOBILE DEVICES

Bogdan Anton, Paul Svasta

PP. 183-186.:

HOME AUTOMATION SYSTEMS, NEW IMPROVEMENTS ON DESIGN AND SOFTWARE SOLUTION

Adrian Avram, Ismet Porobic, Dragos Misca

PP. 187-191.:

MEASUREMENT PLATFORM FOR ATMOSPHERIC PRESSURE SENSORS

I. Bosznai, G. Harsányi

PP. 193-196.:

THE HARDWARE COMPONENT OF THE TECHNOLOGY USED TO COMMUNICATE WITH PEOPLE WITH MAJOR NEURO-LOCOMOTOR DISABILITY USING OCULAR ELECTROMYOGRAM

Radu Gabriel Bozomitu, C. Barabăsa, Vlad Cehan, Robert Gabriel Lupu

PP. 197-200.:

ABOUT THE NEGATIVE PERMITTIVITY OF SOME METAMATERIAL COMPOSITES - SIMULATIONAL STUDY

Daniela Ionescu, Maria Kovaci

PP. 201-206.:

SIMULATION DETERMINATION OF THE NEGATIVE PERMEABILITY FOR THE METAMATERIALS BASED ON $\text{Sr}(\text{ZnTi})\text{Fe}_{10}\text{O}_{19}$ HEXAFERRITE

Daniela Ionescu, Ion Bogdan, Maria Kovaci

PP. 207-210.:

A NEW MODEL FOR SIMULATING ELECTROCHEMICAL SENSORS ARRAY

David Cristea, Mihai-Emanuel Basch, Zoltán Haraszy, Róbert István Lőrincz, Virgil Tiponut

PP. 211-216.:

STATISTICAL INFORMATION OF CROSSTALK ON PARALLEL BUS

Mihai Daraban, Dan Pitica

PP. 217-220.:

DESIGNING LOW COST EMBEDDED SYSTEMS WITH ETHERNET CONNECTIVITY

Andrei Drumea, Paul Svasta

PP. 221-226.:

DESIGN AND IMPLEMENTATION OF ELECTRONIC BALLAST FOR FLUORESCENT LAMPS

C. Fărcaș, I. Ciocan, and N. Palaghiță

PP. 227-230.:

A PETRI NET APPROACH TO MULTICELLULAR CHOPPER CONTROL

Bogdan Cristian Florea, Dan Alexandru Stoichescu

PP. 231-234.:

PROGRAMMABLE LOG-DOMAIN LOW PASS FILTER

Robert Groza and Marius Neag

PP. 235-240.:

SIMULATION OF PRINTED THERMOELECTRIC GENERATORS USING FINITE ELEMENT ANALYSIS

C. Ionescu, P. Svasta, D. Bonfert

PP. 241-244.:

IMPLEMENTATION OF A CONDITIONING CIRCUIT FOR RADIATION DETECTORS

Ioan Lita, Daniel Alexandru Visan

PP. 245-248.:

COMMUNICATION CONTROL SYSTEM IMPLEMENTED IN FPGA

Claudiu Lung, Sebastian Sabou, Ioan Orha

PP. 249-252.:

SIMULATION OF A WIRELESS SENSOR NETWORK USING OPNET

C. Marghescu, M. Pantazica, A. Brodeala and P. Svasta

PP. 253-256.:

COMPARATIVE ANALYSIS OF TWO VERSIONS OF THE MILLER OA BASED ON A SYSTEMATIC DESIGN METHOD

Istvan Kovacs, Anamaria Oros , Marius Neag

PP. 257-260.:

PERFORMANCE COMPARISON OF THE BPSK AND QPSK MODULATION TECHNIQUES ON FPGA

S. Popescu, A. Gontean

PP. 261-264.:

ESTIMATION OF PARASITIC ELEMENTS OF MULTILAYER CERAMIC CAPACITORS

Bogdan Urs, Marius Rangu

PP. 265-268.:

PCB DESIGN CONSIDERATIONS FOR WIRELESS DATA LOGGER USED FOR THERMAL VALIDATION SYSTEM

L. Viman, C.M. Vancea

PP. 269-272.:

MULTIPOINT WIRELESS MEASUREMENT SYSTEM WITH LABVIEW INTERFACE

Daniel Alexandru Visan, Ioan Lita

TOPIC E – OPTOELECTRONICS & ADVANCED COMMUNICATION PACKAGING

PP. 273-276.:

HIGH RESOLUTION VIDEO ACQUISITION AND TRANSMISSION SYSTEM, USING DSP

Paul Schiopu, Bogdan Apetrechioaie, Luminita Mateescu

PP. 277-282.:

ENERGY EFFICIENT ROUTING PROTOCOLS FOR WIRELESS SENSOR NETWORKS: A SURVEY

Cosmin Cirstea

PP. 283-286.:

INFLUENCE OF QUANTIZATION ERRORS ON THE DEVELOPMENT OF VECTOR MODULATOR BASED PHASESHIFTER FOR USE IN SMART ANTENNA APPLICATIONS

Octavian Manu, Mihai Dimian, Adrian Graur

PP. 287-290.:

EVALUATION OF SOME NODE LOCALIZATION ALGORITHMS

Ruxandra-Ioana Rusnac, Aurel Gontean

PP. 291-294.:

MICROWAVE ANTI-COLLISION SYSTEM

Maria Claudia Surugiu, Ionel Petrescu, Lacramioara Nemtoi, Elena Maghiari

PP. 295-298.:

WIRELESS DATA LOGGER FOR THERMAL VALIDATION SYSTEMS

C.M. Vancea, L. Viman

PP. 299-304.:

A CURRENT-DRIVEN RFID READER WITH AUTOMATIC ANTENNA TUNING

Dan Tudor Vuza, Reinhold Frosch, Helmut Koeberl, Marian Vlădescu

TOPIC F – APPLIED RELIABILITY

PP. 305-308.:

INFLUENCE OF THERMAL AGING ON THE RELIABILITY OF ELECTRICALLY CONDUCTIVE ADHESIVES

Seba Barto, Jakub Cinert, Pavel Mach

PP. 309-312.:

LIFETIME PREDICTION FOR COMPONENTS WITH SCARCE DATA: THE “WORST CASE” APPROACH

M. Băzu, L. Gălăţeanu, V.E. Iliaş and D. Vârşescu

PP. 313-318.:

ELECTRICAL STRESS ON THIN FILM TAN RESISTIVE STRUCTURES

Detlef Bonfert, Horst Gieser, Karlheinz Bock, Paul Svasta, Ciprian Ionescu

PP. 319-322.:

MEASURING THICKNESS BASED ON THE GRAYSCALE VALUE OF C-MODE SAM IMAGES

Endre Harkai, Péter Gordon

PP. 323-325.:

A DIGITAL APPROACH TO NONLINEARITY MEASUREMENT OF VOLTAGE RAMP

Edward Hryniewicz

PP. 327-331.:

CHARACTERIZATION OF MICROSTRUCTURE OF LEAD FREE SOLDER BY DIFFERENT IMAGE PROCESSING ALGORITHMS

Tamás Hurtony, Bálint Sinkovics, Péter Gordon

PP. 333-338.:

HDR BASED STEGANOGRAPHIC ALGORITHM

Septimiu Fabian Mare, Mircea Vladutiu and Lucian Prodan

PP. 339-344.:

SECRET DATA COMMUNICATION SYSTEM USING STEGANOGRAPHY, AES AND RSA

Septimiu Fabian Mare, Mircea Vladutiu and Lucian Prodan

PP. 345-348.:

INVESTIGATING SIR OF CU, OSP, ISN AND HASL SURFACE FINISHES BY THB TEST

Bálint Medgyes, Balázs Illés

PP. 349-354.:

DISTRIBUTED MAILING SYSTEM

Patrik Emanuel Mezö, Mircea Vladutiu, Lucian Prodan

PP. N/A.:

AES ENCRYPTION-DECRYPTION OPTIMIZED DATAPATH

Flavius Opritoiu, Mircea Vladutiu, Lucian Prodan, and Mihai Udrescu

PP. N/A.:

FAULT SIMULATION FRAMEWORK FOR GATE-LEVEL AND TRANSISTOR-LEVEL DEFECTS

Flavius Opritoiu, Mircea Vladutiu, Mihai Udrescu, and Lucian Prodan

TOPIC G – CHALLENGE IN GLOBAL EDUCATION

PP. 365-368.:

KEY-WORD DATA BASE USED IN COMMUNICATION SYSTEM WITH DISABLED PEOPLE

Dana Anca Cehan, Robert Lupu, Vlad Cehan, Radu Gabriel Bozomitu

PP. 369-372.:

AN INTEGRATED E-LEARNING PLATFORM FOR USE IN HIGHER EDUCATION

Bogdan Cristian Florea, Madalin Frunzete

PP. 373-378.:

SMART EDUCATION - A NEW APPROACH FOR BEGINNERS IN ELECTRONICS

Todor Vlad, Dan Pitică, Lucian Man