

2009 International Semiconductor Conference

(CAS 2009)

**Sinaia, Romania
12 – 14 October 2009**

**Volume 1
Pages 1 - 344**



IEEE Catalog Number: CFP09CAS-PRT
ISBN: 978-1-4244-4414-4

CONTENTS

PLENARY SESSION 1

INVITED PAPER	<i>SOI-A PLATFORM FOR TRANSITION FROM MICRO TO NANO,</i> F. Balestra , Sinano Inst., IMEP-Minatec, Grenoble, France	3
----------------------	---	---

PLENARY SESSION 2

INVITED PAPER	<i>DIAMOND SCHOTTKY STRUCTURES,</i> M. Brezeanu , Electrical Engineering Division, Univ. of Cambridge, UK	15
INVITED PAPER	<i>SURFACE ACOUSTIC WAVE DEVICES AND THEIR SENSING CAPABILITIES,</i> V. Avramescu, C. Bostan, B. Serban, I. Georgescu, S. Costea, N. Varachiu, C. Cobianu , Sensors and Wireless Laboratory, Honeywell, Bucharest, Romania	27
INVITED PAPER	<i>DEVICES BASED ON SEMICONDUCTOR NANOWIRES,</i> D. Ert's¹, R. Meija¹, P. Birjukovs¹, J. Andzane¹, M. Studers¹, R. Löhmus², J.D. Holmes³, ¹ Univ. of Latvia, Riga, Latvia, ² Tartu Univ. Estonia, ³ Ireland National Univ. of Cork, Ireland	37

PLENARY SESSION 3

INVITED PAPER	<i>SPECIAL EFFECTS IN TRIPLE GATE MOSFETs FABRICATED ON SILICON-ON-INSULATOR (SOI),</i> Y. Bae¹, K-I Na^{2,3}, S. Cristoloveanu², W. Xiong⁴, C.R. Cleavelin⁴, J-H. Lee³, ¹ Uiduk Univ., Gyeongju, South Korea, ² IMEP, Grenoble Polytechnic Inst., France, ³ Kyungpook National Univ., Daegu, South Korea, ⁴ Texas Instruments, USA	51
INVITED PAPER	<i>CHARACTERIZATION, MODELLING AND SIMULATION OF SUB-45NM SOI DEVICES,</i> N. Rodriguez, F. Gámiz, S. Cristoloveanu* , Departamento de Electrónica y Tecnología de Computadores, Granada, Spain, *Inst. de Microelectrónica, Electromagnetisme et Photonique IMEP-LAHC-MINATEC, Grenoble, France	57
INVITED PAPER	<i>IGCTs: HIGH-POWER TECHNOLOGY FOR POWER ELECTRONICS APPLICATIONS,</i> I. Nistor, T. Wikström*, M. Scheinert , ABB Switzerland Ltd, Corporate Research, Dättwil, Switzerland, *ABB Switzerland Ltd, Semiconductors, Lenzburg, Switzerland	65

Session N3: NANOSCIENCE & NANOTECHNOLOGY 3*Oral presentations*

N3.1	<i>CdSe QUANTUM DOTS – CALIX[4]CROWN-5 NANOASSEMBLY FOR ION SENSING, M.F. Frasco, N.A. Chaniotakis, Univ. of Crete, Heraklion, Greece</i>	77
N3.2	<i>NEW LIGAND SELECTION RULE FOR QUANTUM DOT FUNCTIONALIZATION, B. Serban, M. Mihaila, S. Costea, O. Buiu, Honeywell, Bucharest, Romania</i>	81
N3.3	<i>A MODULAR APPROACH FOR THE SIMULATION OF A PARAMETER DEPENDENT SWCNT INTERCONNECT, B. De Vivo, P. Lamberti, G. Spinelli, V. Tucci, Univ. of Salerno, Fisciano, Italy</i>	85
N3.4	<i>THE OPTIMIZATION OF OLIGONUCLEOTIDE CONJUGATION ONTO GOLD NANOPARTICLES FOR BIODETECTION, R. Buiculescu, M. Comor*, N.A. Chaniotakis, Univ. of Crete, Greece, *Vinca Inst. of Nuclear Sciences, Belgrade, Serbia</i>	89
N3.5	<i>HIGH MECHANICAL STRESS APPLIED TO FD-SOI TRANSISTORS USING ULTRA-THIN SILICON MEMBRANES, B. Bercu, L. Montes, F. Rochette, M. Mouis, X. Xin, P. Morfouli, Univ. de Savoie, Grenoble, France</i>	93

Session N2: NANOSCIENCE & NANOTECHNOLOGY 2*Oral presentations*

INVITED PAPER	<i>THE APPLICATIONS OF CARBON NANOSTRUCTURES AND SEMICONDUCTOR MATERIALS IN THE DEVELOPMENT OF BIOSENSORS, M.F. Frasco, R. Buiculescu, V. Vamvakaki, N.A. Chaniotakis, Department of Chemistry, Univ. of Crete, Heraklion, Crete, Greece</i>	99
INVITED PAPER	<i>TOXICOLOGICAL AND BIOLOGICAL IN VITRO AND IN VIVO EFFECTS OF CARBON NANOTUBES BUCKYPAPER, S. Bellucci, INFN-Laboratori Nazionali di Frascati, Rome, Italy</i>	107

N2.1	<i>NANOLAB FABRICATION FOR NANO-ELECTRONICS AND SENSORS, D. Demarchi, P. Civera, G. Piccinini, Politecnico di Torino, Italy</i>	117
N2.2	<i>INVESTIGATION OF ELECTRICAL PROPERTIES OF CARBON NANOTUBES, M.L. Ciurea¹, I. Stavarache¹, A.-M. Lepadatu¹, V. Iancu², M. Dragoman³, G. Konstantinidis⁴, R. Buiculescu⁵, ¹INCD-FM, Bucharest, ²“Politehnica” Univ. of Bucharest, ³IMT-Bucharest, Romania, ⁴FORTH-IESL-MRG Heraklion, Crete, ⁵Univ. of Crete, Heraklion, Greece</i>	121

Session N1: NANOSCIENCE & NANOTECHNOLOGY 1**Poster presentations**

- N1.1 *SIMULATIONS OF SOME ELECTRO-MECHANICAL PHENOMENA AT NANO-CELLULAR LEVEL*, C. Ravariu, F. Ravariu*, “Politehnica” Univ. of Bucharest, *IMT-Bucharest, Romania 127
- N1.2 *SYNTHESIS OF GERMANIUM NITRIDE NANOWIRES*, D. Jishiashvili, N. Makhatadze*, Z. Shiolashvili*, V. Gobronidze, A. Jishiashvili*, Georgian Technical Univ., *Inst. of Cybernetics, Tbilisi, Georgia 131
- N1.3 *SELF ASSEMBLED MONOLAYER OF ETHANETHIOL ON GOLD SURFACES BY QUARTZ CRYSTAL MICROBALANCE*, Gh.V. Cimpoca, I.D. Dulama, C. Radulescu, I. Bancuta, M. Cimpoca*, I. Cernica*, V. Schiopu*, M. Danila*, R. Gavrila*, “Valahia” Univ. of Targoviste, *IMT-Bucharest, Romania 135
- N1.4 *MODELLING OF THE LOW-FREQUENCY SOLVENT DIELECTRIC PERMITTIVITY IN NANOCHANNELS IN THE ELECTRICAL DOUBLE LAYER LENGTH RANGE*, A. Ioanid, A.S. Dafinei, Univ. of Bucharest, Romania 139
- N1.5 *STUDY OF SURFACTANT BONDING TO LEAD TELLURIDE NANOPARTICLES*, A. Todosiciuc, A. Nicorici, L. Braginsky*, T. Gutsul, V. Shklover*, Inst. of Electronic Eng. and Ind. Technologies AS, Chisinau, Moldova, *ETH Zurich, Switzerland 143
- N1.6 *LASER SCANNING CALIBRATION FOR POROUS SILICON SUBSTRATE USEFUL IN MICROARRAY APPLICATIONS*, M. Simion¹, I. Kleps¹, L. Ruta², L. Lazar^{1,2}, A. Bragaru¹, M. Miu¹, I. Baciu¹, ¹IMT-Bucharest, ²Univ. of Bucharest, Romania 147
- N1.7 *NANOSTRUCTURED MICROCARRIERS BASED ON SILICON FOR DRUG DELIVERY*, I. Kleps, A. Bragaru, T. Ignat, M. Miu, M. Simion, F. Craciunoiu, M. Danila, E. Tirifon*, R. Anghel*, A. Popovici*, S. Cinca*, IMT-Bucharest, *Inst. of Oncology, Bucharest, Romania 151
- N1.8 *ON MANIPULATION AND DETECTION OF BIOMOLECULES USING MAGNETIC CARRIERS*, M. Volmer, M. Avram*, A.M. Avram*, Transilvania Univ., Brasov, *IMT-Bucharest, Romania 155
- N1.9 *POLYELECTROLYTES MULTILAYERS MEMBRANES FOR DIFFERENT FUNCTIONALITIES*, A. Bragaru, M. Miu, M. Simion, T. Ignat, I. Kleps, V. Schiopu, M. Purica, F. Craciunoiu, IMT-Bucharest, Romania 159
- N1.10 *ELECTROCHEMICAL PROCESSES AND CHARACTERISATION OF DOPED TiO₂ THIN FILMS; RELATIONSHIP BETWEEN PREPARATION CONDITIONS AND NANOSTRUCTURE*, E. Manea, L. Staicu, A. Popescu, A.C. Obreja, A. Dinescu, V. Schiopu, M. Purica, IMT-Bucharest, Romania 163
- N1.11 *CHARACTERIZATION OF MAGNETIC NANOPARTICLES FUNCTIONALIZED WITH ALBUMIN FOR BIOLOGICAL APPLICATIONS*, L. Draghiciu, L. Eftime, R. Muller, M. Popescu, A. Herghelegiu, V. Schiopu, M. Danila, IMT-Bucharest, Romania 167
- N1.12 *MAGNETIC TUNNEL JUNCTIONS WITH IMPROVED TMR RESPONSE AND THERMAL STABILITY*, M. Urse, H. Chiriac, M. Grigoras, F. Borza, National Inst. of R & D for Technical Physics, Iasi, Romania 171

Session O: MICROPHTONICS
Poster presentations

O.1	<i>THE FABRICATION AND PHYSICS OF CADMIUM-TELLURIDE THIN-FILM SOLAR CELLS, T. Potlog, N. Spalatu, Moldova State Univ., Chisinau, Moldova</i>	177
O.2	<i>DESIGN OF AN OPTICAL SWITCH BASED ON ELECTROSTATIC ACTUATION OF A MOVABLE FIBER, M. Kusko, R. Voicu, C. Tibeica, IMT-Bucharest, Romania</i>	181
O.3	<i>BEAM SHAPING WITH ANISOTROPIC PERIODIC STRUCTURES, O. Rasoga, D. Dragoman*, INCD-FM, Bucharest, *Univ. of Bucharest, Romania</i>	185
O.4	<i>NEGATIVE REFRACTION EFFECT IN TWO-DIMENSIONAL PHOTONIC CRYSTALS, O. Mita, C.G. Bostan, P. Schiopu, "Politehnica" Univ. of Bucharest, Romania</i>	189
O.5	<i>PROCESS DEVELOPMENT FOR MICRO – NANO PATTERNING OF METALLIC LAYERS WITH APPLICATIONS IN PHOTONICS, R. Rebigan, A. Dinescu, C. Kusko, F. Comanescu, D. Cristea, IMT-Bucharest, Romania</i>	193
O.6	<i>SNOM MEASUREMENTS ON METALIC NANOSTRUCTURES, C. Kusko, A. Dinescu, R. Rebigan, M. Kusko, D. Cristea, IMT-Bucharest, Romania</i>	197

Session MT1: MICROSYSTEM TECHNOLOGY 1
Oral presentations

INVITED PAPER	<i>TRANSDERMAL DRUG DELIVERY: MICROFABRICATION INSIGHTS, C. Iliescu, B. Chen, J. Wei, Z. Yue, Institute of Bioengineering and Nanotechnology, Singapore</i>	203
MT1.1	<i>CAPACITIVE MEMS ENERGY HARVESTERS FOR STRUCTURAL MONITORING: DESIGN AND FABRICATION, G. De Pasquale, M. Wei*, A. Soma, J. Wang*, Politecnico di Torino, Italy, *Univ. of South Florida, Tampa, USA</i>	211
MT1.2	<i>WAFER BONDING WITH METAL LAYERS FOR MEMS APPLICATIONS, V. Dragoi, E. Cakmak*, E. Pabo*, EV Group, St. Florian/Inn, Austria, *EV Group Inc., Tempe, AZ, USA</i>	215
MT1.3	<i>ELECTRET BASED CAPACITIVE MEMS VIBRATION-TO-ELECTRIC ENERGY HARVESTING, R. Mialtu, M. Sararouiu, Infineon Technologies Romania, Bucharest, Romania</i>	219
MT1.4	<i>INTEGRATED MICRO HEAT SINK BASED ON MICROCHANNELS MICROFABRICATED ONTO SILICON, A. Coraci, E. Iancu, I.M. Stanca, C. Parvulescu, O. Corici*, IMT-Bucharest, *Oilfield Schlumberger, Bucharest, Romania</i>	223
MT1.5	<i>REALISATION OF MICROFLUIDIC COMPONENTS USING THE CASTING REPLICATION METHOD, I. Stanciu, P. Obreja, L. Eftime, D. Cristea, R. Muller, D. Dascalu, IMT-Bucharest, Romania</i>	227

Session MT2: MICROSYSTEM TECHNOLOGY 2
Poster presentations

MT2.1	<i>ABOUT USING COMBINED STRESSES FOR RELIABILITY TESTING OF MICROSYSTEMS, M. Bazu, L. Galateanu, V. Ilian, IMT-Bucharest, Romania</i>	233
MT2.2	<i>SILICON CANTILEVER BEAM MICRO-MACHINING AND STRUCTURE GEOMETRY CHARACTERIZATION, G. Ionascu, E. Manea*, C.D. Comeaga, N. Alexandrescu, I. Cernica*, L. Bogatu, "Politehnica" Univ. of Bucharest, *IMT-Bucharest, Romania</i>	237
MT2.3	<i>RELIABLE ELECTRICAL INTERCONNECTION FOR FLUIDIC GLASS BIO-CHIP TO MACRO WORLD, N. Dumbravescu, IMT-Bucharest, Romania</i>	241
MT2.4	<i>PHOTORESIST FILMS PATTERNING AT 355nm, V. Damian, I. Apostol, R. Muller*, L. Eftime*, INFLPR, Bucharest, *IMT-Bucharest, Romania</i>	245
MT2.5	<i>CHARACTERIZATION OF DEFECTS GENERATED DURING REACTIVE ION ETCHING, M. Avram, A. Avram, M. Purica, A.M. Popescu, C. Voitincu, IMT-Bucharest, Romania</i>	249
MT2.6	<i>REACTIVE ION ETCHING FOR PATTERNING HIGH ASPECT RATIO AND NANOSCALE FEATURES, M. Avram, A. Avram, F. Comanescu, A.M. Popescu, C. Voitincu, IMT-Bucharest, Romania</i>	253

Session Ms2: MICROSENSORS 2
Oral presentations

Ms2.1	<i>NANO-SCALE RESONANT SENSORS FOR GAS AND BIO DETECTION: EXPECTATIONS AND CHALLENGES, C. Cobianu¹, B. Serban¹, M. Mihaila¹, V. Dumitru¹, F.A. Hassani², Y. Tsuchiya², H. Mizuta², V. Cherman³, I. De Wolf³, V. Petrescu⁴, J. Santana⁴, C. Dupre⁵, E. Ollier⁵, T. Ernst⁵, P. Andreucci⁵, L. Duraffourg⁵, D. Tsamados⁶, A.M. Ionescu⁶, ¹Honeywell, Bucharest, Romania, ²Univ. of Southampton, UK, ³IMEC-REMO-MSR, Leuven, Belgium, ⁴IMEC-Holst Centre, Eindhoven, The Nederland, ⁵CEA LETI, MINATEC, Grenoble, France, ⁶EPFL, Lausanne, Switzerland</i>	259
Ms2.2	<i>SENSOR SYSTEM FOR ON-LINE MONITORING OF CELL CULTURES, C. Moldovan¹, R. Iosub¹, R. Cornel¹, E. Moore², A. Paschero², W. Messina², D. Demarchi³, C. Codreanu¹, D. Necula¹, N. Codreanu¹, A. Dinescu¹, B. Firtat¹, ¹IMT-Bucharest, Romania, ²Tyndall National Inst., Cork, Ireland, ³Politecnico di Torino, Italy</i>	263
Ms2.3	<i>DETECTION OF CHEMICAL WARFARE AGENTS USING SURFACE ACOUSTIC WAVE SENSORS WITH DIFFERENT POLYMER COATINGS, C. Viespe, C. Grigoriu, C. Toader*, N. Grigoriu*, INFLPR, Bucharest, *Scientific Research Centre for NBC Defence and Ecology, Bucharest, Romania</i>	267
Ms2.4	<i>BURRIED HOT WIRE ANEMOMETER FOR FLUID VELOCITY MEASUREMENTS, A. Avram, L.Y. Cheong*, IMT-Bucharest, Romania, *Nanyang Technological Univ., Singapore</i>	271

- Ms2.5** *MICROSENSOR ON SINGLE ZnO MICROWIRE*, G. Chai¹, E. Rusu², L. Chow^{1,3}, G.I. Stratan², H. Heinrich^{1,3}, S. Park¹, A. Schulte¹, O. Lupon^{1,4}, V. Trofim⁴, S. Railean⁵, ¹Dep. of Physics, Univ. of Central Florida, USA., ²Inst. of Electronic Eng. and Ind. Tech., Chisinau, Moldova, ³Adv. Mat. Processing and Analysis Center, and Depart. of Mechanical, Materials, and Aerospace Eng., Univ. of Central Florida, Orlando, USA., ⁴Technical Univ. of Moldova, ⁵Inst. of Electronic Engineering and Industrial Technologies, Chisinau, Moldova 275

Session Ms1: MICROSENSORS 1
Poster presentations

- Ms1.1** *DESIGN AND TECHNOLOGICAL CHARACTERIZATION ASPECTS OF A GLUCO-DETECTOR BIOFET*, C. Ravariu, C. Podaru*, E. Manea*, “Politehnica” Univ. of Bucharest, *IMT-Bucharest, Romania 281
- Ms1.2** *POLYSULFONE-FUNCTIONALIZED MULTI-WALLED CARBON NANOTUBES COMPOSITE MEMBRANES FOR POTENTIAL SENSING APPLICATIONS*, C. Trisca-Rusu^{1,2}, A.C. Nechifor¹, S. Mihai³, C. Parvu¹, S.I. Voicu¹, G. Nechifor¹, ¹“Politehnica” Univ. of Bucharest, ²IMT-Bucharest, Romania, ³Inst. Europeen des Membranes, Montpellier, France 285
- Ms1.3** *WIDE DYNAMIC RANGE CMOS ACTIVE PIXEL SENSOR WITH SENSITIVITY CONTROL GATE*, E. Chang, Y. Chae, J. Cheon, G. Han, Yonsei Univ., Korea 289
- Ms1.4** *NEURAL NETWORK FOR THE MODELING OF NO_x MICROSENSOR WITH SENSING ELEMENT CARDO POLYSULFONE*, G. Telipan¹, S. Curteanu², V. Cozan³, ¹ICPE CA, Bucharest, ²Technical Univ. “Gh. Asachi”, Iasi, ³“Petru Poni” Inst. of Macromolecular Chemistry, Iasi, Romania 293
- Ms1.5** *CELL SORTING IN A DIELECTROPHORETIC DEVICE WITH ASIMETRIC ELECTRODES*, C. Iliescu, G. Tresset*, G. Xu, Inst. of Bioengineering and Nanotechnology, Singapore, *CNRS, Univ. Paris-Sud, Orsay, France 297

Session M1: MICROWAVE MEMS & ICs
Oral presentations

- M1.1** *RF MEMS BASED IMPEDANCE MATCHING NETWORKS FOR TUNABLE MULTI-BAND MICROWAVE LOW NOISE AMPLIFIERS*, R. Malmqvist^{1,3}, P. Rantakari², C. Samuelsson¹, M. Lahti², S. Cheng³, J. Saijets², T. Vah-Haikila², A. Rydberg³, J. Varis³, ¹FOI Swedish Defence Research Agency, Linkoping, Sweden, ²VTT Technical Research Centre of Finland, Espoo, Finland, ³Uppsala Univ., Uppsala, Sweden 303
- M1.2** *A VHDL-AMS MODEL OF RF MEMS CAPACITIVE SHUNT SWITCHES*, M. Kraemer^{1,2}, D. Dragomirescu^{1,2}, V. Puyal^{1,2}, R. Plana^{1,2}, ¹LAAS-CNRS, Toulouse, ²Univ. of Toulouse, France 307
- M1.3** *DESIGN FLOW FOR A SiGe BiCMOS BASED POWER AMPLIFIER*, M. Bozanic, S. Sinha, M. du Plessis, A. Muller*, Univ. of Pretoria, South Africa, *IMT-Bucharest, Romania 311

M1.4	<i>LIMITATIONS OF A LC-LADDER AND CAPACITIVE FEEDBACK LNA AND SCALING TO mm-WAVE FREQUENCIES, M. Weststrate, S. Sinha, D. Neculoiu*, Univ. of Pretoria, South Africa, *IMT-Bucharest, Romania</i>	315
M1.5	<i>GHz FBAR AND SAW RESONATORS MANUFACTURED ON GaN/Si, A. Muller, D. Neculoiu, G. Konstantinidis*, D. Vasilache, A. Dinescu, A. Stavrinidis*, G. Deligiorgis*, M. Danila, K. Tzagaraki*, A. Cismaru, C. Buiculescu, I. Petri, A.A. Muller, D. Dascalescu, IMT-Bucharest, Romania, *FORTH-IESL-MRG Heraklion, Crete, Greece</i>	319
M1.6	<i>NEW TOPOLOGIES FOR PLANAR MICROWAVE BAND-PASS FILTERS WITH STRONGLY ASYMMETRIC CHARACTERISTICS, G. Lojewski, N. Militaru, M.G. Banciu*, “Politehnica” Univ. of Bucharest, *INCD-FM, Bucharest, Romania</i>	323

Session M2: ADVANCED MICROWAVE DEVICES & CIRCUITS

Oral presentations

M2.1	<i>TUNING FERRITE SUPPORTED ANTENNA WITH CRLH CELLS, G. Sajin, S. Simion, F. Craciunoiu, A.A. Muller, A.C. Bunea, IMT-Bucharest, Romania</i>	329
M2.2	<i>DC AND MICROWAVE RESPONSE OF A ONE-ATOM-THICK GRAPHENE FLAKE, M. Dragoman¹, D. Dragoman², G. Deligiorgis³, G. Konstantinidis³, D. Neculoiu¹, A. Cismaru¹, R. Plana⁴, ¹IMT-Bucharest, ²Univ. of Bucharest, Romania, ³FORTH-IESL-MRG Heraklion, Crete, Greece, ⁴LAAS-CNRS, Toulouse, France</i>	333
M2.3	<i>ELECTROMAGNETIC ANALYSIS OF THE EXPERIMENTAL SETUP USED TO INVESTIGATE THE RATCHET EFFECT IN TWO-DIMENSIONAL ELECTRON SYSTEM UNDER MICROWAVE RADIATION, A. Takacs^{1,2}, D. Medhat¹, H. Aubert¹, J.C. Portal^{1,3,4}, ¹LAAS-CNRS, Toulouse, France, ²Military Technical Academy, Bucharest, Romania, ³LNCMI-CNRS, Toulouse, ⁴INSA Inst. Univ. de France, Toulouse, France</i>	337
M2.4	<i>ELECTROMAGNETIC MODELLING AND DESIGN OF 77 GHz ANTENNAS IN LTCC TECHNOLOGY, D. Neculoiu^{1,2}, S.I. Ene², A.A. Muller¹, C. Buiculescu¹, ¹IMT-Bucharest, ²“Politehnica” Univ. of Bucharest, Romania</i>	341
M2.5	<i>SECOND HARMONIC GENERATION ON NON-LINEAR COMPOSITE RIGHT-/LEFT-HANDED TRANSMISSION LINE, S. Simion^{1,2}, G. Bartolucci³, R. Marcelli⁴, ¹IMT-Bucharest, ²Military Technical Academy, Bucharest, Romania, ³Univ. “Tor Vergata”, Rome, ⁴CNR Inst. for Microelectronics and Microsystems, Rome, Italy</i>	345

Session AM: ADVANCED MATERIALS FOR MICRO & NANO SCALE

Poster presentations

AM.1	<i>THIN POLYIMIDE FILMS FOR DIELECTRIC INTERLAYER APPLICATION, M.-D. Damaceanu, R.-D. Rusu, M. Bruma, A. Muller*, “Petru Poni” Inst. of Macromolecular Chemistry, Iasi, *IMT-Bucharest, Romania</i>	351
AM.2	<i>STUDY OF POLYIMIDES CONTAINING FLEXIBLE GROUPS, I. Bacosca, E. Hameciuc, M. Bruma, I.A. Ronova*, L.N. Nikitin*, “Petru Poni” Inst. of Macromolecular Chemistry, Iasi, Romania, *Nesmeyanov Inst. of Organoelement Compounds, Moscow, Russia</i>	355

AM.3	<i>COMPARED PROPERTIES OF AZOPOLYI-MIDES, I. Sava, A. Burescu, M. Bruma, A.-M. Resmerita*, G. Lisa*, N. Hurdue*, “Petru Poni” Inst. of Macromolecular Chemistry, **“Gh. Asachi” Technical Univ. Iasi, Romania</i>	359
AM.4	<i>ABSORPTION AND PHOTOLUMINESCENCE OF $Ga_{0.017} Ge_{0.25} As_{0.083} S_{0.65}$ GLASSES DOPED WITH Pr^{3+}, Sm^{3+} AND Ho^{3+}, M.S. Iovu, E.V. Lupan, V.I. Ciornea, Inst. of Applied Physics, Chisinau, Moldova</i>	363
AM.5	<i>POLY(ETHER-IMIDE) THIN FILMS WITH/WITHOUT FLUORINE IN THE STRUCTURE, E. Hamciuc, C. Hamciuc, I. Bacosca, M. Cazacu, “Petru Poni” Inst. of Macromolecular Chemistry, Iasi, Romania</i>	367
AM.6	<i>DIELECTRIC RELAXATION IN $As_{10} Se_{90}$ AMORPHOUS FILM NEAR THE GLASS TRANSITION TEMPERATURE, M.S. Iovu, I.A. Vasiliev, O.I. Shpotyuk*, Inst. of Applied Physics, Chisinau, Moldova, *Scientific Research Comp. “Carat”, Lviv, Ukraine</i>	371
AM.7	<i>TRAP SPACE CHARGE LIMITED CURRENT IN PULSED LASER DEPOSITED $AlN:Cr$ FILMS, S. Simeonov¹, I. Minkov^{1,3}, A. Szekeres¹, S. Grigorescu², G. Socol², C. Ristoscu², I.N. Mihailescu², ¹Inst. of Solid State Physics, Sofia, Bulgaria, ²INFLPR, Bucharest, Romania, ³Technical Univ., Sofia, Bulgaria</i>	375
AM.8	<i>DEFECT PRODUCTION IN SILICON AND GERMANIUM BY LOW TEMPERATURE IRRADIATION, S. Lazanu, I. Lazanu*, A. Lepadatu, I. Stavarache, INCD-FM, Bucharest, *Univ. of Bucharest, Romania</i>	379
AM.9	<i>FIRST PRINCIPLES STUDY OF THE ELECTRONIC STRUCTURE OF $Al/Ti:ZnO$ CRYSTAL, R. Plugaru¹, N. Plugaru^{2,3}, ¹IMT-Bucharest, ²Univ. de Zaragoza, Spain, ³INCD-FM, Bucharest, Romania</i>	383

Session D: RF & POWER DEVICES

Oral presentations

D.1	<i>A SIMPLE APPROACH FOR DMOS TRANSISTOR MODELING UP TO VERY HIGH TEMPERATURES, M. Pfost, D. Costachescu, A. Podgaynaya*, M. Stecher*, Infineon Technologies Romania, Bucharest, Romania, *Infineon Technologies AG, Neubiberg, Germany</i>	389
D.2	<i>ADVANCED CARRIER DENSITY ENHANCEMENT TECHNOLOGIES IN INSULATED GATE BIPOLAR TRANSISTORS, W. Chih-Wei Hsu, F. Udrea, H.-T. Chen*, W.-C. Lin*, Univ. of Cambridge, UK, *ANPEC Electronics Corp., Taiwan</i>	393
D.3	<i>CMOS RF ACTIVE INDUCTOR WITH IMPROVED TUNING CAPABILITY, C. Andriesel^{1,2}, L. Goras^{1,3}, F. Temcamani², B. Delacressoniere², ¹“Gheorghe Asachi” Technical Univ., Iasi, Romania, ²ECIME/ETIS Lab., ENSEA, Cergy, France, ³Inst. of Computer Science, Iasi, Romania</i>	397
D.4	<i>FIVE CURRENT STEPS TOPOLOGY FOR GATE CHARGING TO IMPROVE EMC BEHAVIOR, L. Creosteanu, A. Danchiv, G. Brezeanu*, Infineon Technologies Romania, Bucharest, *“Politehnica” Univ. of Bucharest, Romania</i>	401

D.5	<i>SPICE EMULATOR FOR BREAKDOWN MODE OPERATION OF THE GATE-CONTROLLED DIODE, A. Rusu, D. Dobrescu, Alex. Rusu, D. Cozma,</i> “Politehnica” Univ. of Bucharest, Romania	405
D.6	<i>LIMITATIONS OF THE OPEN-CIRCUIT VOLTAGE DECAY TECHNIQUE APPLIED TO 4H-SiC DIODES, S. Bellone, L.F. Albanese, G.D. Licciardo,</i> Univ. of Salerno, Fisciano, Italy	409
D.7	<i>EFFECTS OF PROCESS VARIATIONS ON THE CURRENT IN SCHOTTKY BARRIER SOURCE-GATED TRANSISTORS, R.A. Sporea¹, X. Guo^{1,2}, J.M. Shannon¹, S.R.P. Silva¹,</i> ¹ Univ. of Surrey, Guildford, UK, ² Jiao Tong Univ., Shanghai, China	413
D.8	<i>DESIGN CONSIDERATIONS FOR IMPROVED ELECTRO MAGNETIC COMPATIBILITY (EMC) BEHAVIOUR IN HIGH SIDE SWITCHES DESIGN, D. Dinu, B. Auer*</i> , Infineon Technologies Romania, Bucharest, Romania, *Infineon Technologies Austria, Villach, Austria	417

Session IC&D: ICs & DEVICES: CHARACTERIZATION & APPLICATIONS

Poster presentations

IC&D.1	<i>AN ACCURATE METHOD FOR MEASURING VERY LOW FREQUENCY BIOSIGNALS, F. Draghici, I. Rusu, G. Brezeanu, B. Bucur*</i> , “Politehnica” Univ. of Bucharest, *INCDSB Bucharest, Romania	423
IC&D.2	<i>HIGH ACCURACY CMOS MULTIFUNCTIONAL STRUCTURE FOR ANALOG SIGNAL PROCESSING, C. Popa,</i> “Politehnica” Univ. of Bucharest, Romania	427
IC&D.3	<i>FPGA IMPLEMENTATION OF A DIGITAL FRONT END BLOCK FOR A MULTI-CARRIER MULTI-ANTENNA SYSTEM, V. Mocanu, C. Anghel, A.A. Enescu,</i> “Politehnica” Univ. of Bucharest, Romania	431
IC&D.4	<i>POWER-DRIVEN MAPPING K-LUT-BASED FPGA CIRCUITS, I. Bucur, N. Cupcea, C. Stefanescu, A. Surpateanu,</i> “Politehnica” Univ. of Bucharest, Romania	435
IC&D.5	<i>CMOS LNA WITH TUNABLE RESONANCE FREQUENCY, F. Agavrioloie, S. Spiridon, C. Dan, M. Bodea,</i> “Politehnica” Univ. of Bucharest, Romania	439
IC&D.6	<i>DESIGN OPTIMIZATION OF RF MEMS SP4T AND SP6T SWITCH, S.C. Roy, K.J. Rangra,</i> Central Electronics Eng. Research Inst., Rajasthan, India	443
IC&D.7	<i>CHARACTERISATION OF DIELECTRIC LTCC TAPES USING THE CAPACITANCE METHOD, N. Blaz, G. Radosavljevic, Lj. Zivanov, W. Smetana*</i> , Univ. of Novi Sad, Serbia, *Vienna Univ. of Technology, Austria	447
IC&D.8	<i>BULK AND EDGE (SURFACE) LEAKAGE REVERSE CURRENT IN pn JUNCTIONS FROM COMMERCIAL SEMICONDUCTOR DEVICES, V.V.N. Obreja, A.C. Obreja,</i> IMT–Bucharest, Romania	451
IC&D.9	<i>ASPECTS OF TEMPERATURE DEPENDENCE ON Au-Ti/GaAs(SI) SCHOTTKY BARRIER, C.C. Negrila, F. Ungureanu, R.V. Ghita,</i> INCDFM, Bucharest, Romania	455

IC&D.10 <i>A SIMPLE APPROACH FOR MODELLING AND SIMULATION MONOLITHIC INDUCTORS, A. Maric, G. Radosavljevic, Lj. Zivanov, G. Stojanovic, Univ. of Novi Sad, Serbia</i>	459
IC&D.11 <i>STUDY OF THE TEMPERATURE DEPENDENCE OF THE DARK CURRENTS NON-UNIFORMITY FOR SOME VIDEO-CAMERA CHIPS, R. Widenhorn, E. Bodegom, D.-A. Iordache*, V. Iancu*, Portland State Univ., USA, *“Politehnica” Univ. of Bucharest, Romania</i>	463

Session IC1: HIGH SPEED ANALOG ICs
Oral presentations

IC1.1 <i>A 2.8-V POWER SUPPLY CMOS HIGH BAND LNA FOR UMTS, R.A. Cojan, Infineon Technologies Romania, Bucharest, Romania</i>	469
IC1.2 <i>0.5A FAST CMOS LDO, C. Stanescu, R. Iacob*, C. Dinca, C. Caracas, O. Profirescu, ON Semiconductor Romania SRL, Bucharest, Romania, *ON Semiconductor, Santa Clara, USA</i>	473
IC1.3 <i>CAPACITOR FREE 100KHz 50mA DMOS VOLTAGE REGULATOR, C. Ionascu, Infineon Technologies Romania, Bucharest, Romania</i>	477
IC1.4 <i>A LOW SWITCHING TIME TRANSMITTER FOR HIGH SPEED ADAPTIVE PRE-EMPHASIS SERIAL LINKS, M. Goosen, S. Sinha, M. du Plessis, A. Muller*, Univ. of Pretoria, South Africa, *IMT-Bucharest, Romania</i>	481
IC1.5 <i>DESIGN OPTIMIZATIONS IN HIGH ACCURACY RELAXATION OSCILLATORS, M. Sararoiu, R. Mialtu, M. Mazilu, Infineon Technologies Romania, Bucharest, Romania</i>	485

Session IC2: ICs FOR DATA CONCERTERS
Oral presentations

IC2.1 <i>CHARGE INJECTION INDUCED SAMPLE AND HOLD ERROR ANALYSIS, A. Danchiv, M. Bodea*, A.-M. Luca, I.-A. Tranca, Infineon Technologies Romania, Bucharest, *“Politehnica” Univ. of Bucharest, Romania</i>	491
IC2.2 <i>MIXED SIGNAL TEMPERATURE CONTROL CIRCUIT FOR ON-CHIP CMOS GAS SENSOR, V. Garofalo, P.K. Guha*, S.Z. Ali*, S. Santra*, M.F. Chowdhury*, E. Napoli, F. Udrea*, Univ. of Naples Federico II, Italy, *Univ. of Cambridge, UK ..</i>	495
IC2.3 <i>LOG-DOMAIN CMOS IMPLEMENTATION OF A CLASS OF ANALOG PARALLEL ARCHITECTURES, L. Goras^{1,2}, I. Vornicu¹, ¹“Gh. Asachi” Technical Univ., ²Inst. of Computer Science, Iasi, Romania</i>	499
IC2.4 <i>A SIMPLE ALGORITHM FOR APPROXIMATING THE TRANSFER FUNCTION OF ANALOG INTEGRATED CIRCUITS AND SYSTEMS, A.M. Manolescu, A. Manolescu, T. Niculiu, “Politehnica” Univ. of Bucharest, Romania</i>	503

IC2.5 <i>LOW POWER DISCONTINUOUS-TIME COMPARATOR, V. Chesaru, C. Neacsu, C. Dan*, M. Bodea*</i> , O2Micro, Bucharest, *”Politehnica” Univ. of Bucharest, Romania	507
IC2.6 <i>EXPERIMENTAL INVESTIGATION OF CURRENT INJECTION INTO THE SUBSTRATE FOR SMART POWER INTEGRATED CIRCUITS, D. Dinu, M. Pfost</i> , Infineon Technologies Romania, Bucharest, Romania	511

Session S: STUDENT PAPERS
Oral presentations

S.1 <i>A STUDY OF POLARIZATION EFFECTS IN METAL - FERROELECTRIC - OXIDE - SEMICONDUCTOR CAPACITORS, Alex. Rusu, G. Salvatore, A.M. Ionescu</i> , EPFL, Lausanne, Switzerland	517
S.2 <i>STRUCTURAL HEALTH MONITORING USING AN ARRAY OF SPATIALLY DISTRIBUTED SENSORS, A. Vasilievici, S. Costea</i> , Honeywell, Bucharest, Romania	521
S.3 <i>EXTREME ENVIRONMENT TEMPERATURE SENSOR BASED ON SILICON CARBIDE SCHOTTKY DIODE, I. Josan^{1,2}, C. Boianceanu¹, G. Brezeanu¹, V. Obreja³, M. Avram³, D. Puscasu⁴, A. Ioncea⁵</i> , ¹ “Politehnica” Univ. of Bucharest, Romania, ² EPFL, Lausanne, Switzerland, ³ IMT-Bucharest, ⁴ CEPROCIM SA, Bucharest, ⁵ METAV CD, Bucharest, Romania	525
S.4 <i>SWITCHED CAPACITOR HYSTERESIS-IMPLEMENTATION FOR A PROGRAMABLE OSCILLATOR, A. Negut^{1,2}, M. Apostolescu², A. Manolescu¹</i> , “Politehnica” Univ. of Bucharest, ² ON Semiconductor Romania, Bucharest, Romania	529
S.5 <i>SELF TEST SYSTEM FOR INTEGRATED HALL EFFECT SENSORS, M.-A. Ionescu^{1,2}, C. Bodner², S. Dineci², G. Brezeanu¹</i> , ¹ “Politehnica” Univ. of Bucharest, ² Infineon Technologies Romania, Bucharest, Romania	533
S.6 <i>POLARIZATION CONTROL OF METAMATERIAL BEHAVIOR, I. Ionita, D. Dragoman</i> , Univ. of Bucharest, Romania	537
S.7 <i>DIGITAL FUSE CIRCUIT BASED ON FLOATING GATE TECHNOLOGY IN A STANDARD CMOS PROCESS, M. Craciun^{1,2}, D. Bogdan²</i> , ¹ ON Semiconductor, Bucharest, ² “Politehnica” Univ. of Bucharest, Romania	541
S.8 <i>OPTIMIZATION ISSUES REGARDING MICROCANILEVER DESIGN AND FABRICATION, M. Ion, C. Moldovan, R. Iosub, C. Brasoveanu</i> , IMT-Bucharest, Romania	545
S.9 <i>TECHNOLOGY OF A NANOWIRE BIOFET DEVICE FOR BIOMOLECULES DETECTION, Cl. Moldovan, A. Dinescu*, E. Manea*, R. Iosub*, C. Brasoveanu*, B. Firtat*, C. Moldovan*, M. Ion*, A. Manolescu</i> , “Politehnica” Univ. of Bucharest, *IMT-Bucharest, Romania	549

S.10	THE ELECTROPHYSIOLOGICAL SIGNALS RECORDING, N. Golescu, G. Ciachir, F. Babarada, J. Arhip* , "Politehnica" Univ. of Bucharest, *S.C. Seletron Software and Automations SRL, Bucharest, Romania	553
S.11	POLYSULFONE-POLYPYRROLE IONIC CONDUCTIVE COMPOSITE MEMBRANES SYNTHESIZED BY PHASE INVERSION WITH CHEMICAL REACTION, C. Muscalu, R. David, S.A. Garea, A.C. Nechifor, D.I. Vaireanu, S.I. Voicu, G. Nechifor , "Politehnica" Univ. of Bucharest, Romania	557
S.12	SUSPENDED GATE FIELD EFFECT TRANSISTOR BASED POWER MANAGEMENT - A 32-BIT ADDER CASE STUDY, M. Enachescu, A. Van Genderen, S. Cotofana , Delft Univ. of Technology, The Netherlands	561