



**3<sup>rd</sup> International Conference on Micro-Nanoelectronics, Nanotechnology & MEMs**  
**NCSR Demokritos, Athens, 18 – 21 November 2007, [www.micro-nano.gr/conf2007](http://www.micro-nano.gr/conf2007)**

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## ORAL PROGRAMME

### SUNDAY, NOVEMBER 18, 2007

18<sup>00</sup> – 21<sup>00</sup>

#### Reception – Social programme

*Registration*

*Award ceremony and award plaque to Prof. G. Kamarinos, Director of Research CNRS, France, Director of LPCS/CNRS 1978 - '93, in recognition of his contribution to the first steps of Microelectronics in Greece*

*Light dinner*

### MONDAY, NOVEMBER 19, 2007

#### Session 1: Devices

**Session Chairs: A. G. Nassiopoulou, G. Kamarinos**

09<sup>00</sup> – 09<sup>30</sup>

#### Welcome

09<sup>30</sup> – 10<sup>00</sup>

#### Si Nanoelectronic Devices – I1

**Wei-Xin Ni (Invited speaker)**

*Director General, National Nano Device Lab., Chair Professor, TSMC/NCTU, Taiwan*

10<sup>00</sup> – 10<sup>30</sup>

#### Micro and Nano on Insulator – I2

**S. Cristoloveanu (Invited speaker)**

*IMEP - INP Grenoble MINATEC, France*

10<sup>30</sup> – 10<sup>45</sup>

Electrical characterization of InAs-nanocrystal-based nonvolatile memories - MN178

**M. Hocevar, P. Regreny, M. Gendry, A. Souifi**

*Institut des Nanotechnologies de Lyon-INL, UMR-CNRS-5270, INSA de Lyon, 7 avenue Jean Capelle, 69621 Villeurbanne Cedex, France*

**10<sup>45</sup> – 11<sup>00</sup>**      Semi-analytical modelling of short channel effects in sub-50 nm Si symmetrical gate-all-around MOSFETs – [MN27](#)  
**A. Tsormpatzoglou<sup>1</sup>, C. A. Dimitriadis<sup>1</sup>, R. Clerc<sup>2</sup>, Q. Rafhay<sup>2</sup>, G. Pananakakis<sup>2</sup>, G. Ghibaudo<sup>2</sup>**  
*<sup>1</sup>Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, <sup>2</sup>IMEP, MINATEC, Parvis Louis Néel, 38054 Grenoble Cedex 9, France*

**11<sup>00</sup> – 11<sup>30</sup>**      **Coffee Break**

## **Session 2: Light emitting materials and devices**

### **Session Chairs: A. Georgakilas, Ph. Komninou**

**11<sup>30</sup> – 12<sup>00</sup>**      Growth of III-Nitride quantum dots and their applications to blue-green LEDs – [I3](#)  
**T. D. Moustakas (Invited speaker)**  
*Boston University, Boston, USA*

**12<sup>00</sup> – 12<sup>15</sup>**      GaN epitaxy on  $\gamma$ -LiAlO<sub>2</sub>(100) substrates – [MN149](#)  
**A. Mogilatenko<sup>1</sup>, W. Neumann<sup>1</sup>, E. Richter<sup>2</sup>, M. Weyers<sup>2</sup>, B. Velickov<sup>3</sup>, R. Uecker<sup>3</sup>**  
*<sup>1</sup>Instit. für Physik, Humboldt-Universität zu Berlin, Newtonstr. 15, 12489 Berlin, Germany, <sup>2</sup>Ferdinand-Braun-Institut für Höchstfrequenztechnik, Gustav-Kirchhoff-Str. 4, 12489 Berlin, Germany, <sup>3</sup>Instit. für Kristallzüchtung, Max-Born-Str. 2, 12489 Berlin, Germany*

**12<sup>15</sup> – 12<sup>30</sup>**      Single dot spectroscopy on InAs/GaAs piezoelectric quantum dots – [MN129](#)  
**G. E. Dialynas<sup>1</sup>, C. Xenogianni<sup>1,2</sup>, S. Tsintzos<sup>1,2</sup>, P. G. Savvidis<sup>1,2</sup>, G. Constantinidis<sup>1</sup>, Z. Hatzopoulos<sup>1,3</sup>, N. T. Pelekanos<sup>1,2,\*</sup>**  
*<sup>1</sup>Microelectronics Research Group, IESL/FORTH, P.O.Box 1527, 71110 Heraklion Crete, Greece, <sup>2</sup>Materials Science and Technology Department, University of Crete, P.O.Box 2208, 71003, Heraklion, Crete, Greece, <sup>3</sup>Physics Department, University of Crete, P.O.Box 2208, 71003 Heraklion, Crete, Greece*

**12<sup>30</sup> – 12<sup>45</sup>**      Nanoscale Structure of GaN Nanowires Grown on Various Substrates – [MN63](#)  
**Th. Kehagias<sup>1,\*</sup>, Ph. Komninou<sup>1</sup>, G.P. Dimitrakopoulos<sup>1</sup>, C. Chèze<sup>2</sup>, L. Geelhaar<sup>2</sup>, H. Riechert<sup>2</sup>, H. Kirmse<sup>3</sup>, W. Neumann<sup>3</sup>, and Th. Karakostas<sup>1</sup>**  
*<sup>1</sup>Physics Department, Aristotle University of Thessaloniki, GR-54124, Greece, <sup>2</sup>Qimonda, D-81730 Munich, and NaMLab, D-01099 Dresden, Germany, <sup>3</sup>Humboldt-Universität zu Berlin, Institut für Physik, AG Kristallographie, Newtonstraße 15, D-12489, Germany*

**12<sup>45</sup> – 14<sup>30</sup>**      **Lunch Break**

## Session 3: Micro and Nano fabrication I

### Session Chairs: J. Ahopelto, A. Tserepi

- 14<sup>30</sup> – 15<sup>00</sup>**      Nanoimprint lithography and self-assembly as prospective technologies for heterogeneous integration – **I4**  
**Clivia M. Sotomayor Torres (Invited speaker)**  
*Tyndall National Institute, Univ. College Cork, Ireland*
- 15<sup>00</sup> – 15<sup>15</sup>**      Nanopatterning the Si Surface Through Porous Anodic Alumina Masking Layers - **MN172**  
**F. Zacharatos, V. Gianneta and A. G. Nassiopoulou**  
*IMEL/NCSR Demokritos, Athens, Greece*
- 15<sup>15</sup> – 15<sup>30</sup>**      Three-dimensional quasi-regular Ni nanostructure-array in a porous silicon membrane correlated with magnetic characteristics – **MN92**  
**P. Granitzer<sup>1</sup>, K. Rumpf<sup>1</sup>, P. Pölt<sup>2</sup>, S. Šimić<sup>2</sup>, H. Krenn<sup>1</sup>**  
*<sup>1</sup>Institute of Physics, Karl Franzens University Graz, Universitaetsplatz 5, 8010 Graz, Austria, <sup>2</sup>Institute for Electron Microscopy, University of Technology Graz, Steyrergasse 17, 8010 Graz, Austria*
- 15<sup>30</sup> – 15<sup>45</sup>**      Selective Photochemical Etching of GaN Films Following Laser Lift-off – **MN174**  
**Trichas Emmanouil<sup>1,2</sup>, Xenogianni Christina<sup>1,2</sup>, Kayambaki Maria<sup>2</sup>, Iliopoulos Eleftherios<sup>2</sup>, Savvidis Pavlos<sup>1,2</sup>, Pelekanos Nikos<sup>1,2</sup>**  
*<sup>1</sup>Department of Materials Science & Technology, University of Crete, Heraklion 71110, Crete, Greece, <sup>2</sup>Microelectronics Research Group, FORTH/IESL, Physics dept. Building, Heraklion 71110, Crete, Greece*
- 15<sup>45</sup> – 16<sup>00</sup>**      Growth and characterization of In<sub>x</sub>Al<sub>1-x</sub>N/GaN heterostructures, throughout the whole composition range, by plasma-assisted MBE – **MN82**  
**A. Adikimenakis\*, E. Iliopoulos, G. Tsiakatouras, K. Tsagaraki, A. Georgakilas**  
*Microelectronics Research Group (MRG), Instit. of Electronic Structure and Laser (IESL), Foundation for Research and Technology-Hellas (FORTH) and Physics depart., Univ. of Crete, Heraklion, Greece*
- 16<sup>00</sup> – 16<sup>30</sup>**      **Coffee Break**

## Session 4: Sensors and MEMs

### Session Chairs: R. Plana, D. Tsoukalas

- 16<sup>30</sup> – 17<sup>00</sup>**      RF MEMS: Status and perspectives – **I5**  
**R. Plana (Invited speaker)**  
*LAAS-CNRS and Toulouse University, 7 avenue du colonel roche, 31077 Toulouse, cedex04*
- 17<sup>00</sup> – 17<sup>15</sup>**      A Chemocapacitive sensor array system for detection of complex odors – **MN140**  
**S. Dimopoulos, M. Kitsara, D. Goustouridis, I. Raptis, S. Chatzandroulis**  
*NCSR "Demokritos", Institute of Microelectronics, Athens, GREECE*

- 17<sup>15</sup> – 17<sup>30</sup>** MEMS Composite Porous Silicon/Polysilicon Cantilevers for Biosensing Applications– [MN119](#)  
**S. Stolyarova<sup>1</sup>, R.E. Fernandez<sup>2</sup>, A. Chadha<sup>3</sup>, E. Bhattacharya<sup>2</sup> and Y. Nemirovsky**  
<sup>1</sup>*Solid State Instit., Technion-Israel Instit. of Technol., Haifa, 32000, Israel,* <sup>2</sup>*Depart. of Electrical Engineering,* <sup>3</sup>*Depart. of Biotechnology, Indian Inst.e of Technol. Madras, Chennai 600036, India*
- 17<sup>30</sup> – 17<sup>45</sup>** Fuel cell electrodes on the basis of porous silicon – [MN152](#)  
**V. V. Starkov**  
*Institute of Technol. and High Purity Materials, RAS, Chernogolovka, Russia*
- 17<sup>45</sup> – 18<sup>00</sup>** System integration via development of chip embedding technologies in rigid and flex printed circuit boards – [MN95](#)  
**D. Manassis<sup>1</sup>, A. Ostmann<sup>1</sup>, T. Loeher<sup>2</sup>, and H. Reichl<sup>1</sup>**  
<sup>1</sup>*Fraunhofer Institute for Reliability and Microintegration (IZM),* <sup>2</sup>*Microperipheric Research Center, Technical University of Berlin (TUB), Gustav-Meyer-Allee 25, 13355 Berlin, Germany*
- 18<sup>00</sup> – 18<sup>15</sup>** A wireless sensor network for building structural health monitoring and seismic detection – [MN116](#)  
**P. Katsikogiannis<sup>1</sup>, E. Zervas<sup>1</sup>, G. Kaltsas<sup>1</sup>**  
*Depart. of Electronics, TEI of Athens, Aegaleo, GREECE*

**18<sup>15</sup> – 21<sup>00</sup>**

## **POSTER SESSION 1**

### **Materials fabrication and characterization**

**TUESDAY, NOVEMBER 20, 2007**

## **Session 5: Micro and Nano fabrication II**

**Session Chairs: C. Sotomayor Torres, H. Contopanagos**

- 09<sup>00</sup> – 09<sup>30</sup>** High-resolution 3D nanomanufacturing with ultrashort laser pulses – [I6](#)  
**Boris N. Chichkov (Invited speaker)**  
*Nanotechnology Department, Laser Zentrum Hannover e V (LZH), Germany*
- 09<sup>30</sup> – 10<sup>00</sup>** More than Moore by VLSI N(M)EMS on CMOS – [I7](#)  
**P. Vettiger (Invited speaker)**  
*Science & Technology Department, IBM Zurich Research Laboratory, Rueschlikon, Switzerland*
- 10<sup>00</sup> – 10<sup>15</sup>** Three-dimensional photonic crystals containing a nonlinear optical chromophore – [MN91](#)  
**M. Farsari<sup>1\*</sup>, A. Ovsianikov<sup>2</sup>, M. Vamvakaki<sup>1</sup>, B.N. Chichkov<sup>1,2</sup>, C. Fotakis<sup>1</sup>**  
<sup>1</sup>*Institute of Electronic Structure and Laser (I.E.S.L.), Foundation for Research and Technology-Hellas (FO.R.T.H.), Vassilika Vouton, GR-*

711 10 Heraklion, Crete, Greece, <sup>2</sup>Laser Zentrum Hannover e.V., Hollerithallee 8, D-30419 Hannover, Germany

10<sup>15</sup> – 10<sup>30</sup>

Novel Photonic Media Based on Nanostructured Semiconductors and Dielectrics – [MN127](#)

**Pavel K. Kashkarov, Leonid A Golovan<sup>1</sup>, Stanislav V. Zobotnov, Dmitri A. Mamichev, Victor Yu. Timoshenko**

*Moscow State M. V. Lomonosov University, Physics Department, Moscow, Russia*

10<sup>30</sup> – 10<sup>45</sup>

Random Laser Action in ZnO Nanohybrids – [MN113](#)

**Andreas Stassinopoulos<sup>1,2</sup>, Evangelos D. Tsagarakis<sup>3</sup>, Rabindra N. Das<sup>3</sup>, Spiros H. Anastasiadis<sup>1,4</sup>, Emmanuel P. Giannelis<sup>3</sup>, Dimitris G. Papazoglou<sup>5</sup>, Demetrios Anglos<sup>1</sup>**

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10<sup>45</sup> – 11<sup>00</sup>

Fabrication of micron-scale GaN-based devices via AlInN selective oxidation and etching – [MN78](#)

**A. Castiglia, D. Simeonov, H. J. Buehlmann, J. Dorsaz, A. Altoukhov, J.-F. Carlin, E. Feltin, R. Butté, and N. Grandjean**  
*Ecole Polytechnique Fédérale de Lausanne (EPFL), Institute of Quantum Electronics and Photonics, Lausanne, Switzerland*

11<sup>00</sup> – 11<sup>30</sup>

**Coffee Break**

## Session 6: Nanostructures and Applications

**Session Chairs: P. Kelires, N. Papanikolaou**

11<sup>30</sup> – 12<sup>00</sup>

The Electrical Transport Mechanisms in Ensembles of Silicon Quantum Dots – [I8](#)

**I. Balberg (Invited speaker)**

*The Racah Institute of Physics, The Hebrew University, Jerusalem 91904, Israel*

12<sup>00</sup> – 12<sup>15</sup>

Micro and nano – scale silicon : potential applications in toothpaste – [MN24](#)

**L. Canham**

*pSiNutria Ltd, Malvern Hills Science Park, Geraldine Rd, Malvern, Worcestershire, UK*

12<sup>15</sup> – 12<sup>30</sup>

Silicon nanocrystals as efficient photosensitizers of erbium ions for optoelectronic applications – [MN132](#)

**V. Yu. Timoshenko<sup>1</sup>, O.A. Shalygina<sup>1</sup>, D.M. Zhigunov<sup>1</sup>, S.A. Dyakov<sup>1</sup>, N.I. Komarevsky<sup>1</sup>, P. K. Kashkarov<sup>1</sup>, M. Zacharias<sup>2</sup>, M. Fujii<sup>3</sup>, and Sh. Hayashi<sup>3</sup>**

*<sup>1</sup>Moscow State M.V.Lomonosov University, Physics Department, 119992 Moscow, Russia, <sup>2</sup>Max-Planck-Institut für Mikrostrukturphysik, Weinberg 2, 06120 Halle, Germany, <sup>3</sup>Kobe University, Faculty of Engineering, Department of EEE, 657-8501 Kobe, Japan*

- 12<sup>30</sup> – 12<sup>45</sup>** Determination of critical points of nanocrystalline silicon films: the role of grain boundaries in the optical properties – [MN48](#)  
**E. Lioudakis<sup>1,\*</sup>, Andreas Othonos<sup>1</sup> and A. G. Nassiopoulou<sup>2</sup>**  
<sup>1</sup>Research Center of Ultrafast Science, Depart. of Physics, Univ. of Cyprus, P.O.Box 20537, 1678, Nicosia, Cyprus, <sup>2</sup>IMEL/NCSR Demokritos, P.O. Box 60228, 15310, Athens, Greece
- 12<sup>45</sup> – 13<sup>00</sup>** New effects in finite-length silicon nanowires – [MN161](#)  
**A. D. Zdetsis, E. N. Koukaras , C. S. Garoufalis**  
 Department of Physics University of Patras, Greece
- 13<sup>00</sup> – 14<sup>30</sup>** **Lunch Break**

## Session 7: Devices

### Session Chairs: C. Christofidis, L. Ventura

- 14<sup>30</sup> – 14<sup>45</sup>** Influence of current injection on the electroluminescence properties of GaN-based LEDs – [MN59](#)  
**Carmen Salcianu<sup>1, 2</sup>, Ted Thrush<sup>1</sup>, Clifford McAleese<sup>1</sup> and Colin Humphreys<sup>1</sup>**  
<sup>1</sup>Department of Materials Science & Metallurgy, Univ. of Cambridge, CB2 3QZ, UK, <sup>2</sup>Thomas Swan Scientific Equipment Ltd., Cambridge, CB4 5FQ, UK
- 14<sup>45</sup> – 15<sup>00</sup>** Metallic Contacts Effect Estimation on (SI) GaAs Soft X-Ray Radiation Detectors Performance – [MN98](#)  
**V G Theonas<sup>1,\*</sup>, G Konstantinidis<sup>2</sup>, G J Papaioannou<sup>1</sup>**  
<sup>1</sup>Solid State Physics Section, Physics Dept., N.K.U.A, Panepistimiopolis Zografos, 15784 Athens, Greece  
<sup>2</sup>Institute of Electronic Structure and Laser, Foundation for Research and Technology – Hellas, Vassilika Vouton, 71110 Heraklion, Crete, Greece
- 15<sup>00</sup> – 15<sup>15</sup>** Photochemical study of red fluorescent emitters for application in Organic Light Emitting Diodes (OLEDs) – [MN171](#)  
**D. Georgiadou<sup>1,3</sup>, M. Vasilopoulou<sup>1</sup>, G. Pistolis<sup>2</sup>, D. Dimotikalli<sup>3</sup> and P. Argitis<sup>1,\*</sup>**  
<sup>1</sup>Inst. of Microelectronics, NCSR “Demokritos”, 15310 Athens, Greece, <sup>2</sup>Inst. of Physical Chemistry, NCSR “Demokritos”, 15310 Athens, Greece, <sup>3</sup>Department of Chemical Engineering, National Technical University of Athens, 15780 Athens, Greece
- 15<sup>15</sup> – 15<sup>30</sup>** Deposition and electrical characterization of hafnium oxide films on silicon – [MN64](#)  
**E. Verrelli<sup>1</sup>, D. Tsoukalas<sup>2</sup>, D. Kouvatsos<sup>3</sup>**  
<sup>1</sup>National Technical University of Athens, Heron Polytechniou Str. 9, Zographou Campus GR-15773, Athens, Greece, <sup>2</sup>National Technical University of Athens, Heron Polytechniou Str. 9, Zographou Campus GR-15773, Athens, Greece, <sup>3</sup>Institute of Microelectronics, NCSR “Demokritos”, 15310 Aghia Paraskevi, Greece
- 15<sup>30</sup> – 15<sup>45</sup>** Physics Based Capacitance Modeling of Short-Channel Double Gate MOSFETs – [MN13](#)  
**Håkon Børli, Kristian Vinkenes and Tor A. Fjeldly**  
 UniK – University Graduate Center, Norwegian University of Science and Technology, Kjeller, Norway

15<sup>45</sup> – 16<sup>00</sup> Numerical simulation of quantum transport in DGMOS using Coupled Poisson-deterministic Wigner-Schrödinger equations – [MN187](#)  
**J. Kefi-Ferhane & A. Poncet**  
*INL, Institut des Nanotechnologies de Lyon, INSA de Lyon, France*

16<sup>00</sup> – 16<sup>30</sup> **Coffee Break**

## Session 8: Fabrication and characterization of nanostructures (parallel session)

Session Chairs: **N. Frangis, S. Kennou**

16<sup>30</sup> – 16<sup>45</sup> Strain relaxation in AlN/GaN heterostructures grown by molecular beam epitaxy – [MN66](#)  
**G.P. Dimitrakopoulos<sup>1,\*</sup>, Ph. Komninou<sup>1</sup>, Th. Kehagias<sup>1</sup>, S.-L. Sahonta<sup>1</sup>, J. Kioseoglou<sup>1</sup>, I. Hausler<sup>2</sup>, W. Neumann<sup>2</sup>, E. Iliopoulos<sup>3</sup>, A. Georgakilas<sup>3</sup>, and Th. Karakostas<sup>1</sup>**  
*<sup>1</sup>Solid State Section, Physics Department, Aristotle University of Thessaloniki, GR 54124 Thessaloniki, Greece, <sup>2</sup>Institute of Physics, Humboldt University Berlin, Newtonstreet 15, 12489 Berlin, Germany, <sup>3</sup>Microelectronics Research Group, Department of Physics, University of Crete, P.O. Box 2208, 71003 Heraklion-Crete, Greece; and IESL, FORTH, P.O. Box 1527, GR 71110 Heraklion-Crete, Greece*

16<sup>45</sup> – 17<sup>00</sup> TEM investigations of (In,Ga)N QWs by TEM – [MN50](#)  
**P. Manolaki<sup>1</sup>, I. Häusler<sup>1</sup>, H. Kirmse<sup>1</sup>, W. Neumann<sup>1</sup>, J. Smac<sup>2,3</sup>, & J. Kozubowski<sup>3</sup>**  
*<sup>1</sup>Humboldt-Universität zu Berlin, Institut für Physik, AG Kristallographie, Newtonstraße 15, D-12489 Berlin, Germany, <sup>2</sup>Institute of High Pressure Physics, Polish Academy of Sciences, Sokolowska 29/37, 01-142 Warsaw, Poland, <sup>3</sup>Warsaw University of Technology, Department of Materials Science, ul. Wołoska 141, 02-507 Warsaw, Poland*

17<sup>00</sup> – 17<sup>15</sup> TEM characterization of VLS-grown ZnTe nanowires – [MN148](#)  
**H. Kirmse, W. Neumann, S. Kret, P. Dłużewski, E. Janik, G. Karczewski, T. Wojtowicz**  
*<sup>1</sup>Humboldt-Universität zu Berlin, Institut für Physik, AG Kristallographie, Newtonstraße 15, D-12489 Berlin, Germany, <sup>2</sup>Polish Academy of Science, Institute of Physics, Physics PAS, Al. Lotników 32/46, 02-668 Warsaw, Poland*

17<sup>15</sup> – 17<sup>30</sup> On advantages and limitations of Raman spectrometry for control of nanotube inclusions in polymer composites – [MN123](#)  
**Eleni Spanou, George Vessiaris, Dr Andreas Kuprianou, Prof. Doumanidis Charalampos, Vladislav Ryzhkov**  
*Rosseter Holdings PCL, Limassol, Cyprus*

17<sup>30</sup> – 17<sup>45</sup> Nonlinear optical properties of Au nanoclusters encapsulated into hybrid block copolymer micelles – [MN99](#)  
**Kostas Iliopoulos<sup>1,2</sup>, Dimitris Athanasiou<sup>1</sup>, Stelios Couris<sup>1,2</sup>, Anastasia Meristoudi<sup>3,4</sup>, Nikos Vainos<sup>3,4</sup>, Stergios Pispas<sup>3</sup>**  
*<sup>1</sup>Institute of Chemical Engineering and High Temperature Chemical Processes (ICEHT), Foundation for Research and Technology-Hellas (FORTH), P.O. Box 1414, GR-26504 Patras, Greece, <sup>2</sup>Department of*

Physics, University of Patras, GR-26500 Patras, Greece, <sup>3</sup>Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, GR-11635 Athens, Greece, <sup>4</sup>Department of Materials Science, University of Patras, GR-26500 Patras, Greece

17<sup>45</sup> – 18<sup>00</sup>

The properties of the nanometer thick Si/Ge films-on-insulator produced by Ge<sup>+</sup> ion implantation and subsequent hydrogen transfer – MN157

**Ida E. Tyschenko<sup>1</sup>, Matthias Voelskow<sup>2</sup>, Alexander G. Cherkov<sup>1</sup>, & Vladimir P. Popov<sup>1</sup>**

<sup>1</sup>Institute of Semiconductor Physics, Russian Academy of Science, Novosibirsk, 630090, Russia, <sup>2</sup>Institute of Ion Beam Physics and Material Research, 01314 Dresden, Germany

## Session 9: Materials, devices and applications (parallel session)

### Session Chairs: S. Logothetidis, H. Dimitriadis

16<sup>30</sup> – 16<sup>45</sup>

Molecular Nanodevices based on Functionalized Cyclodextrins – MN136

**Dimitrios Velessiotis<sup>1</sup>, Davide Maffeo<sup>2</sup>, Eleni Makarona<sup>1</sup>, Viswanathan Chinnuswamy<sup>1</sup>, Constantinos Milios<sup>3</sup>, Konstantina Yannakopoulou<sup>2</sup>, Irene Mavridis<sup>2</sup>, Zoe Pikramenou<sup>3</sup> & Nikos Glezos<sup>1</sup>**

<sup>1</sup>Institute of Microelectronics, NCSR Demokritos, Ag. Paraskevi, Athens, Greece, <sup>2</sup>Institute of Physical Chemistry, NCSR Demokritos, Ag. Paraskevi, Athens, Greece, <sup>3</sup>School of Chemistry, University of Birmingham, Edgbaston, Birmingham, UK

16<sup>45</sup> – 17<sup>00</sup>

Electronic structure investigation of Nickel Phthalocyanine thin film interfaces with inorganic and organic substrates – MN62

**Foteini Petraki & Stella Kennou**

Department of Chemical Engineering, University of Patras and FORTH/ICE-HT, Rion, Greece

17<sup>00</sup> – 17<sup>15</sup>

Covalent Grafting of Glycine onto the Porous Silicon Surface – MN2

**S. Sam<sup>1, 3</sup>, A. C. Gouget-Laemmel<sup>2</sup>, J-N. Chazalviel<sup>2</sup>, F. Ozanam<sup>2</sup>, N. Gabouze<sup>1</sup>, S. Djebbar<sup>3</sup>**

<sup>1</sup>UDTS, 02, Bd. Frantz Fanon, B.P. 140 Alger-7 merveilles, 16200 Algiers, Algeria, <sup>2</sup>LPMC, CNRS-Ecole Polytechnique, Route de saclay, 91128 Palaiseau, France, <sup>3</sup>USTHB, B.P. 32 El Alia, Bab Ezzouar, Algiers, Algeria

17<sup>15</sup> – 17<sup>30</sup>

Applied nanoionics of advanced superionic conductors – MN154

**A.L.Despotuli, A.V.Andreeva**

Institute of Microelectronics Technology and High-Purity Material, Russian Academy of Sciences, Chernogolovka, Moscow Region, Russia

17<sup>30</sup> – 17<sup>45</sup>

Energetic calculations of the AlN/GaN interface – MN67

**E. Kalessaki, J. Kioseoglou, G. P. Dimitrakopoulos, Ph. Komninou\*, and Th. Karakostas**

Depart. of Physics, Aristotle University of Thessaloniki, Greece



17<sup>45</sup> – 18<sup>00</sup> Enhanced efficiency of narrow InGaN/GaN quantum wells –  
MN58  
**S.-L. Sahonta, Ph. Komninou<sup>1</sup>, G.P. Dimitrakopoulos, Th. Karakostas, C. Salcianu<sup>2</sup> and E.J. Thrush<sup>2</sup>**  
<sup>1</sup>Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, <sup>2</sup>Thomas Swan Scientific Equipment Ltd., Buckingham Business Park, Swavesey, Cambridge, CB4 5FQ, United Kingdom

18<sup>00</sup> – 21<sup>00</sup> **POSTER SESSION 2**  
**Devices, Sensors and Microfluidics**  
**Micro&Nano fabrication**  
**Design, Integration, Systems, Photonics**

21<sup>00</sup> **CONFERENCE DINNER**

**WEDNESDAY, NOVEMBER 21, 2007**

**Session 10: Semiconductors Devices and Applications in Life-Sciences**

**Session Chairs: E. I. Kamitsos, N. Glezos**

9<sup>00</sup> – 9<sup>30</sup> Electrical Transport Through Self-Assembled Hydrophobin Protein Membrane – **I9**  
**J. Ahopelto (Invited speaker)**  
*VTT, Micro and Nanoelectronics, Finland*

9<sup>30</sup> – 10<sup>00</sup> Nanotechnology Advances in Controlled Drug Delivery Systems – **I10**  
**C. Kiparissides (Invited speaker)**  
*CPERI-CERTH, Laboratory of Polymer Reaction Engineering, Thessaloniki, Greece*

10<sup>00</sup> – 10<sup>15</sup> Micro- and Nano-particle manipulation by joint Dielectrophoresis and AC Electroosmosis: Devices for particle trapping utilizing both phenomena - **MN189**  
**N. G. Loucaides<sup>1</sup>, A. Ramos<sup>2</sup> and G. E. Georghiou<sup>1</sup>**  
*[1] University of Cyprus, Department of Electrical and Computer Engineering, [2] University of Seville, Department of Electronics and Electromagnetism*

10<sup>15</sup> – 10<sup>30</sup> Control of nano-topography and wetting properties of polymers: application in PMMA and PDMS – **MN139**  
**N. Vourdas, M.-E. Vlachopoulou, A. Tserepi, E. Gogolides**  
*Institute of Microelectronics, NCSR "Demokritos", Aghia Paraskevi, Greece*

10<sup>30</sup> – 11<sup>00</sup>

**Coffee Break**

## **Session 11: Monolithic integration on semiconductor substrates**

**Session Chairs: E. Goggolides, G. Konstantinidis**

- 11<sup>00</sup> – 11<sup>15</sup> Broadband Electrical characterization of Porous Silicon at Microwave Frequencies – [MN60](#)  
**H. Contopanagos, D. Pagonis, A. G. Nassiopoulou**  
*IMEL/NCSR "Demokritos", Aghia Paraskevi, Athens, Greece*
- 11<sup>15</sup> – 11<sup>30</sup> Low energy loss rf circuits on nanostructured porous silicon layers – [MN77](#)  
**A. Porcher\*, B. Remaki, C. Malhaire, D. Barbier**  
*INL (UMR CNRS-INSAL 5270), Université de Lyon / INSA de Lyon, France*
- 11<sup>30</sup> – 11<sup>45</sup> High-frequency scalable compact modelling of Si RF-CMOS technology – [MN151](#)  
**A. Bazigos<sup>1</sup>, M. Bucher<sup>2</sup>, P. Sakalas<sup>3</sup>, M. Schroter<sup>3</sup>**  
*<sup>1</sup>National Technical University of Athens, GR 15780 Athens, Greece, <sup>2</sup>Technical University of Crete, GR 73100 Chania, Greece, <sup>3</sup>Technical University of Dresden, D 01069 Dresden, Germany*
- 11<sup>45</sup> – 12<sup>00</sup> Semiconductor neuronal nanofibers for parallel computation – [MN110](#)  
**A. Samardak<sup>1</sup>, S. Taylor<sup>1</sup>, A. Nogaret<sup>1</sup>, G. Hollier<sup>2</sup>, J. Austin<sup>2</sup>, D. Ritchie<sup>3</sup>**  
*<sup>1</sup>Department of Physics, University of Bath, BA2 7AY, UK, <sup>2</sup>Department of Computer Science, University of York, YO10 5DD, UK, <sup>3</sup>Cavendish Laboratory, University of Cambridge, CB3 0HE, UK*
- 12<sup>00</sup> – 12<sup>15</sup> Monolithic integrated microring resonators: The fundamental building block towards "Dense" photonic integration – [MN196](#)  
**S. Mikroulis, D. Syvridis**  
*Department of Informatics and Telecommunications, University of Athens, Panepistimiopolis Illisia, Greece*

## **Session 12: Polymeric materials and devices**

**Session Chairs: S. Anastasiadis, P. Argitis**

- 12<sup>15</sup> – 12<sup>45</sup> Molecular nanotechnologies for plastic organic/biologic devices – [I11](#)  
**R. Cingolani (Invited speaker)**  
*National Nanotechnology Laboratory - Lecce, Italian Institute of Technology – Genova, Italy*
- 12<sup>45</sup> – 13<sup>00</sup> Photoresponsive Polymer Surfaces – [MN44](#)  
**S. H. Anastasiadis,<sup>1,2</sup> M. I. Lygeraki,<sup>1</sup> K. Lakiotaki,<sup>1</sup> M. Varda,<sup>1</sup> E. Tsiranidou,<sup>1</sup> A. Athanassiou,<sup>1,3</sup> M. Farsari,<sup>1</sup> D. Pisignano,<sup>3</sup> and R. Cingolani<sup>3</sup>**  
*<sup>1</sup>Institute of Electronic Structure and Laser, Foundation for Research*

and Technology-Hellas, 711 10 Heraklion, Crete, Greece, <sup>2</sup>Department of Chemical Engineering, Aristotle University of Thessaloniki, 541 24 Thessaloniki, Greece, <sup>3</sup>National Nanotechnology Laboratory, INFN, CNR, 73100, Lecce, Italy and Italian Institute of Technology, Genova, Italy

**13<sup>00</sup> – 13<sup>15</sup>** Photoinduced reversible diffraction efficiency of lithographic gratings on nanocomposite films containing photochromic molecules – [MN141](#)  
**D. Fragouli, D. Pisignano, G. Paladini, G. Caputo, D. Cozzoli, R. Cingolani, A. Athanassiou**  
NNL-National Nanotechnology Laboratory, INFN, CNR, Via Arnesano, Lecce, Italy

**13<sup>15</sup> – 14<sup>30</sup>** **Lunch Break**

## **Session 13: Nanostructures and characterization techniques**

### **Session Chair: L. Canham, X. Zianni**

**14<sup>30</sup> – 14<sup>45</sup>** Optical properties of silicon based nanostructures – [MN33](#)  
**A. Sa'ar, I. Balberg**  
Racah Instit. of Physics and the Center for Nanoscience and Nanotechn., the Hebrew Univ. of Jerusalem, Israel

**14<sup>45</sup> – 15<sup>00</sup>** Nanocrystalization of SM-FE-TA-N composites inside magnetic nanodroplets from fast cooling on tantalum surface – [MN88](#)  
**E. Sarantoupolou<sup>1</sup>, J. Kovač<sup>2</sup>, M. Janeva<sup>3</sup>, Z. Kollia<sup>1</sup>, S. Kobe<sup>4</sup>, G. Dražić<sup>4</sup>, A. C. Cefalas<sup>1</sup>**  
<sup>1</sup>National Hellenic Research Foundation, TPCI, Athens, 11635 Greece, <sup>2</sup>Josef Stefan Institute, Department for Surface Engineering and Optoelectronics, Jamova 39, Ljubljana, Slovenia, <sup>3</sup>National Institute of Chemistry, Hajdrihova 19, 1000 Ljubljana, Slovenia, <sup>4</sup>Jozef Stefan Institute, Nanostructured Materials, Jamova 39, 1000 Ljubljana, Slovenia

**15<sup>00</sup> – 15<sup>15</sup>** ANNA - Analytical Network for Nanotechnology – [MN177](#)  
**M. Bersani<sup>1</sup>, G. Pepponi<sup>1</sup>, D. Giubertoni<sup>1</sup> and J. van den Berg<sup>2</sup>**  
<sup>1</sup>Fondazione Bruno Kessler - irst, via Sommarive 18, 38050 Povo (Trento), Italy, <sup>2</sup>Joule Physics Laboratory, Institute of Materials Research, University of Salford, Salford, M5 4WT, United Kingdom

**15<sup>15</sup> – 15<sup>30</sup>** Luminescence of lanthanides from xerogels embedded in mesoporous matrices – [MN21](#)  
**N. V. Gaponenko<sup>1</sup>, G. K. Malyarevich<sup>1</sup>, D. A. Tsykounou<sup>1</sup>, E. A. Stepanova<sup>1</sup>, A. V. Mudryi<sup>1</sup>, V. E. Borisenko<sup>1</sup>, I. S. Molchan<sup>2</sup>, P. Skeldon<sup>2</sup>, G. E. Thompson<sup>2</sup>**  
<sup>1</sup>Laboratory of Nanophotonics, Belarusian State University of Informatics and Radioelectronics, Browki St.6, 220013 Minsk, Belarus, <sup>2</sup>Corrosion and Protection Center, The University of Manchester, Manchester, United Kingdom

**15<sup>30</sup> – 15<sup>45</sup>** Mechanochemistry in preparation of nanocrystalline semiconductors – [MN4](#)  
**P. Baláž<sup>1</sup>, E. Dutková<sup>1</sup>, E. Gock<sup>2</sup>**  
<sup>1</sup>Institute of Geotechnics, Slovak Academy of Sciences, Watsonova 45, 043 53 Košice, Slovakia, <sup>2</sup>Clausthal University of Technology,

Institute for Mineral Processing and Waste Disposal, German,  
Walther-Nernst-Strasse 9, 38678 Clausthal-Zellerfeld, Germany

15<sup>45</sup> – 16<sup>15</sup>

**Coffee Break**

## **Session 14: Nanostructures: Materials and Devices**

**Session Chair: C. Soukoulis, S. Gardelis**

16<sup>15</sup> – 16<sup>30</sup>

Bias Dependence of Spin-Transfer Torque in Magnetic Tunnel Junctions – [MN42](#)

**I. Theodonis<sup>1</sup>, N. Kioussis<sup>2</sup>, A. Kalitsov<sup>3</sup>, M. Chshiev<sup>4</sup>, W.H. Butler<sup>4</sup>**

<sup>1</sup>Depart. of Physics, National Technical Univers. Athens, Zografou Campus 15780, Greece, <sup>2</sup>Theoretische Physik, Universität Kassel, Heinrich-Plett-Strasse 40, 34132, Germany, <sup>3</sup>Depart. of Physics, California State Univers. Northridge, CA 91330-8268, USA, <sup>4</sup>MINT Center, Univers. of Alabama, P. O. Box 870209, Tuscaloosa, USA

16<sup>30</sup> – 16<sup>45</sup>

Study of the r-plane sapphire nitridation for epitaxial growth of a-plane GaN by molecular beam epitaxy – [MN135](#)

**G. Tsiakatouras<sup>1</sup>, J. Smalc<sup>2</sup>, K. Tsagaraki<sup>1</sup>, M. Androulidaki<sup>1</sup>, Ph. Komninou<sup>2</sup> and A. Georgakilas<sup>1</sup>**

<sup>1</sup>Microelectronics Research Group (MRG), Institute of Electronics Structure and Laser (IESL), Foundation of Research and Technology-Hellas (FORTH), P.O. Box 1527, 71110, Heraklion Crete, Greece, <sup>2</sup>Physics department, University of Crete, Heraklion, Greece, <sup>2</sup>Depart. of Physics, Aristotle Univ. of Thessaloniki, 54124, Greece

16<sup>45</sup> – 17<sup>00</sup>

SOI-nanowires as sensors of charge – [MN8](#)

**O.V. Naumova, D.A. Nasimov., B.I.Fomin, N.V.Dudchenko, T.A.Gavrilova, E.V. Spesivtsev, V.P.Popov**

*Institute of Semiconductor Physics, SB RAS, Novosibirsk, Russia*

17<sup>00</sup> – 17<sup>15</sup>

Calculated transport coefficients in a SET – [MN100](#)

**X. Zianni**

*Department of Applied Sciences, Technological Educational Institution of Chalkida, Psachna, Greece*

17<sup>15</sup> – 17<sup>30</sup>

Controlled Population Dynamics in Semiconductor Quantum Well and Quantum Dot Structures – [MN101](#)

**E. Paspalakis<sup>1</sup>, C. Simserides<sup>1</sup>, A. Fountoulakis<sup>2</sup> & A. F. Terzis<sup>2</sup>**

<sup>1</sup>Materials Science Department, School of Natural Sciences, University of Patras, 265 04, Greece, <sup>2</sup>Physics Department, School of Natural Sciences, University of Patras, Patras 265 04, Greece

17<sup>30</sup> – 19<sup>00</sup>

**CLOSING OF THE CONFERENCE**



**3<sup>rd</sup> International Conference on Micro-Nanoelectronics, Nanotechnology & MEMs**  
**NCSR Demokritos, Athens, 18 – 21 November 2007, [www.micro-nano.gr/conf2007](http://www.micro-nano.gr/conf2007)**

## POSTER PROGRAMME

**Poster Session I - Monday 18<sup>15</sup> - 21<sup>00</sup>**

### Materials fabrication and characterization

- P I.1** "Study of polystyrene film coating on the surface of porous silicon", **F-Z. Tighilt<sup>1,2</sup>, S. Sam<sup>1</sup>, N.Belhaneche<sup>2</sup> and N. Gabouze<sup>1</sup>**, <sup>1</sup> UDTS, 02Bd. Frantz Fanon, B.P. 140. 7 merveilles Alger – Gare, Algiers, Algeria, <sup>2</sup> ENP, 10, Avenue Hassen Badi- B.P. 182-16200 El Harach, Algiers, Algeria.
- P I.2** "Degradation of NO<sub>2</sub>-nitrided oxides under electrical field stress and irradiation", **O.V.Naumova, B.I.Fomin, N.V.Sakharova, V.P.Popov**, *Institute of Semiconductor Physics, SB RAS, Novosibirsk, Russia*
- P I.3** "Covalent and Non-Covalent Functionalization of Carbon Nanotubes and Carbon Nanohorns with Polymers", **Grigoris Mountrichas, Stergios Pispas & Nikos Tagmatarchis**, *Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, 48 Vass. Constantinou Ave., 11635 Athens, Greece*
- P I.4** "Liquid and gaseous stain etching of micro-machined silicon structures", **Vasily Melnikov<sup>1</sup>, V. Yu. Timoshenko<sup>2</sup>, Ekaterina Astrova<sup>3</sup>, Tatiana Perova<sup>1</sup>, Viji Srigengan<sup>4</sup>, Harold Gamble<sup>4</sup>**, <sup>1</sup> Department of Electronic and Electrical Engineering, Trinity College, Dublin 2, Ireland, <sup>2</sup> Moscow State M.V. Lomonosov University, Physics Department, Moscow, Russia, 119992, <sup>3</sup> Ioffe Physico-Technical Institute, Polytechnicheskaya 26, St.-Petersburg, Russia, 194021, <sup>4</sup> School of Electrical & Electronic Engineering, Queen's University of Belfast, Ashby Building, Stranmillis Rd, Belfast, BT9 5AH. UK
- P I.5** "Nutritional applications of nanostructured silicon : an edible semiconductor", **L. Canham**, *pSiNutria Ltd, Malvern Hills Science Park, Geraldine Rd, Malvern, Worcestershire, WR14 3SZ, UK*
- P I.6** "FeNi alloys electroplated into porous (n-type) silicon", **S.Ouir<sup>1,2</sup>, S.Sam<sup>1</sup>,G.Fortas<sup>1</sup>, N.Gabouze<sup>1</sup>, A. Manseri<sup>1</sup>, K. Beldjilali<sup>1</sup>**, <sup>1</sup>. UDTS, 02, Bd. Frantz Fanon, B.P. 399 Alger-Gare, Algiers, Algeria <sup>2</sup>. USDB, B.P. 270, route de Soumaa, Blida, Algeria
- P I.7** "Correlation between Transport, Dielectric and Optical Properties of Porous Silicon", **A. Sa'ar**, *Racah Institute of Physics and the Center for Nanoscience and Nanotechnology, the Hebrew University of Jerusalem, Jerusalem 91904, Israel*
- P I.8** "The role of H<sub>2</sub>O molecules in the process of ammonia adsorption on the silicon nanostructures surface", **A. V. Pavlikov, Ivan B. Leukhin, A. A. Silaev, A. S. Vorontsov and V. Yu.Timoshenko**, *Faculty of Physics, Moscow State University, Leninskie Gory, 119992 Moscow, Russia*

- P I.9** “Durability and photophysical properties of surfactant-covered porous silicon particles in aqueous suspensions”, **María Balaguer**<sup>1</sup>, **Ester Pastor**<sup>1</sup>, **Leszek Bychto**<sup>1,2</sup>, **Pedro Atienzar**<sup>3</sup>, **Miguel A. Miranda**<sup>3</sup>, **Vladimir Chirvony**<sup>1</sup>, **Eugenia Matveeva**<sup>1</sup>, <sup>1</sup>Nanophotonics Technology Center, Universidad Politécnica de Valencia, Cami de Vera s/n 46022 Valencia, Spain, <sup>2</sup>Department of Electronics and Computer Sciences Koszalin University of Technology, Śniadeckich 2, 75-453 Koszalin, Poland, <sup>3</sup>Instituto de Tecnología Química CSIC-UPV, Universidad Politécnica de Valencia, Av. de los Naranjos s/n, 46022 Valencia, Spain
- P I.10** “Monitor the properties of silicon nanocrystals embedded in SiO<sub>2</sub> matrix using ultrashort laser pulses”, **Emmanouil Lioudakis**<sup>1,\*</sup>, **Andreas Othonos**<sup>1</sup>, **Alexandros Emporas**<sup>1</sup> and **A. G. Nassiopoulou**<sup>2</sup>, <sup>1</sup>Research Center of Ultrafast Science, Depart. of Physics, University of Cyprus, P.O. Box 20537, 1678, Nicosia, Cyprus, <sup>2</sup>IMEL/NCSR Demokritos, P.O. Box 60228, 15310, Aghia Paraskevi, Athens, Greece
- P I.11** “On the limits of a classical theory of crystalline defects: An application to type III-N nitrides”, **Amina Belkadi**<sup>1</sup>, **Toby D. Young**<sup>1</sup>, **Pawel Dluzewski**<sup>1</sup>, **Jun Chen**<sup>2</sup>, **P. Lei Huaping**<sup>3</sup> & **Gerard Nouet**<sup>3</sup>, <sup>1</sup>Institute of Fundamental Technological Research, Polish Academy of Sciences, ul. Swietokrzyska 21, 00-049, Warsaw, Poland, <sup>2</sup>LRPMN Université de Caen, IUT Alençon, 61250, Damigny, France, <sup>3</sup>SIFCOM, UMR6176, CNRS-ENSICAEN, 6 BLD. Marechal Juin, Caen 14050, France
- P I.12** “Analysis of TEM diffraction contrast of (In,Ga)N/GaN nanostructures”, **P. Manolaki**, **I. Häusler**, **A. Mogilatenco**, **H. Kirmse**, **W. Neumann**, Humboldt-Universität zu Berlin, Institut für Physik, AG Kristallographie, Newtonstrasse 15, D-12489, Germany
- P I.13** “Influence of ultra-violet radiation on properties of nanostructured silicon”, **S.P. Kulyk**<sup>1</sup>, **M.M. Melnichenko**<sup>1</sup> & **K.V. Svezhentsova**<sup>2</sup>, <sup>1</sup>Taras Shevchenko Kiev National University, Ukraine, <sup>2</sup>Institute of Semiconductor Physics of NASU, Ukraine
- P I.14** “Stabilized in Organic Media Hybrid Materials Based on Complexes of Well-Defined Functional Block Copolymers with Palladium(II) acetate”, **Maria Demetriou** and **Theodora Krasia-Christoforou**\*, Department of Mechanical and Manufacturing Engineering, University of Cyprus, P.O. Box 20537, 1678, Nicosia, Cyprus
- P I.15** “Magnesium incorporation at InN (0001) and (000-1) surfaces: A first-principles study”, **A. Belabbes**, **J. Kioseoglou**, **G. P. Dimitrakopoulos**, **Ph. Komninou**\*, and **Th. Karakostas**, Department of Physics, Aristotle University of Thessaloniki, GR-54124 Thessaloniki, Greece
- P I.16** “Pulse electrochemical method for porosification of silicon and preparation of porous dust with narrow particles size distribution”, **Leszek Bychto**<sup>1,2</sup>, **Yuri Makushok**<sup>1</sup>, **Vladimir Chirvony**<sup>1</sup> and **Eugenia Matveeva**<sup>1</sup>, <sup>1</sup>Nanophotonics Technology Center, Universidad Politécnica de Valencia, Cami de Vera s/n 46022 Valencia, Spain, <sup>2</sup>Department of Electronics and Computer Sciences Koszalin University of Technology, Śniadeckich 2, 75-453 Koszalin, Poland
- P I.17** “Analysis and defect characterization of III-nitride nanowires grown by Ni promoted MBE”, **L. Lari**<sup>1</sup>, **R. T. Murray**<sup>1</sup>, **M. Gass**<sup>2</sup>, **T. J. Bullough**<sup>1</sup>, **P. R. Chalker**<sup>1</sup>, **J. Kioseoglou**<sup>3</sup>, **G. P. Dimitrakopoulos**<sup>3</sup>, **Th. Kehagias**<sup>3</sup>, **Ph. Komninou**<sup>3</sup>, **Th. Karakostas**<sup>3</sup>, **C Chèze**<sup>4</sup>, **L Geelhaar**<sup>4</sup> and **H Riechert**<sup>4</sup>, <sup>1</sup> Department of Engineering, University of Liverpool, Liverpool, L69 3GH, UK, <sup>2</sup> SuperSTEM Laboratory, STFC Daresbury, Daresbury, WA4 4AD, UK, <sup>3</sup> Physics Department, Aristotle University, 541 24 Thessaloniki, Greece, <sup>4</sup> Qimonda, 81730 Munich, and NaMLab, 01099 Dresden, Germany
- P I.18** “Hot-wire CVD of Copper films on Self-Assembled-Monolayers of MPTMS”, **G. Papadimitropoulos** and **D. Davazoglou**, NCSR “Demokritos”, Institute of Microelectronics, POB 60228, 15310 Agia Paraskevi, Attiki, Greece
- P I.19** “Molecular beam epitaxy of InN directly on Si(111) substrates”, **\*A. O. Ajagunna**, **A. Vajreyi**, **E. Iliopoulos**, **K. Tsagaraki**, **M. Androulidaki**, **A. Georgakilas**, Microelectronics Research Group, Physics Depart., Univ. of Crete, P.O.Box 2208, 71003 Heraklion-Crete; Institute of Electronic Structure & Lasers, Foundation for Research & Technol.-Hellas, P.O.Box 1527, 71110 Heraklion-Crete, Greece
- P I.20** “Influence of the different initiation procedures and substrate’s miscut angle on the properties of epitaxial GaN-on-Si (111)”, **A. Adikimenakis**<sup>1,\*</sup>, **J. Domagala**<sup>2</sup>, **K. Tsagaraki**<sup>1</sup>, **Ph. Komninou**<sup>3</sup>, **G.P. Dimitrakopoulos**<sup>3</sup> and **A. Georgakilas**<sup>1</sup>, <sup>1</sup>Microelectronics Research Group (MRG), Institute of Electronic Structure and Laser (IESL), Foundation for Research and Technology-Hellas (FORTH), P.O. Box 1527,

71110 Heraklion Crete, Greece; and Physics department, University of Crete, Heraklion Crete, Greece, <sup>2</sup>Institute of Physics, Polish Academy of Science, Al. Lotników 32/46, 02-668 Warsaw, Poland, <sup>3</sup>Physics Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece

- P I.21** “Structural and electrical characterization of phosphorus implanted germanium”, **P. Tsouroutas<sup>1</sup>, D. Tsoukalas<sup>1,2</sup>, A. Florakis<sup>1</sup>, I. Zergioti<sup>1</sup>, N. Cherkashin<sup>2</sup>, A. Claverie<sup>2</sup>**, <sup>1</sup> Department of Applied Physics, School of Applied Sciences, National Technical University of Athens, 15780 Zographou, Greece, <sup>2</sup> CEMES/CNRS, 29 rue J. Marvig, 31055 Toulouse cedex 4, France
- P I.22** “Surface functionalization of 3D structures using biomolecules”, **A. Mourka<sup>1,2</sup>, V. Dinca<sup>1,3</sup>, E. Kasotakis<sup>4</sup>, J. Catherine<sup>1</sup>, A. Mitraki<sup>4</sup>, M. Farsari<sup>1\*</sup>, and C. Fotakis<sup>1,2</sup>**, <sup>1</sup>Institute of Electronic Structure and Laser (I.E.S.L.), Foundation for Research and Technology-Hellas (FO.R.T.H.), Vassilika Vouton, GR-711 10 Heraklion, Crete, Greece, <sup>2</sup> Department of Physics, University of Crete, Greece, <sup>3</sup>National Institute for Lasers, Plasma and Radiation Physics, Romania, <sup>4</sup> Department of Materials Science and Technology, University of Crete, Greece
- P I.23** “Comparison of the magnetic behavior between Co- and Ni-nanostructures in silicon”, **K. Rumpf<sup>1</sup>, P. Granitzer<sup>1</sup>, P. Pölt<sup>2</sup>, S. Šimić<sup>2</sup>, H. Krenn<sup>1</sup>**, <sup>1</sup> Institute of Physics, Karl Franzens University Graz, Universitaetsplatz 5, 8010 Graz, Austria, <sup>2</sup> Institute for Electron Microscopy, University of Technology Graz, Steyrergasse 17, 8010 Graz, Austria
- P I.24** “Comparative study of Zn<sub>1-x</sub>Al<sub>x</sub>O thin films and nanostructures deposited by different chemical routes”, **George Kenanakis<sup>1,2,3,4</sup>, Zacharias Giannakoudakis<sup>3</sup>, Dimitra Vernardou<sup>1,2,5</sup>, Emmanuel Koudoumas<sup>1,6</sup> and Nikos Katsarakis<sup>1,2,4\*</sup>**, <sup>1</sup>Center of Materials Technology and Laser, School of Applied Technology, Technological Educational Institute of Crete, 710 04 Heraklion, Crete, Greece, <sup>2</sup>Science Department, School of Applied Technology, Technological Educational Institute of Crete, 710 04 Heraklion, Crete, Greece, <sup>3</sup>University of Crete, Department of Chemistry, 710 03 Heraklion, Crete, Greece, <sup>4</sup>Institute of Electronic Structure and Laser, Foundation for Research & Technology-Hellas, P.O. Box 1527, Vassilika Vouton, 711 10 Heraklion, Crete, Greece, <sup>5</sup>University of Crete, Department of Materials Science and Technology, 710 03 Heraklion, Crete, Greece, <sup>6</sup>Electrical Engineering Department, Technological Educational Institute of Crete, 710 04 Heraklion, Crete, Greece
- P I.25** “Quantum effects in thin silicon rich oxide films”, **Alfredo Morales<sup>1\*</sup>, Jorge Barreto<sup>1</sup>, Carlos Domínguez<sup>1</sup>, Mariano Aceves<sup>2</sup>**, <sup>1</sup>IMB-CNM (CSIC), Campus UAB, 08193 Bellaterra, Barcelona, Spain, <sup>2</sup>INAOE, Electronics Department, Puebla, Pue., 72000, Mexico
- P I.26** “Effects of Initial Conditions in Intersubband Population Dynamics of a Semiconductor Quantum Well”, **Evangelos Voutsinas<sup>1,2</sup>, John Boviatsis<sup>1</sup>, Emmanuel Paspalakis<sup>3</sup> & Andreas F. Terzis<sup>2</sup>**, <sup>1</sup>Technological and Educational Institute of Patras, Patras 26334, Greece, <sup>2</sup>Physics Department, School of Natural Sciences, University of Patras, Patras 265 04, Greece, <sup>3</sup>Materials Science Department, School of Natural Sciences, University of Patras, Patras 265 04, Greece
- P I.27** “Propagation Effects and Switching Properties of Electromagnetically Induced Transparency in a Quantum Dot Structure”, **Antonios Fountoulakis<sup>1</sup>, Emmanuel Paspalakis<sup>2</sup> & Andreas F. Terzis<sup>1</sup>**, <sup>1</sup>Physics Department, School of Natural Sciences, University of Patras, Patras 265 04, Greece, <sup>2</sup>Materials Science Department, School of Natural Sciences, University of Patras, Patras 265 04, Greece
- P I.28** “Structure and optical properties of natural biopolymers Chitin and Chitosan”, **Gabriel Luna-Bárceñas<sup>1</sup>, Jose Louvier-Hernández<sup>1</sup>, Yuri Vorobiev<sup>1</sup> and Jesús González-Hernández<sup>2</sup>**, <sup>1</sup>CINVESTAV-IPN, Unidad Querétaro 76230, México, <sup>2</sup>CIMAV, Miguel Cervantes 120, Chihuahua, México
- P I.29** “Theoretical description of energy spectra of nanostructures assuming specular reflection of electron from the structure boundary”, **Yuri Vorobiev<sup>1</sup>, Paul Horley<sup>1,2</sup>, Petro Gorley<sup>3</sup>, Vitor Vieira<sup>2</sup>**, <sup>1</sup>CINVESTAV-IPN, Unidad Querétaro 76230, México, <sup>2</sup>Centro de Física das Interações Fundamentais (CFIF), 1049-001 Lisboa, Portugal, <sup>3</sup>Physical Electronic Department, Chernivtsy National University, 87012 Chernivtsy
- P I.30** “Photoluminescence of self-assembled single quantum dots in the linear regime”, **A.**

**Zora<sup>1</sup>, C. Simserides<sup>1,2</sup> and G. P. Triberis<sup>1\*</sup>**, <sup>1</sup>University of Athens, Physics Department, Panepistimiopolis, Zografos, GR-15784, Athens, Greece, <sup>2</sup>University of Patras, Materials Science Department, Panepistimiopolis, Rio, GR-26504, Patras, Greece

- P I.31** “Study of the influence of  $\alpha$ -particles irradiation in AlGaAs/GaAs heterojunction structures”, **P. Georgakakos<sup>1\*</sup>, G. Papaioannou<sup>1</sup>, G. Konstantinides<sup>2</sup> and Z. Hatzopoulos<sup>3</sup>**, <sup>1</sup>University of Athens, Solid State Physics Section, Panepistimiopolis Zografos, Athens 15784, Greece, <sup>2</sup>Microelectronics Group, IESL-FORTH, Heraclion 71110, Greece, <sup>3</sup>University of Crete, Department of Physics, Heraclion 71110, Greece
- P I.32** “Structure and photocatalytic performance of magnetic TiO<sub>2</sub>-Fe<sub>3</sub>O<sub>4</sub> composites for the degradation of propachlor”, **Vassiliki Belessi<sup>1</sup>, Dimitra Lambropoulou<sup>2</sup>, Radek Zboril<sup>1</sup>, Vassilis Tzitzios<sup>1</sup>, T. Albanis<sup>2</sup>, D. Petridis<sup>1</sup>**, <sup>1</sup>Institute of Materials Science, NCSR “Demokritos”, Ag. Paraskevi Attikis, Greece, <sup>2</sup>Department of Chemistry, University of Ioannina, Ioannina 45110, Greece, <sup>3</sup>Department of Chemistry, UniveDepartment of Physical Chemistry and Nanomaterial Research Centre, Palacky University, Svobody 26, 77146 Olomouc, Czech Republic
- P I.33** “Study of the early stages of Cr/4H-SiC(11-20) interface formation and its behavior at high temperatures”, **I. Dontas<sup>1</sup>, S. Karakalos<sup>1</sup>, S. Ladas<sup>1</sup> and S. Kennou<sup>1</sup>**, Department of Chemical Engineering, University of Patras and FORTH-ICE/HT, P.O. Box 1414, GR-26500, Patras, Greece
- P I.34** “Effect of In composition in the bonding environment of In in InAlN and InGaN epilayers”, **M. Katsikini<sup>1</sup>, F. Pinakidou<sup>1</sup>, E. C. Paloura<sup>1</sup>, Ph. Komninou<sup>1</sup>, E. Iliopoulos<sup>2,3</sup>, A. Adikimanakis<sup>2,3</sup>, A. Georgakilas<sup>2,3</sup>, E. Welter<sup>4</sup>**, <sup>1</sup> School of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, <sup>2</sup> Physics Dept., University of Crete, 71003 Heraklion-Crete, Greece, <sup>3</sup> Microelectronics Research Group, IESL,FORTH, 71110 Heraklion-Crete, Greece, <sup>4</sup> HASYLAB, Notkestr. 85, 22603 Hamburg, Germany
- P I.35** “Electron microscopy investigation of extended defects in non-polar gallium nitride layers deposited on r-plane sapphire”, **J. Smalc<sup>1\*</sup>, Ph. Komninou<sup>1</sup>, J. Kioseoglou<sup>1</sup>, S.-L. Sahonta<sup>1</sup>, G. Tsiakatouras<sup>2</sup>, A. Georgakilas<sup>2</sup>**, <sup>1</sup>Department of Physics, Aristotle University of Thessaloniki, GR 54124 Thessaloniki, Greece, <sup>2</sup>Microelectronics Research Group, Department of Physics, University of Crete, P.O. Box 2208, 71003 Heraklion-Crete, Greece and IESL, FORTH, P.O. Box 1527, GR 71110 Heraklion-Crete, Greece
- P I.36** “Micropores modification in InP”, **D. Nohavica<sup>1</sup>, P. Gladkov<sup>1</sup>, Z. Jarchovsky<sup>1</sup>, J. Zelinka<sup>1</sup> and Ph. Komninou<sup>2</sup>, A. Delimitis<sup>2</sup>, Th. Kehagias<sup>2</sup>, Th. Karakostas<sup>2</sup>**, <sup>1</sup>Institute of Photonics and Electronics, Academy of Science of the Czech Republic, Chaberska 57, CZ18251-Prague 8, Czech Republic, <sup>2</sup>Physics Department, Aristotle University of Thessaloniki, GR 54124 Thessaloniki, Greece
- P I.37** “Growth of ternary NiAl<sub>x</sub>Si<sub>2-x</sub> and NiGa<sub>x</sub>Si<sub>2-x</sub> layers on Si(001)”, **A. Mogilatenco<sup>1</sup>, F. Allenstein<sup>2</sup>, A. Schubert<sup>2</sup>, G. Beddies<sup>2</sup>, H.-J. Hinneberg<sup>2</sup>, W. Neumann<sup>1</sup>**, <sup>1</sup>Institut für Physik, Humboldt-Universität zu Berlin, Newtonstr. 15, 12489 Berlin, Germany, <sup>2</sup>Institut für Physik, Technische Universität Chemnitz, 09107 Chemnitz, Germany
- P I.38** “Interface crystallography & capacitor properties of heterostructures based on advanced superionic conductors”, **A.V. Andreeva and A.L. Despotuli**, Institute of Microelectronics Technology and High-Purity Material, Russian Academy of Sciences 142432 Chernogolovka, Moscow Region, Russia
- P I.39** “Endotaxial growth of InSb nanocrystals on the bonding interface of silicon-on-insulator structure”, **Ida E. Tyschenko<sup>1</sup>, Matthias Voelskow<sup>2</sup>, Alexander G. Cherkov<sup>1</sup>, & Vladimir P. Popov<sup>1</sup>**, <sup>1</sup>Institute of Semiconductor Physics, Russian Academy of Science, Novosibirsk, 630090, Russia, <sup>2</sup>Institute of Ion Beam Physics and Material Research, 01314 Dresden, Germany
- P I.40** “Influence of Ammonia and Parabenzoquinone Molecules Adsorption on Photoluminescence Properties of Silicon Nanocrystals Ensembles”, **Yury V. Ryabchikov, Alexander S. Vorontsov, Luybov A. Osminkina, Victor Yu. Timoshenko, Pavel K. Kahkarov**, Faculty of Physics, Moscow State University, Leninskie Gory, Moscow 119992, Russia
- P I.41** “Efficient IR Emission from Patterned Thin Metal Films on a Si Photonic Crystal”, **P. Theodoni<sup>a</sup>, P. Bayiati<sup>a</sup>, M. Chatzichristidi<sup>a</sup>, T. Speliotis<sup>b</sup>, V. Vamvakas<sup>a</sup>, I.**



**Raptis<sup>a</sup>, N. Papanikolaou<sup>a</sup>**, <sup>a</sup>Institute of Microelectronics, NCSR "Demokritos", Ag. Paraskevi, Athens, GR-15310, Greece, <sup>b</sup>Institute of Material Science, NCSR "Demokritos", Ag. Paraskevi, Athens, GR-15310, Greece

- P I.42** "Anodic Porous Alumina Thin Films on Si: Interface Characterization", **V. Gianneta<sup>1</sup>, S. N. Georga<sup>2</sup>, C. A. Krontiras<sup>2</sup>, A. G Nassiopoulou<sup>1</sup>**, <sup>1</sup>IMEL/NCSR Demokritos, P.O Box 60228, 15310 Athens, Greece, <sup>2</sup>Department of Physics, University of Patras, 26504 Patras, Greece
- P I.43** "Composition Analysis of Ternary Semiconductors by Combined Application of Conventional TEM and HRTEM", **Ines Häusler, Holm Kirmse, Wolfgang Neumann, Humboldt-Universität zu Berlin, Institut für Physik, AG Kristallographie, Newtonstraße 15, 12489 Berlin, Germany**
- P I.44** "Polyoxometalate-Based Multilayers: Fabrication and Electrical Characterization", **Antonios M. Douvas<sup>1\*</sup>, Eleni Makarona<sup>1</sup>, Dimitrios Velessiotis<sup>1</sup>, Jerzy A. Mielczarski<sup>2</sup>, Ela Mielczarski<sup>2</sup>, Nikos Glezos<sup>1</sup>, Panagiotis Argitis<sup>1</sup>**, <sup>1</sup>Institute of Microelectronics, NCSR Demokritos, 15310 Aghia Paraskevi, Athens, Greece, <sup>2</sup>LEM, INPL/CNRS, UMR 7569, B.P. 40, 54501 Vandoeuvre-lès-Nancy, France
- P I.45** "Recharging of silicon nanocrystals embedded into oxide matrix: Q-DLTS study", **I.V. Antonova<sup>1</sup>, E.P. Neustroev<sup>2</sup>, S.A. Smagulova<sup>2</sup>, Z.S. Yanovitskaya<sup>1</sup>, J. Jedrzejewski<sup>3</sup> and I. Balberg<sup>3</sup>**, <sup>1</sup>Institute of Semiconductor Physics, Lavrentieva 13, 630090, Novosibirsk, Russia, <sup>2</sup>Yakutsk State University, Belinskogo 58, 677891, Yakutsk, <sup>3</sup>The Racah Institute of Physics, The Hebrew University, 91904, Jerusalem, Israel
- P I.46** "Carrier gas composition and growth temperature dependence of ELO GaN grown by HVPE", **Ouassila GOURMALA, Julie TOURET, Agnès TRASSOUDAINE, Yamina ANDRE, Robert CADORET, Dominique CASTELLUCI, Evelyne GIL**, LASMEA Université Blaise Pascal Clermont II, France
- P I.47** "New technique for the production of stretch-aligned highly conducting and semi-crystalline polyaniline", **E. K. Chatzidaki<sup>1</sup>, N. K. Kanellopoulos<sup>1</sup> and N. Theophilou<sup>1\*</sup>**, <sup>1</sup>Materials & Membranes for Environmental Separations Laboratory, Institute of Physical Chemistry, N.C.S.R. "Demokritos", 15310 Ag. Paraskevi Attiki, Greece
- P I.48** "ZnO nanowire growth based on a low-temperature, silicon-compatible combinatorial method", **Eleni Makarona<sup>1\*</sup>, Thanassis Speliotis<sup>2</sup>, Giorgos Niarchos<sup>1</sup>, Dimitrios Niarchos<sup>2</sup> and Christos Tsamis<sup>1</sup>**, <sup>1</sup>Institute of Microelectronics, NCSR "Demokritos", P. Grigoriou & Neapoleos, Aghia Paraskevi 153 10, Athens, Greece, <sup>2</sup>Institute of Materials Science, NCSR "Demokritos", P. Grigoriou & Neapoleos, Aghia Paraskevi 153 10, Athens, Greece
- P I.49** "Effect of deposition pressure and post deposition annealing on SmCo thin film properties", **Thanasis Speliotis<sup>1</sup>, Eleni Makarona<sup>2</sup>, Federico Chouliaras<sup>1</sup>, C. Charitidis<sup>3</sup>, Christos. Tsamis<sup>2</sup> and Dimitris Niarchos<sup>1</sup>**, <sup>1</sup>NCSR "Demokritos", Institute of Materials Science, 15310 Ag. Paraskevi Athens Greece, <sup>2</sup>NCSR "Demokritos", Institute of Microelectronics, 15310 Ag. Paraskevi Athens Greece, <sup>3</sup>NTUA, School of Chemical Engineering, Zographos, 157 80 Athens Greece
- P I.50** "Influence of different substrates on the ionic conduction in LiCoO<sub>2</sub>/LiNbO<sub>3</sub> thin-film bi-layers", **E.E. Horopanitis, G. Perentzis and L. Papadimitriou\***, Aristotle University of Thessaloniki, Department of Physics, Section of Solid State Physics, 54124 Thessaloniki, Greece
- P I.51** "Nanodiamond formation in hydrogenated amorphous carbon thin films", **S. Kassavetis, S. Lousinian, S. Logothetidis, I.Tsiaoussis, N. Frangis**, Department of Physics, Aristotle University of Thessaloniki, GR-54124 Thessaloniki, Greece
- P I.52** "Optical properties of two dimensional arrays of metallodielectric Nanosandwiches", **N. Papanikolaou<sup>a</sup>, G. Gantzounis<sup>b</sup>, and N. Stefanou<sup>b</sup>**, <sup>a</sup>Institute of Microelectronics, NCSR "Demokritos", Ag. Paraskevi, Athens, GR-15310, Greece, <sup>b</sup>Section of Solid State Physics, University of Athens, Panepistimioupolis, GR-157 84 Athens, Greece
- P I.53** "Depletion of parallel conducting layers in high mobility In<sub>0.53</sub>Ga<sub>0.47</sub>As/In<sub>0.52</sub>Al<sub>0.48</sub>As modulation doped field effect transistors", **E. Skuras<sup>1</sup>, A. Gavalas<sup>1</sup>, D. Spathara<sup>1</sup>, D. Anagnostopoulos<sup>1</sup>, C.R. Stanley<sup>2</sup>**, <sup>1</sup>Department of Materials Engineering, University of Ioannina, Ioannina 45110, Greece, Department of Electronics and Electrical Engineering, Oakfield Avenue, <sup>2</sup>University of Glasgow, Glasgow G12 8LT, United Kingdom

- P I.54** "Poisson ratio under compressive strain; effect on the mechanical response of the Cu<sub>46</sub>Zr<sub>54</sub> metallic glass", **L. Tayebi<sup>1</sup>, Ch.E. Lekka<sup>2</sup>, G.A. Evangelakis<sup>1</sup>**, (1) *University of Ioannina, Department of Physics, Ioannina 45110, Greece*, (2) *University of Ioannina, Department of Materials Science and Engineering, Ioannina 45110, Greece*
- P I.55** "Auger Recombination in Silicon Nanocrystals", **M. Mahdouani<sup>1</sup>, R. Bourguiga<sup>1,a</sup>, S. Jaziri<sup>1,a</sup>, S. Gardelis and A.G. Nassiopoulou<sup>1</sup>**, <sup>1</sup> *Laboratoire de Physique des Matériaux, <sup>a</sup> Faculté des Sciences de Bizerte, 7021 Jarzouna-Bizerte, Tunisia*, <sup>2</sup> *IMEI, NCSR Demokritos, P.O. Box 60228, 15310 Athens Greece*

## Characterization

- P I.56** "Characterization of Electroless Copper Deposition into Porous Silicon", **S. Sam<sup>1, 2</sup>, N. Gabouze<sup>1</sup>, S. Djebbar<sup>2</sup>**, <sup>1</sup> *UDTS, 02, Bd. Frantz Fanon, B.P. 140 Alger-7 merveilles, 16200 Algiers, Algeria*, <sup>2</sup> *USTHB, B.P. 32 El Alia, Bab Ezzouar, Algiers, Algeria*
- P I.57** "Electrical investigations of the InAs quantum dots in the AIO matrix", **O.R. Bajutova, A.G. Milekhin, O.V. Naumova, A.I. Toropov, A. Gutakovsky**, Institute of Semiconductor Physics, 630090 Novosibirsk, Russia
- P I.58** "Optical properties of InAlN(0001) alloys in the whole composition range", **E. Iliopoulos<sup>1</sup>, A. Adikimenakis, M. Androulidaki, G. Tsiakatouras and A. Georgakilas**, *Microelectronics Research Group, Institute of Electronic Structure and Lasers, Foundation for Research and Technology-Hellas, P.O.Box 1527, 71110 Heraklion-Crete, Greece; and Physics Department, University of Crete, Heraklion-Crete, Greece*
- P I.59** "Optical Spectroscopy of Silicon Nanocrystals for Biomedical Applications", **Yury V. Ryabchikov, Alexander S. Vorontsov, Victor Yu. Timoshenko, Pavel K. Kahkarov**, *Faculty of Physics, Moscow State University, Leninskie Gory, Moscow 119992, Russia*
- P I.60** "Cr/4H-SiC Schottky contacts investigated by electrical and photoelectron spectroscopy techniques", **Koliakoudakis H.<sup>2</sup>, Dontas J.<sup>1</sup>, Kayambaki M.<sup>2</sup>, Ladas S.<sup>1</sup>, Konstantinidis G.<sup>2</sup>, Zekentes K.<sup>2</sup>, Kennou S.<sup>1</sup>**, <sup>1</sup> *Department of Chemical Engineering, University of Patras and FORTH-ICE/HT, 26504 Rion, Patras, Greece*, <sup>2</sup> *MRG, IESL, FORTH, Vassilika Vouton, PO BOX 1527, 71110 Heraklion, Crete, Greece*
- P I.61** "Fano effect in quasi-one-dimensional wires with short- and finite-range impurities", **Vassilios Vargiamidis, Philomela Komninou, and Hariton M. Polatoglou**, *Department of Physics, Aristotle University, GR-54124 Thessaloniki, Greece*
- P I.62** "Comparison between SIMS and NRA for obsidian hydration dating purposes", **D. Grambole<sup>1</sup>, W. Pilz<sup>1</sup>, Th. Ganetsos<sup>2</sup>, I. Liritzis<sup>3</sup> and N. Laskaris<sup>3</sup>**, <sup>1</sup> *Research Center Rossendorf Inc, Institute of Ion Beam Physics and Materials Research, P.O. Box 510119, D-01314, Dresden, Germany*, <sup>2</sup> *Department of Electronics, Technological Educational Institute of Lamia, 3<sup>rd</sup> Km O.N.R. Lamia-Athens, TK 35100, Greece*, <sup>3</sup> *Laboratory of Archaeometry, University of Aegean, Dept. of Mediterranean Studies, 1 Demokratias Ave., Rhodes 85100, Greece*
- P I.63** "Nano- and micro- scale resolution in ancient Obsidian artefact surfaces: The impact of AFM on the obsidian hydration dating by SIMS-SS", **I. Liritzis<sup>1</sup>, N.Laskaris<sup>1</sup> and M. Bonini<sup>2</sup>**, <sup>1</sup> *Laboratory of Archaeometry, University of the Aegean, 1 Demokratias Ave., Rhodes 85100, Greece*, <sup>2</sup> *CSGI, Dept. of Chemistry, Room # 18, via della Lastruccia, 3, 50019 Sesto Fiorentino (FI), Italy*
- P I.64** "In-situ ellipsometric study of Ge<sup>+</sup> ion implanted SiO<sub>2</sub> layers under conditions of rapid thermal annealing", **V.A. Shvets, I.E. Tyschenko, S.I. Chikichev, & V.Yu. Prokopiev**, *Institute of Semiconductor Physics, Russian Academy of Science, Novosibirsk, 630090, Russia*
- P I.65** "Assembly and electrical investigation of tiopronin- and citrate-stabilized Au nanoparticle chains between electrodes on patterned oxidized Si substrates under the influence of an electric field", **A Zoy and A G Nassiopoulou**, *IMEI/NCSR Demokritos, P. O. Box 60 228, 153 10 Aghia Paraskevi, Athens-Greece*
- P I.66** "TEM characterization of ultra-thin nanocrystalline Si films grown on quartz and presenting quantum properties", **Ch.B. Lioutas<sup>1</sup>, N. Vouroutzis<sup>1</sup>, I. Tsiaoussis<sup>1</sup>, N.**

**Frangis<sup>1</sup> and A.G. Nassiopoulou<sup>2</sup>**, <sup>1</sup>*Solid State Physics Section, Department of Physics, Aristotle University of Thessaloniki, GR-54124 Thessaloniki, Greece,* <sup>2</sup>*IMEL/NCSR Demokritos, P.O. Box 60228, Aghia Paraskevi, Athens 15310, Greece*

- P I.67** “Evolution of photoluminescence and chemical composition of the nanostructured silicon in water solutions”, **Viktoriya Shevchenko, Volodymyr Makara, Tetyana Veblaya & Vyacheslav Kravchenko**, *Faculty of Physics, Taras Shevchenko Kiev National University, Glushkov av., 2, Kiev, Ukraine*
- P I.68** “A comparative study on the properties and structure of thermal annealed silicon-rich-oxide using different analysis techniques available within the European project ANNA (No.026134)”, **Mario Barozzi, Pierluigi Bellutti, M. Bersani, A. Picciotto, Georg Pucker, Lia Vanzetti**, *Istituto per la Ricerca Technologica e Scientifica – Fondazione Bruno Kessler, Via Sommarive 18, 38050 Povo-Trento, Italy*
- P I.69** “Advanced analytics of nanolayers and nanostructures using X-ray fluorescence methods”, **M. Kolbe, B. Beckhoff, P. Hönicke, M. Müller, B. Pollakowski, and G. Ulm**, *Physikalisch-Technische Bundesanstalt (PTB), Abbestraße 2-12, 10587 Berlin, Germany*
- P I.70** “Temperature dependent EXAFS of InN”, **M. Katsikini<sup>1</sup>, F. Pinakidou<sup>1</sup>, E. C. Paloura<sup>1</sup>, Ph. Komninou<sup>1</sup>, A. Georgakilas<sup>2,3</sup>, E. Welter<sup>4</sup>**, <sup>1</sup>*School of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece,* <sup>2</sup>*Physics Dept., University of Crete, 71003 Heraklion-Crete, Greece,* <sup>3</sup>*Microelectronics Research Group, IESL-FORTH, 71110 Heraklion-Crete, Greece,* <sup>4</sup>*HASYLAB, Notkestr. 85, 22603 Hamburg, Germany*
- P I.71** “Photomodulated Thermoreflectance Microscopy on Ion Implanted Semiconducting Materials”, **Christiana Sherifi, Maria D. Papademetriou, and Constantinos Christofides**, *Department of Physics, University of Cyprus, 1678 Nicosia, Cyprus*
- P I.72** “Structural study of ultra thin anodic silicon layers for nanoelectronic and photonic applications”, **Spiros Gardelis<sup>1</sup>, Fotini Petraki<sup>2,3</sup>, Styliani Kennou<sup>2,3</sup>, and Androula G. Nassiopoulou<sup>1</sup>**, <sup>1</sup>*IMEL/NCSR Demokritos, P.O. Box 60228, Aghia Paraskevi, 15310 Athens, Greece,* <sup>2</sup>*Department of Chemical Engineering, University of Patras, 26500 Patras, Greece,* <sup>3</sup>*ICEHT/FORTH 26500 Patras, Greece*
- P I.73** “A Comparative Evaluation of De-Embedding Methods for on-wafer RF CMOS Inductor S-parameter Measurements”, **Maria Drakaki<sup>1</sup>, Alkis A. Hatzopoulos<sup>2</sup>, & Stylianos Siskos<sup>3</sup>**, <sup>1</sup>*Department of Electronics, Alexander Technological Educational Institute of Thessaloniki, Thessaloniki, Greece,* <sup>2</sup>*Faculty of Department of Electrical and Computer Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece,* <sup>3</sup>*Faculty of Department of Physics, Electronics Laboratory, Aristotle University of Thessaloniki, Thessaloniki, Greece*
- PI.74** “Simulation of the electrical characteristics of MOS capacitors on strained-Silicon substrates”, **N. Kelaidis, D. Skarlatos & C. Tsamis**, *NCSR “Demokritos”, Institute of Microelectronics, 15310, Aghia Paraskevi, Athens, Greece*

## Poster Session II - Tuesday 18<sup>00</sup> - 21<sup>00</sup>

### Devices, Sensors and Microfluidics

- P II.1** “Compact Current Modeling of Short-Channel Multiple Gate MOSFETs”, **S. Kolberg, H. Børli, T. A. Fjeldly**, *UniK – University Graduate Center, Norwegian University of Science and Technology, Instituttveien 25, 2027 Kjeller, Norway*
- P II.2** “Macroporous silicon as bottom electrode in a high capacitance silicon microcapacitor”, **A. Sancho, F.J. Gracia**, *CEIT and TECNUN, University of Navarra (CEIT), Paseo de Manuel Lardizabal, 15, San Sebastián 20018, Spain*
- P II.3** “GAS management TROUGH MACROPOROUS - MESOPOROUS SILICON BILAYERS”, **S. Desplobain<sup>1,2</sup>, G. Gautier<sup>1</sup>, L. Ventura<sup>1</sup> and M. Roy<sup>2</sup>**, <sup>1</sup>*Université de Tours Laboratoire de Microélectronique de Puissance, LMP, 16 rue Pierre et Marie Curie, BP 7155, 37071 Tours France,* <sup>2</sup>*STMicroelectronics, 16 rue Pierre et Marie Curie, BP 7155, 37071 Tours France*

- P II.4** “Application of electrochemical impedance spectroscopy and equivalent circuit approach to the study of silicon DNA sensor”, **V.I.Ogurtsov, M. Manning**, *Tyndall National Institute, Lee Maltings, Prospect Row, Cork, Ireland*
- P II.5** “An Experimental Study of Band Gap States Electrical Properties in Poly-Si TFTs by the Analysis of the Transient Currents”, **Loukas Michalas<sup>1</sup>, Georgios J. Papaioannou<sup>1</sup>, Dimitrios N. Kouvatso<sup>2</sup>, Apostolos T. Voutsas<sup>3</sup>**, <sup>1</sup>*Solid State Section, Physics Department, National Kapodistrian University of Athens, Panepistimiopolis Zografos, 15784, Athens, Greece*, <sup>2</sup>*Institute of Microelectronics NCSR Demokritos Aghia Paraskevi, 15310, Athens, Greece*, <sup>3</sup>*LCD Process Technology Laboratory Sharp Labs of America, 5700NW, Pacific Rim Blvd, Camas, Washington, USA*
- P II.6** “Optimization of DLC- Porous Silicon Antireflection Coating Properties for Multicrystalline Silicon Solar Cells”, **K. Ait Hamouda<sup>1,2</sup>, N. Gabouze<sup>1</sup>, A. Ababou<sup>2</sup>**, <sup>1</sup>*UDTS, 02 Bd. Frantz Fanon, B.P. 140 Sept Merveilles, Algiers, Algeria*, <sup>2</sup>*USTHB, B.P. 32 El Alia, Bab Ezzouar, Algiers, Algeria*
- P II.7** “Realization of a magnetic field sensor with a porous silicon based structure for gas detection”, **Y. OUADAH\*, G. FORTAS, N. CHIBOUB, H. CHERAGA, N. GABOUZE**, *UDTS, 02 Bd. Frantz Fanon, BP 140, Alger-7 merveilles 16200 Algeria*
- P II.8** “Ideality factor dependence of leakage current and reverse current noise of Au/n-GaAs Schottky diodes with embedded self-assembled InAs quantum dots”, **N. Arpatzani<sup>1</sup>, C. A. Dimitriadis<sup>1</sup>, C. Charitidis<sup>2</sup>, J. D. Song<sup>3</sup>, W. J. Choi<sup>3</sup> and J. I. Lee<sup>3</sup>**, <sup>1</sup>*Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki Greece*, <sup>2</sup>*School of Chemical Engineering, National Technical University of Athens, 15780 Athens, Greece*, <sup>3</sup>*Nano Device Research Center, Korea Institute of Science and Technology, Seoul 136-791, Korea*
- P II.9** “Charge trapping phenomena in high-efficiency metal-oxide-silicon light-emitting diodes with Tb ion implanted oxide”, **Nazarov A.<sup>1,3</sup>, Osiyuk I.<sup>1,3</sup>, Tyagulskii I.<sup>1</sup>, Lysenko V.<sup>1</sup>, Prucnal S.<sup>2</sup>, Sun J.<sup>3</sup>, Yankov R.<sup>3</sup>, Skorupa W.<sup>3</sup>**, <sup>1</sup>*Lashkaryov Institute of Semiconductor Physics, NASU, 41, pr. Nauky, 03028 Kiev, Ukraine*, <sup>2</sup>*Maria Curie – Sklodowska University, Pl. M. Curie –Skłodowska 1, 20-031 Lublin, Poland*, <sup>3</sup>*Institute of Ion Beam Physics and Materials Research, Forschungszentrum Rossendorf e.V., POB 510119, D-01314 Dresden, Germany*
- P II.10** “Modified MIS-structure based on nanoporous silicon with enhanced sensitivity to hydrogen containing gases”, **T.I. Gorbanyuk, A.A. Evtukh, V.G. Litovchenko, V.S. Solntsev, V.E. Lashkaryov** *Institute of Semiconductor Physics, National Academy of Science of Ukraine Kiev 03028, Prospect Nauki 41, UKRAINE*
- P II.11** “Spin-Transfer Torque in Double-Barrier Magnetic Tunnel Junctions”, **Ioannis Theodonis<sup>1</sup>, Alan Kalitsov<sup>2</sup>, Nicholas Kioussis<sup>3</sup>**, <sup>1</sup>*Department of Physics, National Technical University Athens, Zografou Campus 15780, Greece*, <sup>2</sup>*Department of Physics, California State University Northridge, CA 91330-8268, USA*, <sup>3</sup>*Theoretische Physik, Universität Kassel, Heinrich-Plett-Strasse 40, 34132 Kassel, Germany*
- P II.12** “Current transport mechanisms for n-InSe/p-CdTe heterojunctions”, **P.N. Gorley<sup>1</sup>, Z.M. Grushka<sup>1</sup>, O.G. Grushka<sup>1</sup>, O.A. Chervinsky<sup>1</sup>, P.P. Horley<sup>1</sup>, Yu. V. Vorobiev<sup>2</sup>, and J. González-Hernández<sup>3</sup>**, <sup>1</sup>*Yuri Fedkovych Chernivtsi National University, 58012 Chernivtsi, Ukraine*, <sup>2</sup>*CINVESTAV-IPN, Unidad Querétaro 76230, México*, <sup>3</sup>*CIMAV, Miguel de Cervantes 120, Chihuahua, México*
- P II.13** “The Study of ESD Induced Defects in Grounded Gate NMOS Using Low Frequency Noise Measurements”, **J. Hadzi-Vukovic, M. Jevtic<sup>1</sup>, M. Glavanovics<sup>2</sup>, H. Rothleitner**, *Infineon, Siemensstrasse 2, 9500 Villach, Austria*, <sup>1</sup>*Institute of Physics, Pregrevica 118,11080 Belgrade, Serbia*, <sup>2</sup>*Kompetenzzentrum Automobil und Industrieelektronik, Europastraße 8, 9524 Villach, Austria*
- P II.14** “Readout integrated circuit for x-ray imaging with cdte pixel sensors”, **Charalambos Lambropoulos<sup>1</sup>, Emmanouel Zervakis<sup>1</sup>, Dimitris Loukas<sup>2</sup>**, <sup>1</sup>*Technological Educational Institute of Halkis*, <sup>2</sup>*Institute of Nuclear Physics, NCSR Demokritos*
- P II.15** “p-SrCu2O2/n-Si diodes grown by pulsed laser deposition”, **E.L. Papadopoulou<sup>1,2,\*</sup>, D. Louloudakis<sup>3</sup>, M. Varda<sup>3</sup>, M. Kayambaki<sup>1</sup>, M. Androulidaki<sup>1</sup>, G. Huyberechts<sup>5</sup>, and E. Aperathitis<sup>1</sup>**, <sup>1</sup>*Institute of Electronic Structure & Laser, Foundation for Research and Technology –Hellas, P.O. Box 1527, Heraklion 71110, Crete, Greece*, <sup>2</sup>*Materials Science & Technology Department, University of Crete, P.O. Box 2208,*

71003 Heraklion, Crete, Greece, <sup>3</sup>Physics Department, University of Crete, P.O. Box 2208, 71003 Heraklion, Crete, Greece, <sup>4</sup>Umicore Group Research & Development Kasteelstraat 7 B-2250 Olen Belgium

- P II.16** "Investigation of top gate electrode variations for high-k gate dielectric MOS capacitors", **D.C. Moschou<sup>1</sup>, E. Verelli<sup>2</sup>, D.N. Kouvatsos<sup>1</sup>, P. Normand<sup>1</sup>, D. Tsoukalas<sup>2</sup>, A. Speliotis<sup>3</sup>, P. Bayiati<sup>1</sup>, D Niarchos<sup>3</sup>**, <sup>1</sup>Institute of Microelectronics, NCSR Demokritos, 15310 Agia Paraskevi, Greece, <sup>2</sup>National Technical University of Athens, School of Applied Sciences, 15780 Zografou, Greece, <sup>3</sup>Institute of Materials Science, NCSR Demokritos, 15310 Agia Paraskevi, Greece
- P II.17** "The effect of crystallization technology and gate insulator deposition method on the performance and reliability of polysilicon TFTs", **Despina C. Moschou<sup>1</sup>, Giannis P. Kontogiannopoulos<sup>1</sup>, Dimitrios N. Kouvatsos<sup>1</sup> and Apostolos T. Voutsas<sup>2</sup>**, <sup>1</sup>Institute of Microelectronics, NCSR Demokritos, Patriarchou Grigoriou Str., Aghia Paraskevi 15310, Greece, <sup>2</sup>LCD Process Technology Laboratory, Sharp Labs of America, 5700 NW Pacific Rim Boulevard, Camas, Washington 98607, USA
- P II.18** "Development of InN based heterostructures and nanostructures", **E. Iliopoulos<sup>1</sup>, E. Dimakis, K. Tsagaraki, and A. Georgakilas**, *Microelectronics Research Group, Institute of Electronic Structure and Lasers, Foundation for Research and Technology-Hellas, P.O.Box 1527, 71110 Heraklion-Crete, Greece; and Physics Department, University of Crete, Heraklion-Crete, Greece*
- P II.19** "Non-Melt Laser annealing of Plasma Implanted Boron for ultra-shallow junctions in Silicon", **A. Florakis<sup>1\*</sup>, N. Misra<sup>2</sup>, C. Grigoropoulos<sup>2</sup>, D. Tsoukalas<sup>1</sup>, K. Giannakopoulos<sup>3</sup>, A. Halimaoui<sup>4</sup>**, <sup>1</sup> Department of Applied Physics National Technical University of Athens, 9 Heroon Polytechniou Str.,15780 Zographou, Greece, <sup>2</sup> Department of Mechanical Engineering, University of California Berkeley, 6177 Etcheverry Hall CA 94720-1740, <sup>3</sup> Institute of Materials Science, NCSR Demokritos, 15310 Aghia Paraskevi, Greece, <sup>4</sup> ST Microelectronics, 850 rue Jean Monnet, 38926 Crolles cedex, France
- P II.20** "RF MEMS Dielectric Charging Effect Estimation due to 1MeV  $\gamma$ -Ray Photons Irradiation", **V G Theonas<sup>1\*</sup>, G J Papaioannou<sup>1</sup>, G Konstantinidis<sup>2</sup> & J Papapolumerou<sup>3</sup>**, <sup>1</sup> Solid State Physics Section, Physics Dept. , N.K.U.A, Panepistimiopolis Zografos, 15784 Athens, Greece, <sup>2</sup>Institute of Electronic Structure and Laser, Foundation for Research and Technology – Hellas, Vassiliki Vouton, 71110 Heraklion, Crete, Greece, <sup>3</sup>School of ECE, Georgia Institute of Technology, Atlanta, GA 30332-0250, USA
- P II.21** "Concurrent Electrothermal Experimental Analysis of RF-MEMS Switches for High Microwave Power Handling", **F. Coccetti, R. Plana**, LAAS-CNRS, 7. Avenue du Colonel Roche, 31077 Toulouse Cedex 4, France
- P II.22** "Peculiarities of charge retention in nanodot NVM structures under the unipolar bias conditions", **V. Turchanikov<sup>1\*</sup>, A. Nazarov<sup>1</sup>, V. Lysenko<sup>1</sup>, V. Ievtukh<sup>1</sup>, O.Winkler<sup>2</sup>, M. Baus<sup>2</sup>, B. Spangenberg<sup>2</sup>, H. Kurz<sup>2</sup>**, <sup>1</sup>Lashkaryov Inst. Of Semicond. Physics NAS Ukraine, 03028, Kyiv 28, Prosp. Nauki 41, UKRAINE, <sup>2</sup>Institut für Halbleitertechnik, RWTH Aachen, Sommerfeldstrasse 24, 52074 Aachen, GERMANY"
- P II.23** "Performance of Thin-Film Transistors fabricated by Sequential Lateral Solidification crystallization techniques", **M.A. Exarchos<sup>1a</sup>, D.C. Moschou<sup>2a</sup>, G.J. Papaioannou<sup>1b</sup>, D.N. Kouvatsos<sup>2b</sup>, A.T. Voutsas<sup>3</sup>**, <sup>1</sup> Physics Department, National and Kapodistrian University of Athens, Athens 15784, Greece, <sup>2</sup> Institute of Microelectronics, NCSR Demokritos, Agia Paraskevi 15310, Greece, <sup>3</sup> LCD Process Technology Laboratory, Sharp Labs of America, Camas, WA 98607, USA
- P II.24** "Plasma nanostructuring of PDMS surfaces and its effect on protein adsorption", **Maria-Elena Vlachopoulou<sup>1</sup>, Panagiota Petrou<sup>2</sup>, S. Kakabakos<sup>2</sup>, A.Tserepi<sup>1</sup>, E.Gogolides<sup>1</sup>**, <sup>1</sup>Institute of Microelectronics, NCSR "Demokritos", PO Box 60228, Aghia Paraskevi, Attiki, 153 10 Greece, <sup>2</sup>Institute of Radio Isotopes and Radio Diagnostic Products, NCSR "Demokritos", PO Box 60228, Aghia Paraskevi, Attiki, 153 10 Greece
- P II.25** "Detection of CO and NO using low power Metal Oxide sensors", **R. Triantafyllopoulou,C. Tsamis**, NCSR "Demokritos", Institute of Microelectronics, 15310, Aghia Paraskevi, Athens, Greece
- P II.26** "A Comparison of Two Analogue Buffers, Implemented with Low Temperature Polysilicon Thin-Film Transistors, for Active Matrix Applications", **Ilias Pappas<sup>1</sup>,**

**Stilianos Siskos<sup>1</sup>, Gerald Ghibaudo<sup>2</sup> and Charalambos A. Dimitriadis<sup>1, 1</sup>**  
*Department of Physics, Aristotle Univ. of Thessaloniki, 54124 Thessaloniki, Greece,*  
*<sup>2</sup>Institute of Microelectronics, Electromagnetic & Photonics (IMEP-MINATEC),*  
*National Polytechnic of Grenoble, 3 Parvis Louis Neel, 38054, Grenoble, France*

- P II.27** "A fully 2-dimensional, quantum mechanical calculation of short-channel and drain induced barrier lowering effects in HEMTs", **G. Krokidis, J. P. Xanthakis, N. Uzunoglu**, *Electrical and Computer Engineering Department, National Technical University of Athens, Zografou, Athens 15780, Greece*
- P II.28** "Hydrophobic plasma-deposited fluorocarbon films as a means for biofluid transport and selective adsorption of biomolecules on lab-on-a-chip devices", **Pinelopi Bayiati<sup>1\*</sup>, Angeliki Tserepi<sup>1\*\*</sup>, Panagiota S. Petrou<sup>2</sup>, Sotirios E. Kakabakos<sup>2</sup>, Evrimahos Matrozos<sup>1</sup>, Dimitris Goustouridis<sup>1</sup>, Konstantinos Misiakos<sup>1</sup>, Evangelos Gogolides<sup>1</sup>**, *<sup>1</sup>Institute of Microelectronics-NCSR "Demokritos", POB 60228, 153 10 Aghia Paraskevi, Attiki, Greece, <sup>2</sup>Institute of Radioisotopes & Radiodiagnostic Products-NCSR "Demokritos", POB 60228, 153 10 Aghia Paraskevi, Attiki, Greece*
- P II.29** "A calculation of the current through the ZnO/ZnMgO/ZnO/ZnMgO/ZnO double barrier system", **E.I. Sfakianakis, J.P. Xanthakis**, *Faculty of Electrical and Computer Engineering, National Technical University of Athens, Zografou Campus, Athens 15773, Greece*
- P II.30** "Modeling MOSFET Gate Length Variability for Future Technology Nodes", **G. P. Patsis**, *Institute of Microelectronics, NCSR Demokritos, Athens, 15310 Greece*
- P II.31** "Flexible Organic Light Emitting Diodes (OLEDs) based on blue emitting polymers", **M. Vasilopoulou<sup>1\*</sup>, A. Botsialas<sup>1</sup>, D. Georgiadou<sup>1</sup>, L. Palilis<sup>1</sup>, P. Bayiati<sup>1</sup>, N. Vourdas<sup>1</sup>, P. S. Petrou<sup>2</sup>, G. Pistolis<sup>3</sup> and P. Argitis<sup>1</sup>**, *<sup>1</sup>Institute of Microelectronics, NCSR "Demokritos", 15310 Athens, Greece, <sup>2</sup>Immunoassay Laboratory, I/R-RP, NCSR "Demokritos", 15310 Athens, Greece, <sup>3</sup>Institute of Physical Chemistry, NCSR "Demokritos" 153 10 Athens, Greece*
- P II.32** "Design To Improve The Capacitive Contact Quality in Piezoelectric Actuation", **H.ACHKAR, D.PEYROU, F.PENNEC, M.AL AHMAD, P.PONS, R.PLANA**, *Groupe MINC, LAAS-CNRS, University of Paul Sabatier, 7 Avenue du colonel Roche 31077 Toulouse, France*
- P II.33** "SiO<sub>2</sub>(Si) films as a medium for charge storage in memory devices", **A. Evtukh, O. Bratus', T. Gorbanyuk**, *Institute of Semiconductor Physics, 41 prospext Nauki, Kyiv 03028, Ukraine*
- P II.34** "Hybrid polymer-inorganic solar cells based on polythiophene and phthalocyanine/polyoxometalate blends", **Leonidas C. Palilis<sup>1\*</sup>, Antonios M. Douvas<sup>1</sup>, Georgios Chaidogiannos<sup>1</sup>, Maria Vasilopoulou<sup>1</sup>, Nikos Glezos<sup>1</sup>, S. Nespurek<sup>3</sup>, P. Falaras<sup>2</sup>, & Panagiotis Argitis<sup>1</sup>**, *<sup>1</sup>Institute of Microelectronics, National Center for Scientific Research (NCSR) "Demokritos", 15310 Aghia Paraskevi, Athens, Greece, <sup>2</sup>Institute of Physical Chemistry, National Center for Scientific Research (NCSR) "Demokritos", 15310 Aghia Paraskevi, Athens, Greece, <sup>3</sup>Institute of Macromolecular Chemistry, AV-CR, v. v. i., 16206 Prague 6, Czech Republic*
- P II.35** "Direct laser printing of biomolecules on capacitive sensors", **C. Boutopoulos<sup>1</sup>, P. Andreakou<sup>1,2</sup>, S. Chantzandroulis<sup>3</sup>, D. Goustouridis<sup>3</sup>, I. Zergioti<sup>1</sup>, D. Kafetzopoulos<sup>2</sup> & D. Tsoukalas<sup>1</sup>**, *<sup>1</sup>National Technical University of Athens, Physics Department, Iroon Polytehneiou 9, 15780 Zografou, Athens, Greece, <sup>2</sup>Foundation for Research & Technology – Hellas, Institute of Molecular Biology and Biotechnology, P. O. Box 1527, Heraklion 71110, Greece, <sup>3</sup>NCSR Demokritos, Institute Microelectronics, Aghia Paraskevi 15310, Greece*
- P II.36** "Development of electrically-pumped microcavity lasers", **S. Tsintzos<sup>1,2</sup>, Z. Hatzopoulos<sup>2,3</sup>, P. G. Savvidis<sup>1,2</sup>, and N.T. Pelekanos<sup>1,2</sup>**, *<sup>1</sup>Materials Science and Technology Dept., Univ. of Crete, P.O. Box 2208, 71003 Heraklion, Greece, <sup>2</sup>Microelectronics Research Group, FORTH/IESL, P.O. Box 1527, 71110 Heraklion, Greece, <sup>3</sup>Physics Dept., Univ. of Crete, P.O. Box 2208, 71003 Heraklion, Greece*
- P II.37** "Room Temperature Tunable Laser Diodes Using Stark Effect Gain Tuning", **G. Deligeorgis<sup>1,2</sup>, Z. Hatzopoulos<sup>1,2</sup>, S. Tsintzos<sup>2,3</sup> and N.T. Pelekanos<sup>2,3</sup>**, *<sup>1</sup>Physics Department, University of Crete, P.O. Box 2208, 71003 Heraklion, Greece, <sup>2</sup>Microelectronics Research Group, FORTH IESL, P.O. Box 1527, 71110 Heraklion, Greece, <sup>3</sup>Materials Science and Technology Department, University of Crete, P.O.*

- P II.38** “An all-organic optocoupler based on polymer light-emitting diodes (PLEDs)”, **M. Vasilopoulou<sup>1</sup>**, **N. Stathopoulos<sup>2</sup>**, **P. Falaras<sup>3</sup>**, **G. Pistolis<sup>3</sup>**, **D. Davazoglou<sup>1</sup>** and **P. Argitis<sup>1</sup>**, <sup>1</sup>*Institute of Microelectronics, NCSR “Demokritos”, 15310 Athens, Greece,* <sup>2</sup>*Dpt. of Electronics, Technological and Educational Institute of Pireaus, Aegaleo, 12244 Greece,* <sup>3</sup>*Institute of Physical Chemistry, NCSR “Demokritos” 153 10 Athens, Greece*
- P II.38<sup>A</sup>** “Photoresist material and process optimization for the patterning of biomolecules on functionalized surfaces”, **P. Pavli<sup>1,3</sup>**, **M. Chatzichristidi<sup>1</sup>**, **A. M. Douvas<sup>1</sup>**, **P. S. Petrou<sup>2</sup>**, **S.E. Kakabakos<sup>2</sup>**, **D. Dimotikali<sup>3</sup>**, **P. Argitis<sup>1\*</sup>**, <sup>1</sup>*Institute of Microelectronics, NCSR “Demokritos”, 15310 Athens, Greece,* <sup>2</sup>*Immunoassay-Immunoassay Laboratory, I/R-RP, NCSR “Demokritos”, 15310 Athens, Greece,* <sup>3</sup>*Department of Chemical Engineering, National Technical University of Athens, 15780 Athens, Greece*

## Micro&Nano fabrication

- P II.39** “Colloidal lithography: comparison between thermal evaporation and RF sputtering”, **Ulmeanu M.**, **Filipescu M.**, **Medianu R.**, *National Institute for Laser, Plasma and Radiation Physics, Laser Department, 077125 Magurele, Romania*
- P II.40** “Dewetting of thin polymer films controlled by a simple energetic criterion”, **I. Karapanagiotis**, *Ormylia Foundation, Ormylia Chalkidiki, 63700, Greece*
- P II.41** “Oxygen Plasma Development of Silylated Epoxydized photoresists for Micromachining Applications”, **D.Kontziampasis**, **E. Gogolides**, *Institute of Microelectronics, National Centre for Scientific Research, NCSR “Demokritos”, P.O. Box 60228, Aghia Paraskevi, Attiki, Greece 15310*
- P II.42** “VUV laser circular microstructured surface relief gratings induced on ptfema surface”, **E. Sarantopoulou<sup>1</sup>**, **Z. Kollia<sup>1</sup>**, **A. C. Cefalas<sup>1</sup>**, **A. M. Douvas<sup>2</sup>**, **M. Chatzichristidi<sup>2</sup>**, **P. Argitis<sup>2</sup>**, <sup>1</sup>*National Hellenic Research Foundation. Theoretical and Physical Chemistry Institute, 48 Vassileos Constantinou Avenue, Athens 11635 Greece,* <sup>2</sup>*Institute of Microelectronics, NCSR Demokritos, 15310 Agia Paraskevi, Greece*
- P II.43** “The nanoscience of the alloy liquid metal ion sources and application in focused ion beams”, **T. Ganetsos**, *T.E.I. of Lamia, Department of Electronics, 3rd Lm O.N.R. Lamia-Athens, Lamia, Greece*
- P II.44** “Dependence of the curvature of Si/Ge cantilevers on the size, composition, temperature”, **N. Skoulidis<sup>\*</sup>**, **H.M. Polatoglou**, *Aristotle University of Thessaloniki, Greece*
- P II.45** “Electron Beam Lithography Simulation Algorithm over Multilayer Substrates”, **N. Tsirikas**, **G. P. Patsis**, **I. Raptis**, *Institute of Microelectronics, NCSR Demokritos, Athens, 15310 Greece*
- P II.46** “Evaluation of polymers containing ketal or acetal groups in the backbone as candidate photoresist components”, **T. Manouras<sup>1</sup>**, **A. M. Douvas<sup>1</sup>**, **V.P. Vidali<sup>2</sup>**, **M. Chatzichristidi<sup>1</sup>**, **N. Vourdas<sup>1</sup>**, **E. Gogolides<sup>1</sup>**, **E.A. Couladouros<sup>2</sup>**, **P. Argitis<sup>1</sup>**, *Institute of Microelectronics, NCSR “Demokritos”, 15310 Athens, Greece,* <sup>2</sup>*Institute of Physical Chemistry, NCSR “Demokritos” 153 10 Athens, Greece*
- P II.47** “Photoresist models for stochastic lithography”, **Dimitrios Drygiannakis<sup>1</sup>**, **George P. Patsis<sup>1</sup>**, **Ioannis Raptis<sup>1</sup>**, *Institute of Microelectronics, NCSR Demokritos, Athens, 15310 Greece*

## Design, Integration, Systems, Photonics

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Tours France 37071, <sup>2</sup>ST Microelectronics, 16 rue Pierre et Marie Curie, 37071 Tours Cedex 2, France

- P II.49** “SECS: A novel system for the design and simulation of single electron circuits”, **G. T. Zardalidis**, Faculty of Electrical and Computer Engineering, Democritus University of Thrace, Vas. Sofias 12, Greece
- P II.50** “Alpha Particle Radiation Effects in RF-MEMS Switches”, **E. Papandreou<sup>1</sup>, F. Giacomozi<sup>2</sup>, G. J. Papaioannou<sup>1</sup> and B. Margesin<sup>2</sup>**, <sup>1</sup>National Kapodistrian Univ. of Athens, Solid State Physics Section of Physics Dpt., Panepistimiopolis Zografos, Athens 15784, Greece, <sup>2</sup>ITC-irst, Via Sommarive 18, 38050 Povo Trento, Italy
- P II.51** “MEANDER: A CAD Tool Framework for Designing 2D/3D FPGAs”, **K. Siozios, K. Sotiriadis, D. Soudris**, Electrical and Computer Engineering, Democritus University of Thrace, Vas. Sofias 12, Greece
- P II.52** “Studying compatibilities between quantum cellular automata and Kane’s semiconductor based quantum computer”, **D. Ntalaperas<sup>(1,2)</sup> and N. Konofaos<sup>(1,3)</sup>**, <sup>(1)</sup> Computer Engineering and Informatics Dept., University of Patras, Greece, <sup>(2)</sup> Research Academic Computer Technology Institute, Patras, Greece, <sup>(3)</sup> Department of Information and Communication Systems Engineering, University of the Aegean, Karlovassi, Samos, Greece
- P II.53** “QDIP technology and market prospects in the sectors of Defense, Environment, and Security”, **C. Charitidis<sup>1</sup>, A. Golnas<sup>1,2</sup>, F. Choularas<sup>1</sup>, N. Arpatzani<sup>3</sup>, C. A. Dimitriadis<sup>3</sup>, J. I. Lee<sup>4</sup>, C. Bakolias<sup>5</sup>**, <sup>1</sup>School of Chemical Engineering, National Technical University of Athens, 15780 Athens, Greece, 1140 Pinemont Place, Annapolis, MD21403, USA, <sup>3</sup>Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, <sup>4</sup>Nano Device Research Center, Korea Institute of Science and Technology, Seoul 136-791, Korea, <sup>5</sup>ZENON S.A., Kanari 5 Glyka Nera, 15354
- P II.54** “A thermal vacuum detector fabricated by a combination of MEMS and PCB technologies”, **A. Petropoulos, G. Kaltsas, A. G. Nassiopoulou**, Institute of Microelectronics, NCSR-“Demokritos”, Athens, GREECE
- P II.55** “Fabrication and evaluation of a gas flow sensor, implemented on organic substrates by a novel integration technology”, **A. Petropoulos, G. Kaltsas, A. G. Nassiopoulou**, Institute of Microelectronics, NCSR-“Demokritos”, Athens, GREECE
- P II.56** “Copper Wires in Macroporous Si Template for Microchannel Heat Sink Technology”, **F. Zacharatos, A. G. Nassiopoulou**, IMEL/NCSR Demokritos, P.O. Box 60228, 15310 Athens, Greece
- P II.57** “Design and simulation of a CMUT array”, **V. G. Chouvardas, M.K. Hatalis**, Department of Informatics, Aristotle University of Thessaloniki, GR-54124 Thessaloniki, Greece
- P II.58** “Design and simulation of a Micro-Mixer, based on MLG T-Flip-Flops and AC Electro-Osmosis”, **T. Tsenis, V. G. Chouvardas, M.K. Hatalis**, Department of Informatics, Aristotle University of Thessaloniki, GR-54124 Thessaloniki, Greece
- P II.59** “Dielectric Characterization of Macroporous Silicon Thick Layers For Use As Capacitors In High Voltage Application”, **M. Theodoropoulou<sup>1</sup>, D. N. Pagonis<sup>1</sup>, A. G. Nassiopoulou<sup>1</sup>, C. A. Krontiras<sup>2</sup> and S. N. Georga<sup>2</sup>**, <sup>1</sup>IMEL/NCSR Demokritos, Terma Patriarhou Grigoriou, Aghia Paraskevi, 15310 Athens, Greece, <sup>2</sup>Department of Physics, University of Patras, Patras 26504, Greece
- P II.60** “Flexible WO<sub>3</sub> based electrochromic displays using proton conducting solid electrolytes”, **M. Vasilopoulou<sup>1</sup>, P. Argitis, G. Aspiotis, G. Papadimitropoulos, D. Davazoglou**, Institute of Microelectronics, NCSR “Demokritos”, Ag. Paraskevi, Athens, GR-15310, Greece
- P II.61** “A real time development of an automatic fingerprint identification system using the AFS860 sensor and the C6713 DSP processor”, **C. Tselios, E. N. Zois, N. A. Livanos and A. Nassiopoulos**, Research and Development Telecommunications Laboratory, Electronics Eng. Dept., Technological and Educational Institution of Athens, Ag Spiridonos and Palikaridou, 12210, Aegaleo, Greece
- P II.62** “Energy Dissipation of Hot Electrons via Emission of Stretching Phonons in Semiconducting Carbon Nanotubes”, **Margarita Tsaousidou**, Materials Science Department, University of Patras, Patras 26 504, Greece



