IEEE NANO 2009

TUESDAY, JULY 28

8.00-20.00 Registration

8.15 Opening

8.45-10.30 PLENARY SESSION

8.45 **Plenary lecture: Photonic crystals and nanophotonics** S. Noda (*Kyoto University, Japan*)

9.45 **Plenary lecture: Nanomaterials and devices for optoelectronics and photovoltaic applications** Salvatore Coffa (*STM Catani, Italy*)

10.45-11.15 Coffee break

11.15-12.45 SESSION TU1_1: Invited Session on Nanopackaging: State of the Art

11.15-11.45 **Invited talk: Nanomaterials and composites for electronic and photo Packaging** C.P. Wong (*Georgia Institute of Technology, USA*)

11.45-12.15 **Invited talk: Low temperature wiring with Ag inks**
Katsuaki Suganuma (*Osaka University, Japan*)

12.15-12.45 **Invited talk: Carbon Nanotubes as Cooling Fins in Microelectronic Systems** Johan Liu (*Chalmers University, Sweden*)

11.15-12.45 SESSION TU1_2: Characterization of Nanomaterials

11.15-11.30 **A platform for transport and thermodynamic property measurements of a conductive nanowire** Min-Nan Ou, Cheng-Lung Chen, Ping-Chung Lee, Yann-Wen Lan, Chii-Dong Chen and Yang-Yuan Chen *(Academia Sinica, Taipei, Taiwan)*

11.30-11.45 **High Performance Mid-infrared Narrow-band Cavity Thermal Emitters** Yi-Ting Wu, Yi-Tsung Chang, Yu-Wei Jiang, Pei-En Chang, Shang Ru Tsai, Lawrence Dah-Ching Tzuang, Hung-hsin Chen, Yi-Han Ye, Hao-Fu Huang and Si-Chen Lee *(National Taiwan University, Taipei, Taiwan)*

11.45-12.00 **Enhanced Force Measurement Techniques to Extend Optical Trapping towards Nanoscale Manipulation** Arvind Balijepalli, Thomas W. LeBrun,

Jason J. Gorman and Satyandra K. Gupta (*National Institute of Standards and Technology NIST and the University of Maryland UMD, USA)*

12.00-12.15 **Electrical and composition studies on the Transformation of GeSi Quantum Dots to Quantum Rings** S L Zhang, F Xue, R Wu, J Cui, Z M Jiang, X J Yang (*Fudan University, Shanghai, China*)

12.15-12.30 **Interaction of thiols with cluster-assembled nanoporous gold films under liquid environment** F. Bisio, M. Palombo, M. Prato, O. Cavalleri, L. Mattera, M. Canepa (*CNR-INFM Lamia, CNISM, University of Genoa, Italy*)

12.30-12.45 **Topography-Assisted Self-Organization of Gold Nanoparticles Using As-Deposited Fully Extended Highly Oriented PTFE Templates** Chandramohan George, Davide Ricci, Ermanno Di Zitti, S. Cincotti (*University of Genoa, Italy*)

11.15-12.45 SESSION TU1_3: Carbon Nanoelectronics I

11.15-11.45 **Invited talk: SPM studies of edge states in graphene nanoribbons** Joseph Lyding (*University of Illinois, Urbana, USA*)

11.45-12.00 **Intrinsic Mobility Limit in Graphene at Room Temperature** R. S. Shishir, D. K. Ferry, S. M. Goodnick (*Arizona State University, Tempe, AZ , USA*)

12.00-12.15 **Model of 1D Schottky Barrier Transistors Operating Far From Equilibrium** Paolo Michetti and Giuseppe Iannaccone (*University of Pisa, Italy*)

12.15-12:30 **Highly Flexible and Biocompatible Carbon Nanotube Thin Film Transistor** Selvapraba Selvarasah, Kyle Anstey, Somu Sivasubramanian, Ahmed Busnaina, Mehmet R. Dokmeci (*Northeastern University, Boston, MA, USA*)

12.30-12.45 **The Integration of SWNTs with CMOS IC** Jung-Tang Huang, Po-Chin Lin, Hom-Wi Chao, Kai-Yuan Jenq, Hou-Jun Hsu, Ting-Chiang Tsai (*National Taipei University of Technology, Taiwan)*

11.15-12.45 SESSION TU1_4: Nanoplasmonics and Optics

11.30-11.45 **Direct observation of enhanced cathodoluminescence (CL) emissions from ZnO nanocones via chemical etching process of patterned ZnO nanowire arrays** Ee-le Shim, Joonho Bae, C. J. Kang,Y. J. Choi (*MyongJi University, Yongin, Korea; Georgia Institute of Technology, Atlanta, USA*)

11.45-12.15 **Invited talk: Aperiodic Nanoplasmonics** Luca Dal Negro (*Boston University, USA*)

12.15-12.30 **Intensity Dependence of (1,0) and (1,1) Ag/SiO_2 Surface Plasmons in Ag/SiO_2/Ag Plasmonic Thermal Emitter on Energy Distribution of a Graybody Emitter** Yi-Tsung Chang, Yi-Ting Wu, Jeng-Han Lee, Chia-Ming Liang, Chao-Ju Huang Si-Chen Lee (*National Taiwan University, Taipei, Taiwan*)

12.30-12.45 **Holography in the Extreme Ultraviolet Region: a New Fabrication Technique for High Resolution Fresnel Zone Plates** Sankha Subhra Sarkar, Menouer Saidani, Harun Solak, Christian David, Johannes Friso van der Veen (*Paul Scherrer Institut, Villigen, Switzerland*)

12.45-2.15 Lunch break

2.15-3.45 SESSION TU2_1: CNTs for Electrical Interconnects

2.15-2.30 **Flip Chip Assembly Using Carbon Nanotube Bumps and Anisotropic Conductive Adhesive Film** Xia Zhang, Teng Wang and Johan Liu (*Nanoscience Chalmers University of Technology, Sweden*)

2.30-2.45 **A Generalized Model for the Signal Propagation along Single- and Multi-Walled Carbon Nanotubes with Arbitrary Chirality** Carlo Forestiere, Antonio Maffucci and Giovanni Miano (*DAEIMI, Università di Cassino, Italy*)

2.45-3.00 **Impact of Physical Parameters on Time-Delay Performances of CNT-based Interconnects** Patrizia Lamberti, Maria Sabrina Sarto, Alessio Tamburrano, and Vincenzo Tucci (*University of Salerno, Italy*)

3.00-3.15 **Carbon Nanotube Bundles as Nanoscale Chip to Package Interconnects** Andrea G. Chiariello, Antonio Maffucci (*DAEIMI, Università di Cassino,Italy*)

3.15-3.30 **Equivalent Effective p.u.l. Parameters for Reduced Order Circuit of SWCNT Bundle Interconnects** Maria Sabrina Sarto, Alessio Tamburrano, and Alessandro D'Aloia *(La Sapienza University of Rome, Rome, Italy)*

3.30-3.45 **Performance Analysis of CNT-based interconnects** Luigi Egiziano, Alessandro Giustiniani, Vincenzo Tucci, Walter Zamboni (*University of Salerno, Italy*)

2.15-3.45 SESSION TU2_2: Scanning Probe Studies of Nanomaterials

2.15-2.45 **Invited talk: Chemically tailored carbon-based nanoelectronic materials and devices** Mark Hersam (*Northwestern University, USA*)

2.45-3.15 **Invited talk: Novel Scanning Probe Concepts for Nanoscale Electrical Characterization** Abu Sebastian, Harish Bhaskaran, Andrew Pauza, Michel Despont, and Haris Pozidi (*IBM Zurich, Switzerland*)

3.15-3.30 **Scanning Tunneling Microscopy and Spectroscopy Studies of Nanometer-sized Graphene on the Si(111)-7x7 Surface** Justin C. Koepke, Joshua D. Wood, Yang Xu, Narayana R. Aluru, and Joseph W. Lyding (*University of Illinois at Urbana-Champaign, USA*)

3.30-3.45 **Atomic-scale Studies of Nanometer-sized Graphene on GaAs (110) and InAs (110) Surfaces using Scanning Tunneling Microscopy** Kevin T. He, Justin C. Koepke, Salvador Barraza-Lopez, and Joseph W. Lyding (*University of Illinois at Urbana-Champaign, USA*)

2.15-3.45 SESSION TU2_3: Carbon Nanoelectronics II

2.15-2.30 **Equivalent Single Conductor for Modeling Near Field Radiated Emission of Carbon Nanotube Bundles** Marcello D'Amore, Maria Sabrina Sarto, Alessandro D'Aloia (*CNIS, La Sapienza University of Rome, Italy*)

2.30-2.45 **Local Density of States and Electronic Transport Properties of Homotype SWCNTS Bundles** Antonio Serra, Daniela Manno, Emanuela Filippo, Maria Letizia Terranova, Silvia Orlanducci, and Marco Rossi (*University of Salento, Italy*)

2.45-3.00 **Silicon based nanogap device for investigating electronic transport through 12 nm long oligomers** Sebastian Strobel, Roar Søndergaard, Edgar Albert, Eva Bundgaard, Kion Norrman, Allan G. Hansen, Gyorgy Csaba, Paolo Lugli, , Frederik C. Krebs, Marc Tornow (*Technische Universität München, Garching, Germany*)

3.00-3.15 **Photoresponse of Fullerene and Azafullerene Peapod Field Effect Transistors** Rikizo Hatakeyama, Yongfeng Li, and Toshiro Kaneko *(Tohoku University, Japan)*

3.15-3.30 **Thiophene-based material for non volatile organic memory devices: a combined experimental and theoretical study** E.V. Canesi, D. Fazzi, C. Bertarelli, C. Castiglioni, D. Natali and G. Zerbi *(Politecnico di Milano, Italy)*

3.30-3.45 **Temperature dependence of I-V characteristics of C60 molecule** Elham Mozafari, Seyed Ahmad Ketabi, and Nasser Shahtahmasebi (*Ferdowsi University of Mashhad, Mashhad, Iran*)

2.15-3.45 SESSION TU2_4: Nanofabrication and Photonics

2.15-2.30 **Functionalized Phononic Bandgap Nanocrystal Composed of 3D Ordered Quantum Dots for the Manipulation of THz Acoustic Waves** Yu-Chieh Wen, Tzu-Ming Liu, Christian Dais, Detlev Grützmacher, Tzung-Te Chen, Yang-Fang Chen, Jin-Wei Shi, and Chi-Kuang Sun (*National Taiwan University, Taipei, Taiwan*)

2.30-2.45 **Active Tera Hertz (THz) Spoof Surface Plasmon Polariton (SSPP) Switch Comprising the perfect Conductor Meta-Material** Kyungjun Song and Pinaki Mazumder (*University of Michigan, USA*)

2.45-3.00 **Light Extraction Enhancement by Fabrication of Sub-micron Structures on GaN-based LEDs** Yeeu-Chang Lee, Sheng-Han Tu, Ming-Jheng Ciou, Cing-Huai Ni, Jenq-Yang Chang, Jean-Shen Huang, Yu-Chieh Huang, Kuo-Chen Wu, Shih-Wen Chung, Wei-Kai Wang and Chi-Shen Lee (*Chung Yuan Christian University, Taiwan*)

3.00-3.15 **Hydrothermal Synthesis of Amorphous SiO_2 Nanoblades and their Photoluminescence Properties** Yung-Chiun Her and Chien-Lung Lai (*National Chung Hsing University, Taiwan*)

3.15-3.30 **Design and Fabrication of Sub-Wavelength Structure on Silicon Nitride for Solar Cells** Kartika Chandra Sahoo, Men-Ku Lin, Edward Yi Chang, Yiming Li, Yi-

Yao Lu, and Jin-Hua Huang (*National Chiao-Tung University, Hsinchu, Taiwan; National Hsing-Hua University, Hsinchu, Taiwan; National Chiao-Tung University, Hsinchu, Taiwan. National Nano Device Laboratories, Hsinchu, Taiwan*.)

3.30-3.45 **Self-organised ion beam synthesis of metallo-dielectric plasmonic nanostructures** Andrea Toma, Daniele Chiappe, Dario Massabò, Corrado Boragno and Francesco Buatier de Mongeot (*University of Genoa, Italy*)

3.45-4.15 Coffee break

4.15-6.00 SESSION TU3_1: Nanomanufacturing Challenges

4.15-4.45 **Invited talk: On-chip Robotics for Biomedical Innovation: Manipulation of single virus on a chip** Fumihito Arai (*Tohoku University, Japan*)

4.45-5.00 **Manufacturing and Associated Challenges for Nanoscale Computational Systems** Pritish Narayanan, Kyoung-Won Park, Teng Wang, Michael Leuchtenburg, Chi On Chui, and C. Andras Moritz (*University of Massachusetts, Amherst, USA*)

5.00-5.15 **Polymer assisted dispersion and alignment of carbon nanotubes** Xu-Ming Xie, Zhi-Ling Zhang, Yi-Tao Liu, Qing-Ping Feng, Wei Zhao and Xiong-Ying Ye (*Tsinghua University Beijing, China*)

5.15-5.30 **Heating-Assisted for Ultrasonic Nanoimprint Lithography** Chien Hung Lin, Chih Yu Wang, and Rongshun Chen (*Chinese Culture University, Taiwan*)

5.30-5.45 **Fiber-based transistors for e-textiles** Giorgio Mattana, Piero Cosseddu, Annalisa Bonfiglio (*University of Cagliari, Italy*)

4.15-6.00 SESSION TU3_2: Nanobiomedicine: Micro and Nano Arrays

4.15-4.30 **pH-Triggered Release of Paclitaxel from Nanoengineered Polymeric Capsules** Laura Pastorino, Svetlana Erokhina, Federico Caneva Soumetz and Carmelina Ruggiero (*University of Genoa, Italy*)

4.30-4.45 **Specific detection of pathogenic bacteria using bacteriophage tail spike protein as molecular probe** Amit Singh, Sunil Arya, N. Glass, R. Naidoo, S. Dutt, J. Tanha, C. Szymanski and S. Evoy (*University of Alberta, Edmonton, Canada*)

4.45-5.15 **Invited talk: New Strategy for Next Generation of DNA sequencing** Zuhong Lu (*Nanjing Southeast University, China*)

5.15-5.30 **Synthesis and characterization of bifunctional nano gene vector** Zhaoqiang Li, Kai Zhang, Leiying Miao, Junhu Zhang, Hongchen Sun, Bai Yang (*Jilin University, Changchun, P. R. China*)

5.30-5.45 **SPR detection improvement by nanoarrays** Patrícia Lisboa, Andrea Valsesia, Ilaria Mannelli, Pascal Colpo, François Rossi (*JRC-European Commission, IHCP, NMI, Ispra (VA) Italy*)

5.45-6.00 **Characterization of Avian Influenza Virus Subtypes using Atomic Force Microscopy** Husein Rokadia, Balaji Srinivasan and Steve Tung (*University of Arkansas, Fayetteville, AR, USA*)

4.15-6.00 SESSION TU3_3: Nanomaterials I

4.15-4.30 **Beads, Boats and Switches - Making things happen with Ionic Liquids and Molecular Photoswitches** Robert Byrne, Fernando Lopez and Dermot Diamond (*Dublin City University, Dublin, Ireland.*)

4.30-4.45 **Optical Response Time for Carbon Nanotube Based Infrared Detectors** King Wai Chiu Lai, Ning Xi, Carmen Kar Man Fung, Hongzhi Chen (*Michigan State University, College of Engineering, USA*)

4.45-5.00 **Organic-inorganic nanocomposite micro-spheres: synthesis and characterization** B. Guilhabert, N. Laurand, A.L. Kanibolotsky, E. Gu, P.J. Skabara and M.D. Dawson (*University of Strathclyde in Glasgow, UK*)

5:00-5.30 **Invited talk: Epitaxial graphene on metal surfaces** Carsten Busse (*II. Physikalisches Institute, University Cologne, Germany*)

5:30-6:00 **Invited talk: Organic semiconductors nanostructures via scanning probes patterning** Franco Cacialli, Oliver Fenwick, Dan Credgington, Azzedine Hammiche, Laurent Bozec (*University College London, UK*)

4.15-6.00 SESSION TU3_4: Nanowire Fabrication

4.15-4.30 **Fabrication of Memristors with Poly-Crystalline Silicon Nanowires** M. Haykel Ben Jamaa, Sandro Carrara, Julius Georgiou, Nikolaos Archontas, and Giovanni De Micheli (*Swiss Federal Institute of Technology EPFL, Lausanne, Switzerland*)

4.30-4.45 **Preparation and Properties of Electrospun Gallium Nitride Nanofibers** Anamaris Meléndez, Kristle Morales, Idalia Ramos, Eva Campo and Jorge J. Santiago-Avilés (*University of Puerto Rico at Humacao, Puerto Rico*)

4.45-5.00 **III-V Compound Semiconductor Nanowires** S. Paiman, H. J. Joyce, J.H. Kang, Q. Gao, H.H. Tan, Y. Kim, X. Zhang, J. Zou and C. Jagadish (*Dong-A University, Hadan-2-dong, Sahagu, Busan 604-714, Korea.The University of Queensland, Brisbane, Australia. The Australian National University, Canberra, Australia*)

5.00-5.15 **Growth of segmented gold nanorods with nanogaps by electrochemical wet etching technique** Sanjeev Kumar, Nguyen Van Hoang, and Gil-Ho Kim (*Sungkyunkwan University, Suwon, Korea*)

5.15-5.30 **Field emission behaviour of nickel nanowires grown by electrochemical deposition** Francesca Brunetti , Giacomo Ulisse, Claudio Ciceroni, Emanuela Tamburri, Maria Letizia Terranova and Aldo Di Carlo (*University of Rome "Tor Vergata",Rome, Italy*)

5.30-5.45 **High Purity Platinum Nanowire Growth via Field Emission** Zhan Yang, Masahiro Nakajima, Yahachi Saito and Toshio Fukuda (*Nagoya University, Nagoya, Japan*)

6.00-7.15 POSTER SESSION I

NANOCHARACTERIZATION

Thin Film Characterization using High Frequency Eddy Current Spectroscopy Henning Heuer, Susanne Hillmann, Mike Roellig, Martin H. Schulze and K-.J. Wolter (*Fraunhofer Institute for Non-Destructive Testing, Germany*)

Characterization of different additives for use in Cu electrochemical mechanical planarization Paula Cojocaru, Luca Magagnin (*Politecnico di Milano, Italy*)

Plasmonic Thermal Emitters with Top Metal Perforated by Hole Array Arranged in Rhombus Lattice Yi-Ting Wu, Lawrence Dah-Ching Tzuang, Yi-Tsung Chang, Yu-Wei Jiang, Pei-En Chang, Hung-hsin Chen, Yi-Han Ye, Hao-Fu Huang and Si-Chen Lee (*National Taiwan University, Taipei, Taiwan*)

Formation, Rolling, and Agglomeration of a Co Seed Droplet in Patterned Inverted Silicon Nano-Pyramid C. C. Chen, Lun-Hao Hsu, and Y. T. Cheng (*National Chiao Tung University, Hsinchu, Taiwan*)

Planarization of ZnO nanowire arrays by using electropolishing method Mee Na Park, Ee-Le Shim, Joonho Bae, C. J. Kang, and Y. J. Choi (*MyongJi University, Yongin, Korea, Georgia Institute of Technology, Atlanta, USA*)

Substrate Effect on the Morphology of As-grown Carbon Nanocoils C. C. Su, Y. L. Hsieh, N. K. Chang and S. H. Chang (*National Taiwan University, Taipei, Taiwan*)

The Effects of Pulse Injection Method on the Photoluminescence of ZnO Nanotetrapods Busarakam Charnhattakorn, Varong Pavarajarn (*Chulalongkorn University, Bangkok, Thailand*)

Twisted Pair Specimens Insulated by Conventional and Nanocomposite Enamel: Life Curves and PD Patterns Francesco Guastavino, Alessandro Ratto, Gianfranco Coletti (*University of Genoa, Italy*)

Barrier formation technique using low energy Ar ion irradiation to form wide temperature range operable SWCNT-SET Takahiro Mori, Yasuhiro Tsuruoka, Yohji Achiba, and Koji Ishibashi (*Advanced Device Laboratory, RIKEN The Institute of Physical and Chemical Research, Japan*)

NANOELECTRONICS

Conductance Anomalies in Quantum Point Contacts G. Frucci, A. Di Gaspare, L. Di Gaspare, A. Notargiacomo, E. Giovine, D. Spirito, and F. Evangelisti (*Università Roma TRE, Rome, Italy*)

Tunable silicon q-dots through ultrasonic milling
A.Troia, A. Giovannozzi, G. Amato *(National Institute of Metrological Research, Turin, Italy)*

Controlled interference effects of spatial reproduction for electron waves in semiconductor 1D nanostructures with parabolic quantum wires V. A. Petrov and A. V. Nikitin (*Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Moscow, Russia*)

Five Channel InAlAs/InGaAs MHEMT for High Frequency Power Amplifier Application and Comparison over Conventional PHEMT Partha Mukhopadhyay, Sudip Kundu, Harikrishnan A.I, Palash Das, Saptarshi Pathak, Edward Y. Chang and Dhrubes Biswas (*Indian Institute of Technology – Kharagpur, India*)

Repair Techniques for Hybrid Nano/CMOS Computation Architecture Saket Srivastava, Aissa Melouki and Bashir M. Al-Hashimi (*University of Southampton, UK*)

On Brain-inspired Hierarchical Network Topologies Valeriu Beiu, Basheer A.M. Madappuram, Peter M. Kelly and Liam J. McDaid (*College of IT, UAE University, Maqam Campus, UAE*)

Full Adder Design Using Hybrid CMOS-SET Parallel Architectures Guoqing Deng and Chunhong Chen (*University of Windsor, Ontario, Canada*)

Dense Array of Quantum Dot in Ge/Si Nanostructures: Strain Induced Control of Electron Energy Spectrum and Optical Transitions Anatoliy Dvurechenskii, Andrew Yakimov (*Rhzanov Institute of Semiconductor Physics, Siberian Branch of Russian Academy of Science, Novosibirsk, Russia*)

Charge Trapping NanoElectronic Memories P. Lorenzi, R. Rao, G. Ghidini, F. Palma, F. Irrora (*"La Sapienza" University, Rome, Italy*)

A Crosstalk Minimization technique for Sublithographic Programmable Logic Arrays Harika Manem and Garrett S. Rose (*Polytechnic Institute of NYU, USA*)

Effect of Process Variation on 15-nm-Gate Stacked Multichannel Surrounding-Gate Field Effect Transistor Ming-Hung Han, Chih-Hong Hwang and Yiming Li (*National Chiao-Tung University, Hsinchu, Taiwan; National Nano Device Laboratories, Hsinch, Taiwan*)

Nano Structured Composite Carbon based material Davide Micheli, Roberto Pastore, Emanuele Apollo, Mario Marchetti, Gabriele Gradoni, Franco Moglie, Valter Mariani Primiani (*Sapienza University of Rome, Rome, Italy*)

Numerical simulation of current density in high voltage dielectrics O. Ourahmoun, M.S. Belkaid (*University of Mouloud Mammeri, Tizi-Ouzou, Algeria*)

NanoElectronics Lab based on NanoGap fabrication Danilo Demarchi (*Politecnico di Torino, Italy*)

High Optical Sensing by Multiple-Slot Waveguide Microring Resonators Alireza Kargar (*Shiraz University, Shiraz, Iran*)

Graphene Nanoribbon Schottky Diodes Using Asymmetric Contacts Alireza Kargar (*Shiraz University, Shiraz, Iran*)

NANOFABRICATION

Emission Energy Tuning of InAs-Quantum Dots For Fabrication of Broadband Superluminescent Diodes S. Haffouz, S. Raymond, Z.G. Lu, P.J. Barrios, J.R. Liu and D. Poitras (*Institute for Microstructural Sciences, National Research Council of Canada, Ottawa, Canada*)

Novel nanobar Pt/ZnO thin films produced by spin – coating and the effect of annealing on structural and optical properties Mohammad Hossein Habibi (*University of Isfahan, Isfahan, I. R. Iran*)

Non-Covalent Functionalization of Carbon Nanotubes with Redox Active Lignin Derivatives Grzegorz Milczarek (*Institute of Chemistry and Technical Electrochemistry, Poznan, Poland*)

Sonochemically Assisted Synthesis of ZnO Nanoparticles; A Novel Direct Method Azadeh Askarinejad, Mohamad Amin Alavi, Ali Morsali (*Faculty of Sciences, Tarbiat Modares University, Tehran, Islamic Republic of Iran*)

Surface Functionalisation of Nanoparticles in Suspension via Tri-phasic Reverse Emulsion Tapas Sen, Marion Van der Waterbeemed and Ian James Bruce (*University of Central Lancashire, Preston, United Kingdom*)

Synthesis and Gas Sensing of SnO2 with Nanosheet-like Morphology Azam Anaraki Firooz, Ali Reza Mahjoub and Abbas Ali Khodadadi (*Tarbiat Modares University and University of Tehran, Iran*)

Supported Bars Novel Cantilever Beam Design for RF MEMS Series Switches Hamood Ur Rahman, Student Member, Rodica Ramer (*University of New South Wales, Sydney, Australia*)

Controlled nanostructuration of catalyst particles for carbon nanotubes growth S. Rizk, M. B. Assouar, L. De Poucques, J. Bougdira (*Nancy University, CNRS, France*)

Fabricating gold nanobridges between gold nanoelectrodes using dielectrophoresis technique Dong-Uk Cheon, Sanjeev Kumar and Gil-Ho Kim (*Sungkyunkwan University, Suwon, Korea*)

Dielectrophoretic alignment of ZnO nanoparticles in pre-patterned nanogap electrodes Young-Kyo Seo, Sanjeev Kumar and Gil-Ho Kim (*Sungkyunkwan University, Suwon, Korea)*

Self-assembled Silica nanotrench arrays using surfactant templates Yaqing Chi, Haiqin Zhong, Bingcai Sui, Xueao Zhang, and Liang Fang (*National University of Defense Technology, Changsha, China*)

Preparation and Properties of Electrospun Gallium Nitride Nanofibers Anamaris Meléndez, Kristle Morales, Idalia Ramos, Eva Campo and Jorge J. Santiago-Avilés (*University of Puerto Rico at Humacao, Puerto Rico*)

Fabrication and Characterization of Lead Zirconate Titanate Composite Films with PZT Nanocrystalline Powders via Hybrid Sol-Gel Process Shahab Torkian, Abdolghaffar Barzegar (*Shiraz University, Shiraz, Iran*)

Fabrication of Asymmetric Micro- and Nanostructure Based on Stepwise Angle-resolved Colloidal Lithography Gang Zhang, Lin Gan, Dayang Wang, Helmuth Möhwald and Bai Yang (*Jilin University, Changchun, China*)

Biomimetic Silicon Tip Arrays for Broadband Antireflective and Self-Cleaning Surfaces Yunfeng Li, Junhu Zhang, and Bai Yang (*Jilin University, Changchun, P. R. China*)

Colloidal Crystal-Assisted Lithography for Preparation of 2D Patterned Arrays Zhiqiang Sun, and Bai Yang (*Jilin University, Changchun, P. R. China*)

A basic ionic liquid for synthesis of flower-like ZnO by hydrothermal method Maryam Movahedi, Alireza Mahjoub, Elaheh Kowsari and Issa Yavari (*Tarbiat Modares University, Tehran, Iran)*

Structural Dynamics of Lead Nanoparticles with Stable Metallic Surfaces on Lead-Based Perovskite Prepared by Co-Precipitation Jun Kano, Tokushi Kizuka, Fumihito Shikanai, and Seiji Kojima (*University of Tsukuba, Tsukuba, Japan*)

Raman Spectral Analysis of Nitrogen Incorporated C60 Films A. N. M. Ashrafuzzaman, Ahmed Zubair, S. M. Mominuzzaman, Tetsuo Soga and Takashi Jimbo (*Bangladesh University of Engineering and Technology BUET, Bangladesh, Nagoya Institute of Technology, Nagoya, Japan*)

Metal nanojunctions on silicon single nanowire devices Giovanni Pennelli and Massimo Piotto (*University of Pisa, Pisa, Italy; IEIIT – Pisa, CNR*)

A green photoreduction method for synthesis of spherical silver nanoparticles: pH, UV intensity effects on growth process Tahereh Saber Gharesou, Nima Taghavinia (*Sharif University of Technology, Iran*)

Photocatalytic Activity of Mg-Doped TiO_2/SiO_2 Nanofilms Shuhua Dong · Kejing Xu Fantao Meng (*Shandong University of Technology, PR China*)

Preparation and Optical Properties of 30 and 60 nm Co_3O_4 Nanowires Yu Cheng Chena, Jen Bin Shib, Chih Jung Chena, Ya Ting Lina, Po Feng Wua (*Feng-Chia University, Taichung, Taiwan*)

Computational Study of an Optical NEMS Sensor Chengkuo Lee, Wenfeng Xiang, and Fu-Li Hsiao (*National University of Singapore, Singapore*)

A Novel Hexagonal Nano-ring Resonator Fu-Li Hsiao and Chengkuo Lee (*National University of Singapore, Singapore*)

Fabrication of carbon nanostructures by arc discharge in liquid N_2 with automatic electrode delivering tool Tawatchai Charinpanitkul, Ekapong Phattarapongsant, Jiraporn Klanwan and Nayot Kurukitkoson (*Chulalongkorn University, Thailand*)

A single-step gas-phase reaction for synthesizing zinc oxide and carbon nanoparticle composite Jiraporn Klanwan, Thornchaya Satitpitakun, Yoshio Otani and Tawatchai Charinpanitkul (*Chulalongkorn University, Thailand*)

Advances in the Pulsed Laser Deposition of Rare Earth – Doped $LiYF_4$ Thin Films on $LiYF_4$ Substrates M. Anwar-ul-Haq, S. Barsanti, P. Bicchi (*University of Siena, Siena, Italy*)

Synthesis of highly fluorescent gold clusters from nanoparticle etching and templating with thiols B. Santiago-González, J. Calvo-Fuentes, M. A. López-Quintela (*University of Santiago de Compostela, Santiago de Compostela, Spain*)

Fabrication of Tungsten Oxide Nanohybrids by Intercalation of Amino-Carboxylic Acid Ligands Maryam Afsharour, Alireza Mahjoub, and Mostafa M. Amini, (*Tarbiat Modares University, Tehran, Iran*)

Amplified nanopatterning by self-organized shadow mask ion-lithography D. Chiappe, A. Toma, Z. Zhang, C. Boragno, F. Buatier de Mongeot (*University of Genoa, Italy*)

Fabrication of Metal Nanostructures by Atomic Force Microscope Lithography Gwangmin Kwon, Kyeongkeun Ko, Woongsun Lim, Sunwoo Lee, Jinho Ahn, Geun Young Yeom, and Haiwon Lee (*Hanyang University, South Korea*)

Optimization of processing parameters of PZT ceramic prepared by Sol-Gel Derived Nanocrystalline PZT Powders Ali Mirzaee and Abdolghaffar Barzegar (*Shiraz University, Shiraz, Iran*)

Investigation of Homogeneous Large Surface Area Anodic Alumina Membrane Synthesis Fang Xie, Mary Ryan, Jason Rile (*Imperial College London, UK*)

A Novel Approach for Nanoporous Gas Sensor Fabrication Using Anodic Aluminum Oxidation and MEMS Process W. Huang, C.K. Chang, Kevin C.C. Lu, Member, Y.S. Huang and C.R. Lin (*National Taipei University of Technology, 1, Taipei, Taiwan*)

VLS growth of Si nanowires with in-situ doping for MOS transistors Virginia Robbins, David Taylor, Wanqing Cao, Alice Fischer-Colbrie, Chungdee Pong, Shibly Ahmed, Dave Stumbo Nanosys (*Nanosys Inc., Palo Alto, CA, USA*)

Dislocation Reduction in InGaN/GaN multiple quantum wells by low-pressure MOCVD using nanorod-array patterned sapphire substrate Ching-Hsueh Chiu, Zhen-Yu Li, Chin-Hua Chiu, Ming-Hua Lo, Da-Wei Lin, C. L. Chao, Hao-Chung Kuo, Tien-Chang Lu and Shing-Chung Wang (*National Chiao Tung University, Hsinchu, Taiwan*)

Influence of processing parameters on electrical property of carbon nanotube films Lei Bu, Jasmin Steitz, Nghia Dinh-Trong and Olfa Kanoun (*Chemnitz University of Technology, Germany*)

Epitaxial graphene FETs with high on/off ratio grown on 4H-SiC Keita Konishi, HirokiHibino and Kanji Yoh (*Sapporo Hokkaido University, Sapporo, Japan*)

NANOMANUFACTURING

Parallel local Oxidation Nanolithography on Silicon Surface N.S.Losilla, J. Martínez , R. García (*Instituto de Microelectrónica de Madrid, CSIC, Madrid, Spain*)

Micro and Nano Product Engineering using Data Management for Silicon-based Fabrication Process Development Kai Hahn, Dirk Ortloff, Thilo Schmidt, Matthias Mielke, and Rainer Brück (*University of Siegen, Germany*)

NANOMATERIALS

A ZnO Quantum Dot Radiation Dosimeter for High Energy Ionizing Radiation Measurements Joyce Xinya Gao, John T.W. Yeow, and Rob Barnett (*University of Waterloo, Waterloo, Canada)*

Polymeric Nanospheres Containing Rare Earth Complexes and Colloidal Crystals with Luminescent Properties Yingnan Jiang, Cheng Ma, Chuanxi Wang, Hui Li, Xuesong Meng, Quan Lin, and Bai Yang (*Jilin University, Changchun, P. R. China*)

Atomic Layer Etching of III-V Compound Materials Using a Low Angle Forward Reflected Ne Neutral Beam W. S. Lim, S. D. Park, B. J. Park, J. K. Yeon and G. Y. Yeom (*Sungkyunkwan University, Suwon, Korea*)

Synthesis of ZnO nanostructures in ionic liquid and their photoluminescence property Alireza Mahjoub, Maryam Movahedi, Elaheh Kowsari and Issa Yavari (*Tarbiat Modares University, Tehran, Iran*)

Study of Biomineralization Processes by Cryo-TEM F. Valentini, E. Landi, M. Sandri, A. Tampieri (*ISTEC CNR, Faenza, RA, Italy*)

Effect of nano ZnO additive on the microstructure and electrical properties of potassium-sodium niobate lead-free piezoelectric ceramics R. Hayati, M. Feizpour, A. Barzegar (*Shiraz University, I. R. Iran*)

Liquid-Solid Nano-Interactions Of Ceramic And Metals F. Barberis, G. Cama, M. Capurro, E. Finocchio (*University of Genoa, Italy*)

NANOPACKAGING

All-Oxide Crystalline Microelectromechanical Systems M. Biasotti, L. Pellegrino, E. Bellingeri, C. Bernini, A. S. Siri, D. Marrè (*University of Genoa, Italy*)

WEDNESDAY, JULY 29

8.00-20.00 Registration

8.30-9.30 PLENARY SESSION

8.30-9.30 **Plenary lecture: Nanostructure Engineering-A Path to Discover and Innovation** Steve Chou (*Princeton University, USA*)

9.30-10.45 SESSION WE1_2: Spin Filtering and Nanomagnetic Materials

9.30-9.45 **All-Electric Dual-QPC Spin Polarizer and Analyzer** J.Wan, M. Cahay, P. Debray, and R. S. Newrock (*University of Cincinnati, USA*)

9.45-10.00 **Transport Through Magnetic Quantum Point Contacts** Timothy E. Day, Aron Cummings, Adam M. Burke, John L. Reno, David K. Ferry, Stephen M. Goodnick (*Arizona State University, USA*)

10.00-10.15 **Magnetic structure and spin filtering effect in pure and nitrogen-doped carbon atomic wires** Zhongyao Li, Wei Sheng, and Zhongqin Yang (*Fudan University, Shanghai, China*)

10.15-10.30 **Temperature dependence of the magnetization of superlattices including fluctuations in the spacer thickness** Zeynab Mohammad Hosseini Nane, Hossein Moradi (*Ferdowsi University of Mashhad, Mashhad, Iran*)

9.30-10.45 SESSION WE1_3: Terascale Nanoelectronics I

9.30-9.45 **Implementable Building Blocks for Fluctuation Based Calculation in Single Electron Tunneling Technology** Innocent Agbo, Saleh Safiruddin and Sorin Cotofana (*Delft University of Technology, The Netherlands*)

9.45-10.00 **Silicon MOS Device Structures for Phosphorus Donor Qubits** N.S. Lai, J.A. Van Donkelaar, A. Alves, C. Yang, F.E. Hudson, E. Gauja, A. Morello, D.N. Jamieson and A.S. Dzurak (*University of New South Wales, Australia and University of Melbourne, Australia*)

10.00-10.15 **k·p-based Quantum Transport Simulation of Silicon Nanowire pMOSFETs** Mincheol Shin, Sunhee Lee, and Gerhard Klimeck (*Dept. of Electrical Engineering, KAIST, Daejeon 305-701, Rep. of Korea*)

10.15-10.30 **Memory Characteristics of IrOx Metal Nanocrystals Embedded in High-Îº Al2O3 Films with IrOx Metal Gate** Siddheswar Maikap, Writam Banerjee, Amit Prakash, Wei-Chih Li, and Jer-Ren Yang (*Chang Gung University, Tao-Yuan, Taiwan*)

10.30-10.45 **Fabrication and Characterisation of CMOS-Compatible Tungsten Nanobolometers** Stephen F. Gilmartin, Khalil Arshak, William A. Lane, Dave Bain, Damian Collins, Simon B. Newcomb, Brendan McCarthy, Arousian Arshak (*University of Limerick, Ireland*)

9.30-10.45 SESSION WE1_4: Atomic Force Microscopy and Nanofabrication

9.30-10.00 **Invited talk: High-speed Atomic force microscopy for imaging and generating nanostructures** Mervyn Miles, Loren Picco, David Engledew, James Vicary, Massimo Antognozzi, Arturas Ulcinas, Peter Dunton (*HH WIlls Physics Laboratory, University of Bristol, Tyndall Avenue Bristol, Bristol, UK*)

10.00-10.15 **Towards Atomic-Fidelity Patterning by Electron-Stimulated Desorption of Hydrogen** Scott W. Schmucker, and Joseph W. Lyding (*University of Illinois at Urbana-Champaign, Urbana, Illinois, USA*)

10.15-10.30 **Atomic Force Microscope manipulation of octanethiol-capped gold nanoparticles deposited by spin casting** Giovanna Canu, Luca Pellegrino, Andrea Gerbi, Cristina Bernini, Marina Dipasquale, and Daniele Marrè (*University of Genoa, Italy*)

10.30-10.45 **Focusing of molecular beams for the development of new tools for nanoscience and nanotechnology** Sabrina Eder, Thomas Reisinger, Gianangelo Bracco, Stefan Rehbein, Günter Schmahl, Henry I. Smith, and Bodil Holst (*University of Genoa, Italy*)

9.30-10.45 SESSION WE1_5: Nanobiomedicine: Nanofabrication and Characterization

9.30-9.45 **Unusual biological behavior of staphylococci with nano silver assayed by microtiter-plate** Giti Emtiazi, Samaneh Shahrokh (*University of Isfahan, I. R. Iran*)

9.45-10.00 **Development of Cell Fixture for In-Situ Imaging and Manipulation of Membrane Protein Structure** Carmen Kar Man Fung, Ning Xi, Ruiguo Yang, Kristina Seiffert-Sinha, King Wai Chiu Lai, and Animesh A. Sinha (*Michigan State University, USA*)

10.00-10.15 **Local Evaluation of Stiffness Distribution for Biological Organism by Nanoprobes inside ESEM** Masahiro Nakajima, Member, Mohd Ridzuan Ahmad, Naoki Hisamoto, Masaru Kojima, Michio Homma and Toshio Fukuda (*Nagoya University, Japan*)

10.15-10.45 **Invited talk: Magnetic nanofilm adhesion to mucosal tissue** V. Pensabene, T. Fujie, V. Mattoli Member, A. Menciassi, S. Takeoka, P. Dario (*CRIM Lab, Scuola Superiore Sant'Anna, Pisa, Italy*)

10.45-11.15 Coffee break

11.15-12:45 SESSION WE2_1: Thermal CNT Applications and Materials

11.15-11.30 **The Influence of Thermal Process on Electrical Conductivity Microstructures Made by Ink Containing Nano Sized Silver Particles** Jan Felba, Andrzej Moscicki, Karol Nitsch, Piotr Paluch (*Wroclaw University of Technology, Poland*)

11.30-11.45 **Time-dependent sintering properties of Ag nanoparticle paste for room temperature bonding** Daisuke Wakuda, Keun-Soo Kim, and Katsuaki Suganuma (*JSPS and Osaka University, Japan*)

11.45-12.00 **Model for Thermal Conductivity of CNT-nanofluids** Maryamalsadat Lajvardi, Anwar Gavili, Sadollah Ebrahimi, Jamshid Sabbaghzadeh (*Iran National Laser Science Center, Tehran, Iran*)

12.00-12.15 **Vertically Aligned Carbon Nanotubes on Copper Substrates for Applications as Thermal Interface Materials: from Synthesis to Assembly** W. Lin, R. Olivares, Q. Liang, R. Zhang, K. Moon, C. P. Wong (*Georgia Institute of Technology, USA*)

12.15-12.30 **Finite Element Simulation of Bimodal and Trimodal Thermally Conductive Adhesives** Nabi Nabiollahi, Johan Liu, Zhu Hilli, Yan Zhang, Yue Cong, Zhaonian Cheng, Masahiro Inoue (*Chalmers University of Technology, Sweden*)

11.15-12:45 SESSION WE2_2: Invited Session on Spintronics and Nanomagnetics

11.15-11.45 **Invited talk: Controlled assembly of semiconductor/metal nanostructures** Alberta Bonanni (*Institut fur Halbleiter und Festkorperphysik Johannes Kepler University, Germany*)

11.45-12.15 **Invited talk: Magnetic orientation effects in (Ga,Mn)As nanostructures** Andrew C. Irvine and Joerg Wunderlich (*University of Cambridge, UK, Hitachi Cambridge Laboratory, UK*)

12.15-12.45 **Invited talk: Spintronics with Organic semiconductors** Alek Dediu, I. Bergenti, A. Riminucci, M. Prezioso, P. Graziosi (*CNR Bologna, Italy*)

11.15-12:45 SESSION WE2_3: Terascale Nanoelectronics II

11.15-11.45 **Invited talk: Pattern Generation by Using Multistep Room-Temperature Nanoimprint Lithography** Giuseppe Scarpa (*Technical Univerität München, Germany*)

11.45-12.00 **The Single-Atom Transistor: Quantum Electronics at Room Temperature** Christian Obermair, Fangqing Xie and Thomas Schimmel (*University of Karlsruhe, Germany*)
12.00-12.15 **Reversible Logic for Concurrent Testing of Multiple Faults in Emerging Nanotechnologies** Himanshu Thapliyal and Nagarajan Ranganathan (*University of South Florida, USA*)

12.15-12.30 **Nanoscale Reconfigurable Computing Using Non-Volatile 2-D STTRAM Array** Somnath Paul, Subho Chatterjee, Saibal Mukhopadhyay and Swarup Bhunia (*Case Western Reserve U., USA, Georgia Inst. of Tech., USA*)

12.30-12.45 **Silicon Nanowire Transistor with a Channel Width of 4 nm Fabricated by Atomic Force Microscope Nanolithography** Javier Martinez, Ramses Valentin Martinez, and Ricardo Garcia (*Institute of Microelectronics of Madrid, Spain*)

11.15-12:45 SESSION WE2_4: Nanophotonic Detectors

11.15-11.45 **Invited talk: Quantum Dot Detectors** Adrienne Stiff Roberts (*Duke University, USA*)

11.45-12.00 **Electrospun polymer light-emitting fibers integrating nanofeatures** Stefano Pagliara, Francesca Di Benedetto, Andrea Camposeo, Elisa Mele, Luana Persano, Ripalta Stabile, Roberto Cingolani, Dario Pisignano (*National Nanotechnology Laboratory of Istituto Nazionale di Fisica della Materia-Consiglio Nazionale delle Ricerche, c/o ISUFI, Italy*)

12.00-12.15 **Fabricated planar photonic crystal gradient index lens by laser interference lithography** Chunlei Tan, C S Peng, V N Petryakov, Yu K Verevkin, J Zhang, Z Wang, S M Olaizola, T Berthou, S Tisserand (*Optoelectronic Research Center, Tampere University of Technology, Finland*)

12.15-12.30 **Nanophotonic Devices by Room-Temperature Nanoimprint Lithography on Active Organic Materials** E. Mele, A. Camposeo, P. Del Carro, F. Di Benedetto, R. Stabile, L. Persano, R. Cingolani, D. Pisignano (*NNL, National Nanotechnology Laboratory of CNR-INFM, Università degli Studi del Salento, c/o Distretto Tecnologico ISUFI, Italy*)

11.15-12:45 SESSION WE2_5: Nanobiomedicine: Nanoparticles and Quantum Dots

11.15-11.30 **Degradation Related Cytotoxicity of Quantum Dots** Vitalijus Karabanovas, Paulius Grigaravicius, Aldona Beganskiene, Saulius Bagdonas, Aivaras Kareiva, Karl Otto (*Vilnius University, Lithuania*)

11.30-11.45 **Effect of Silver and Titanium Dioxide Nanoparticles on PCR Efficiency** Weijie Wan, John T. W. Yeow and Michele I. Van Dyke (*University of Waterloo, Canada*)

11.45-12.00 **Profiling of Low Mass Ions in Serum from Colorectal Cancer Patients using NALDI-TOF Analysis and Its Application for Chemotherapy Response**

Prediction Kyung-Hee Kima, Kun Kima and Byong Chul Yooa (*Colorectal Cancer Branch, Research Institute, National Cancer Center, Korea*)

12.00-12.15 **Influence of growth factor on internalization pathway of quantum dots into cells** Leona Damalakiene, Vitalijus Karabanovas, Saulius Bagdonas, Ricardas Rotomskis and Mindaugas Valius (*Vilnius University, Lithuania*)

12.15-12.30 **Fabrication of Glucosamine Functionalized Gold/Silver Glyconanoparticles from Nanoclusters for Biomedical Nanotechnology** Murugan Veerapandian, Chang-hyun Jang and Kyusik Yun (*Kyungwon University, Korea*)

12.45-2.15 Lunch break

2.15-4.00 SESSION WE3_1: Nanomanufacturing of CNTs and Organics

2.15-2.45 **Invited talk: Super-aligned Carbon Nanotubes - from Growth Mechanism to Loudspeakers** Kaili Jiang and Shoushan Fan (*Department of Physics & Tsinghua-Foxconn Nanotechnology Research Center, Tsinghua University, China)*

2.45-3.00 **Carbon Nanotube Alignment Using Meniscus Action** Joshua D. Wood and Joseph W. Lyding (*University of Illinois, Urbana-Champaign, USA*)

3.00-3.15 **Parameters affecting hydrogen adsorption in Carbon Nanotubes** Stefano Bianco, Massimo Rovere, Mauro Giorcelli, Simone Musso, and Alberto Tagliaferro (*Polytechnic of Turin, Italy*)

3.15-3.30 **Influence of the composition of MWCNTs layers on the properties of strain gauges** Nghia Dinh-Trong, Jasmin Steitz, Lei Bu, Olfa Kanoun (*Chemnitz University of Technology, Germany*)

3.30-3.45 **Fully plastic actuator based on multi-walled carbon nanotubes bucky gel** Maurizio Biso and Davide Ricci (*Italian Institute of Technology of Genova, Italy*)

3.45-4.00 **Polymer assisted dispersion and alignment of carbon nanotubes** Xu-Ming Xie, Zhi-Ling Zhang, Yi-Tao Liu, Qing-Ping Feng, Wei Zhao and Xiong-Ying Ye (*Tsinghua University, Beijing, China*)

2.15-4.00 SESSION WE3_2: Magnetic Nanostructures for Logic and other Technologies

2.15-2.30 **On-chip manipulation of single magnetic nano-particles via domain walls conduits** R. Bertacco, M. Donolato, M. Gobbi, M. Cantoni, D. Petti, S. Brivio,V. Metlushko, B. Ilic, P. Vavassori (*Polytechnic of Milan*, *Italy*)

2.30-2.45 **Noncontact Manipulation of Ni Nanowires Using a Rotating Magnetic Field** Li Zhang, Yang Lu, Lixin Dong, R. Pei, Jun Lou, Bradley E. Kratochvil, and Bradley J. Nelson (*Institute of Robotics and Intelligent Systems, Zurich, Switzerland*)

2.45-3.00 **Domain Wall Behavior In L-shaped Permalloy Nanowires** Sangjo Lee, Sanghoon Kim, Jungho Ko, Joon Chul Moon, Honglyoul Ju, and Jongill Hong (*Yonsei University in Seoul, Korea*)

3.00-3.15 **Magnetic Behavior of Arrays of Cobalt Nanowires** Bipul Dasa, Kalyan Mandala and Pintu Senb *(S N Bose National Centre for Basic Science, India)*

3.15-3.30 **High Frequency Transmission Behavior of Magnetic Domain-Wall Racetrack Wire** S. H. Lee, H. G. Piao, D. Djuhana, C.M. Heo, J. H. Shim, S. H. Jun, K. Tarigan, S.K. Oh, S.C. Yu, and D. H. Kim (*Chungbuk National University, Cheongju, Korea*)

3.30-3.45 **Perturbative Approach to Non-Autonomous Dynamics of a Nonlinear Spin-Torque Nano-Oscillator** Vasil Tiberkevich, Oleksandr Dmytriiev, and Andrei Slavin (*Oakland University, Rochester, USA*)

3.45-4.00 **Exchange Bias in self-organized nanopatterned Cr/Fe junctions** Luca Anghinolfi, Francesco Bisio, Maurizio Canepa and Lorenzo Mattera (*CNISM, University of Genoa, Italy*)

2.15-4.00 SESSION WE3_3: Nanotransistor Simulation

2.15-2.30 **Experimental, Modeling and Simulation Studies of Nanoscale Resistance Switching Devices** Sung Hyun Jo, Ting Chang, Kuk-Hwan Kim, Siddharth Gaba and Wei Lu (*University of Michigan, USA*)

2.30-2.45 **Comparison of Energy Relaxation in One-Dimensional Thermionic and Tunneling Transistors** Balaji Ramasubramanian and Eric Pop (*University of Illinois, Urbana-Champaign, USA*)

2.45-3.15 **Invited talk: Electron transport in nanoscale semiconductor devices using the Pauli Master equation** Massimo Fischetti (*University of Massachusetts, USA*)

3.15-3.30 **Graphene Nanoribbon Schottky-Barrier Field Effect Transistor and its Application as a Nanoelectromechanical Device** Kai-Tak Lam, Yan-Zheng Peck, Chengkuo Lee and Gengchiau Liang (*National University of Singapore, Singapore*)

3.30-3.45 **Transport and noise behavior of cascaded realistic tunnel barriers** M. Totaro, P. Marconcini, D. Logoteta, and M. Macucci (*University of Pisa, Italy*)

3.45-4.00 **Backscattering coefficient in gate-all-around 3C-SiC nanowire FETs** Konstantinos Rogdakis, Stefano Poli, Edwige Bano, Konstantinos Zekentes, and Marco G. Pala (*MEP-LAHC/INP Grenoble, MINATEC, 3, France and MRG, IESL, FORTH, Vassilika Vouton, Greece*)

2.15-4.00 SESSION WE3_4: Nanophotonic Emitters

2.15-2.45 **Invited talk: InP quantum dot 7xxnm laser diodes** Peter Smowton (*Cardiff University, UK*)

2.45-3.00 **Effective tuning of the charge state of a single InAs/GaAs quantum dot by means of external fields** A. Larsson, E. Moskalenko, M. Larsson and P.O. Holtz (*Linköping University, IFM, Linköping, Sverige and Russian Academy of Sciences, St. Petersburg, Russia*)

3.00-3.15 **n-type SiGe heterostructures for THz intersubband transitions** M. De Seta, G. Capellini, G. Ciasca, Y. Busby, F. Evangelisti, G. Nicotra, M. Nardone, M. Ortolani, M. Virgilio, G. Grosso, A. Nucara, and P. Calvani (*University Roma Tre, Italy*)

3.15-3.30 **Lasing-emitting and photo-switchable fully organic nanofibers** Stefano Pagliara, Andrea Camposeo, Francesca Di Benedetto, Elisa Mele, Ripalta Stabile, Roberto Cingolani and Dario Pisignano (*National Nanotechnology Laboratory of Istituto Nazionale di Fisica della Materia-Consiglio Nazionale delle Ricerche, c/o ISUFI, Italy*)

3.30-3.45 **An Optically-driven Platform for Manipulation of Carbon Nanotubes** Ming-Wei Lee, Yen-Heng Lin, and Gwo-Bin Lee (*National Cheng Kung University, Tainan, Taiwan*)

2.15-4.00 SESSION WE3_5: Nanobiomedicine Robotics

2.15-2.30 **Single Cell Injection using Nanopipette via Nanorobotic Manipulation System inside E-SEM** Yajing Shen, Masahiro Nakajima, Mohd Ridzuan Ahmad, Seiji Kojima, Michio Homma, and Toshio Fukuda (*Nagoya University, Nagoya, Japan*)

2.30-2.45 **Fabrication of Insect Muscle-Powered Sheet toward Wet NanoRobotics** Keisuke Morishima, Yui Sakuma, Yoshitake Akiyama, Takayuki Hoshino (*Tokyo University of Agriculture and Technology, Tokyo, Japan*)

2.45-3.00 **Rotational Speed Control of Na+-Driven Flagellar Motor by Nano/Micro Dual Pipettes** Kousuke Nogawa, Masaru Kojima, Masahiro Nakajima, Seiji Kojima, Michio Homma, and Toshio Fukuda (*Nagoya University, Nagoya, Japan*)

3.00-3.15 **Nano Size Biological Clock Capsulated by Lipid Layer** Masaru Kojima, Masae Ohno, Masahiro Nakajima, Michio Homma, Kingo Takiguchi,Takao Kondo, and Toshio Fukuda (*Nagoya University, Nagoya, Japan*)

3.15-3.45 **Invited talk: Toward Self-Assembly of Phage-Like Nanorobot** Miki Hirabayashi, Akio Nishikawa, Fumiaki Tanaka, Masami Hagiya, and Kazuhiro Oiwa (*Kobe Advanced ICT Research Center KARC, National Institute of Information and Communications Technology NICT, Japan*)

3:45-4:00 **Polymeric electrospun nanofibers for scaffolds applications** Alessandro Polini, Stefano Pagliara, Roberto Cingolani, Dario Pisignano (*NNL, National Nanotechnology Laboratory of INFM-CNR, and Istituto Superiore di Formazione Interdisciplinare ISUFI, Università del Salento, Italy*)

4.00-4.30 Coffee break

4.30-5.45 SESSION WE4_2: Nanomaterials II

4.30-4.45 **Positioning and numbering Ge quantum dots for effective quantum tunneling devices** K. H. Chen, C. Y. Chien, W. T. Lai, S. W. Lee, and P. W. Li (*National Central University, Taiwan*)

4.45-5.00 **The Electrical Transport Properties of the Nanosized Metal-Semiconductor Contacts between Er Silicide Nanoislands and Si (001)** Junqiang Song, Qun Cai (*Fudan University, Shanghai, China*)

5.00-5.15 **Amorphous-Nanocrystalline Silicon PE CVD grown on Porous Alumina Substrate** A. Khodin, Lee Joong-Kee, Kim Chang-Sam, Kim Sang-Ok (*Korea Institute of Science and Technology, KIST, Seoul, Korea*)

5.15-5.30 **Ionic Conductivity of the Yttria-Stabilized-Zirconia Nanomaterials** Miroslaw M. Bucko (*AGH-University of Science and Technology, Cracow, Poland*)
5.30-5.45 **Devices integrating micro- and nanoelements for fluid manipulation** Elisa Mele, Salvatore Girardo, Andrea Camposeo, Francesca Di Benedetto, Ripalta Stabile, Roberto Cingolani, and Dario Pisignano (*NNL, National Nanotechnology Laboratory of CNR-INFM, Università degli Studi del Salento, c/o Distretto Tecnologico ISUFI, and Istituto Italiano di Tecnologia, Italy*)

4.30-5.45 SESSION WE4_3: Transport in Nanostructures I

4.30-5.00 **Invited talk: First-Principles Modeling of Transport in Doped Silicon Nanowires** Riccardo Rurali (*Universitat Autonoma de Barcelona, Spain*)

5.00-5.15 **Impurity Potential Induced Resonances in Doped Si Nanowire: A NEGF Approach** Antonio Martinez, Karol Kalna, and Asen Asenov (*University of Glasgow, Scotland, United Kingdom*)

5.15-5.30 **Strain effects on the band structure for Si nanowires** Hajime Nakamura (*Science & Technology, Tokyo Research Lab. In IBM-Japan, Japan*)

5.30-5.45 **The Hybrid SET activity at INRIM** E. Enrico and G. Amato *(National Institute of Metrological Research Turin, Italy)*

4.30-5.45 SESSION WE4_4: Nanostructure Synthesis

4.30-4.45 **Size Variation of Nickel Nanocrystals Passivated with Alkyl Amines on Thermolytic Reduction** Chandramohan George, Maria Teresa Parodi, Davide Ricci, and Ermanno Di Zitti (*University of Genoa, Italy*)

4.45-5.00 **Use of unconventional acidic electrolytes for fabrication of anodic porous alumina** Niranjan Patra, Marco Salerno, Romeo Losso, and Roberto Cingolani (*Nanobio Department of the IIT, Genoa, Italy*)

5.00-5.15 **Ultra-thin titanium nitride film epitaxy with hyperthermal titanium ions** Jürgen W. Gerlach, Thomas Höche, Lena Neumann, and Bernd Rauschenbach (*Leibniz-Institut für Oberflächenmodifizierung (IOM), Leipzig, Germany*)

5.15-5.30 **Droplet and Dielectrophoresis deposition of Single-Wall Carbon Nanotubes** L. A Biazi, C. Collini, V. Guarnieri, A. Lago, R. Marchiori, G. Gottardi, E. Morganti and L. Lorenzelli *(FBK Italy, UFSC Brazil, and University of Genoa DIBE, Italy)*

4.30-5.45 SESSION WE4_5: Nanobiomedicine: Cellular Nanotechnology

4.30-4.45 **Stem Cell growth and migration on nanostructured scaffolds and micro-fluidic channels on Si-Chip** Johan Liu, H. Georg Kuhn, Yujia Jing, Jan-Olof Dahlberg, Linnea Ericsson, Anna Nilsson, Lena Nyberg, Behroz Ohady, Johan Svensson, Björn Carlberg, Christiana M.Cooper-Kuhn, Teng Wang, Balan Ganesh and Yihua Zhu (*BNSL, Chalmers University of Technology, Göteborg, Sweden and East China University of Science and Technology, Shanghai, China*)

4.45-5.00 **Investigation of Interactions between Boron Nitride Nanotubes and C2C12 cells** Gianni Ciofani, Leonardo Ricotti, Serena Danti, Stefania Moscato, Claudia Nesti, Vittoria Raffa, Arianna Menciassi, Mario Petrini, and Alfred Cuschieri (*CRIM Lab, Scuola Superiore Sant'Anna, Pisa, Italy*)

5.00-5.15 **Generalized entropy in single ion channel current analysis** Giuseppe Rauch, Simona Bertolini, Roberto Sacile, Mauro Giacomini, Carmelina Ruggiero (*CNR, National Research Council, Genova, and University of Genoa, Italy*)

5.15-5.30 **Nanostructures for SERS in living cell** D. Manno, E. Urso, E. Filippo, R. Fiore, M. Maffia, A. Serra (*University of Salento, Italy*)

5.30-5.45 **Single Cells Electrical Characterizations using Nanoprobe via ESEM-Nanomanipulator System** Mohd Ridzuan Ahmad, Masahiro Nakajima, Seiji Kojima, Michio Homma and Toshio Fukuda (*Nagoya University, Nagoya, Japan*)

5.45-7.00 POSTER SESSION II

NANOBIOMEDICINE

Cellular interaction with Si- and Iron-based nanoparticles for bio-imaging: a study of biocompatibility I. Rivolta, R. D'Amato, R. Alexandrescu, M. Falconieri, I Morjan, M. Chanana, V. Bouzas, R. Costo, F. Fabbri, C. Fleacé, M. A. Garcia, P. Gasco, W. Gonzalez, M. P. Morales, Y. Nie, G. Riccio, C. Robic, G. Sancini, N. Vivenza, H. Xu, V. Bello, V. Maurice, O. Sublemontier, G. Mattei, N. Herlin, D. Wang, J. M. Idee, E. Trave M. Port, S. Veintemillas-Verdaguer, E. Borsella, G. Miserocchi (*DIMS, Univ. of Milano-Bicocca, Italy*)

Advances in the preparation of novel functionalized nanoparticles for bioimaging R. D'Amato, R. Alexandrescu, V. Bello, E. Borsella, V. Bouzas, M. Chanana, R. Costo, F. Fabbri, M. Falconieri, C. Fleacé, M. A. Garcia, P. Gasco, W. Gonzalez, N. Herlin, V. Maurice, F. Huisken, J. M. Idee, V.Loschenov, G. Mattei, G. Miserocchi, M. P. Morales,

I Morjan, Y. Nie, M. Port, V. Pustovoy, G. Riccio, I. Rivolta, A.Ryabova, C. Robic, G. Sancini, O. Sublemontier, E. Trave, S. Veintemillas-Verdaguer, N. Vivenza, D. Wang, H. Xu (*ENEA, Dept. FIM, Rome, Italy*)

Exploiting Memristance in Adaptive Asynchronous Spiking Neuromorphic Nanotechnology Systems B. Linares-Barranco and T. Serrano-Gotarredona (*CSIC Instituto Microelectronica Sevilla IMSE National Microelectronics Center, CNM-CSIC, Spain*)

Shrinking Solid-State Nanopores using Electron Beam Induced Deposition Ronald Kox, Chang Chen, Liesbet Lagae and Gustaaf Borghs (*Functional Nanosystems Group of IMEC, Belgium*)

Biomorphic transformation to obtain hierarchical porous structures Andrea Ruffini, Simone Sprio, Anna Tampieri (*Institute of Science and Technology for Ceramics of the National Research Council, Faenza, Italy*)

Magnetic-Fluorescent-Biotargeting Colloidal Nano-Beads: Preparation and Exploitation in Cell Separation Experiments Riccardo Di Corato, Philomena Piacenza, Mariarosaria Musarò, Raffaella Buonsanti, Pantaleo Davide Cozzoli, Massimo Zambianchi, Giovanna Barbarella, Roberto Cingolani, Liberato Manna and Teresa Pellegrino (*University of Salento, Italy*)

Bio-detection at nano-scale followed by AFM Patrícia Lisboa, Andrea Valsesia, Pascal Colpo, François Rossi (*JRC-European Commission, IHCP, NMI, TP203, Ispra (VA) Italy*)

Development of a polymeric device for gene expression profiling Paola Fanzio, Valentina Mussi, Elena Angeli and Ugo Valbusa (*Italian Institute of Technology IIT of Genoa, Italy*)

Toxicity of toner nanoparticles on RT112 Cell Cultures Lucia Mosiello, Giovanna Zappa, Claudia Zoani, Ilaria Lamberti, Rosanna Gatti, Luciano Pilloni (*ENEA, Research Centre of Casaccia, Rome, Italy*)

Tunneling Though Hydrogen Bonds and Possibility of the Molecular Quantum Dot Transistor Chugo Fujihashi (*Tokyo Polytechnic University, Japan*)

Air Moulding for Planar Patch Clamp on Adherent Neuronal Networks Bosca A. , Magrassi R., Firpo G., Repetto L., Boragno C. and Valbusa U (*Italian Institute of Technology IIT and University of Genoa, Italy*)

Tunable elastomeric nanochannels for separation and manipulation of long DNA molecules Elena Angeli, Chiara Manneschi, Luca Repetto, Giuseppe Firpo, Corrado Boragno and Ugo Valbusa (*University of Genoa, Italy*)

Application of Electrochemiluminescence and Carbon Nanotubes to biomolecular analysis Alessandro Sanginario, Danilo Demarchi, Stefano Bianco, Mauro Giorcelli, Simone Musso, Alberto Tagliaferro (*Politecnico di Torino, Italy*)

Interactions of fluorescently-labelled silica nanoparticles with living cells Kayle Shapero, Anna Salvati, Iseult Lynch, Kenneth Dawson (*University College Dublin, Dublin, Ireland*)

Muscle-powered Nano Mechanical System Assembled by Optical Tweezers Takayuki Hoshino, Hiroshi Kuroda, Reo Kometani, Tomohiro Konno, Kazuhiko Ishihara, and Keisuke Morishima (*University of Tokyo, Japan*)

Analysis of keratinocytes stiffness after desmosome disruption using Atomic Force Microscopy based nanomanipulation Ruiguo Yang, Carmen Kar Man Fung, Kristina Seiffert-Sinha, King Wai Chiu Lai, Amnish A. Sinha and Ning Xi (*Michigan State University, East Lansing, USA*)

Carbon Nanotube for targeted drug delivery Chiara Biale, Valentina Mussi, Sonja Visentin, Guido Viscardi, Nadia Barbero Nicoletta Pedemonte, Louis Galietta and Ugo Valbusa (*Italian Institute of Technology IIT of Genova, Italy*)

NANOMAGNETICS / SPINTRONICS

Excellent magnetic properties of $Co_{53}Fe_{23}V_8O_{16}$ thin films Luu Van Tho and Dorota Pawlak (*Institute of Electronic Materials Technology, Poland*)

Tunnel Magneto-Resistance Effect and Giant Hall Effect of Some Magnetic Thin Film Multilayers Jenica Neamtua, Marius Volmerb (*National Research Institute for Electrical Engineering, Bucharest, Romania*)

Ion-beam proximity lithography fabrication of magnetic particles Julia Litvinov, Azeem Nasrulah, Timothy Sherlock, Yi-Ju Wang, Paul Ruchhoeft, Richard C. Willson (*University of Houston, USA*)

Fabrication and Detailed Characteristics of Nanoperiodic Josephson Junction Array in different Planer Area S. Saini and S. J. Kim (*Jeju National University, Korea*)

Influence of oxygen and nitrogen on impedance and magnetoimpedance of soft magnetic CoFeZr nanoparticles embedded in alumina matrix Julia Fedotova, Andrey Larkin, Yury Kalinin, Alexander Sitnikov, Vera Fedotova, Yury Ilyashuk and Alexander Fedotov (*Belarusian State University, Minsk, Belarus*)

Three dimensional quasi-regular arrangement of ferromagnetic nanostructures within porous silicon P. Granitzer, K. Rumpf1, P. Poelt, H. Plank (*Karl Franzens University Graz, Austria*)

Finite frequency response of small magnetic structures under an external static field S. T. Chui, V. Novosad and S. D. Bader (*University of Delaware, Newark, DE, USA*)

Complex 3-D Magnetic Vortex Structure in Ferromagnetic Nanocubes H. G. Piao, D. Djuhana, J. H. Shim, S. H. Lee, S. H. Jun, Y. D. Zhang, K. Tarigan, S.C. Yu, S.K. Oh, and D. H. Kim (*Chungbuk National University, Cheongju, Korea*)

Micromagnetic and Domain Structures in Ferrite-Garnet Crystals with Combined Anisotropy L.A. Pamyatnykh, G.A. Shmatov, G.S. Kandaurova, S.Y. Pamyatnykh (*Ural State University, Russia*)

Optimizing FePt film morphology for magnetic recording media and spintronic devices Francesca Casoli, Franca Albertini, Pierpaolo Lupo, Lucia Nasi, Simone Fabbrici, Fulvio Bolzoni, Riccardo Cabassi, Claudio Bocchi, Julia Orna, Pedro A. Algarabel, Luis Morellon (*Universidad de Zaragoza, Spain and IMEM – CNR Institute, Italy*)

NANOPHOTONICS

Optical Gates with Nonlinear Gallium Nitride Nanoslab F.A.Bovino, M. Giardina, M.C.Larciprete, A. Belardini, M. Centini, C. Sibilia, M. Bertolotti, A. Passaseo, V.Tasco (*Quantum Optics Lab. , Elsag-Datamat,Genoa, Italy*)

WO_3 and TiO_2-based nanoparticles with photocatalytic properties Ewelina Grabowska, Adriana Zaleska, Maria Gazda, Marcin Janczarek, Jan Hupka (*Gdansk University of Technology, Gdansk, Poland*)

Electrochemical synthesis of fluorescent copper clusters Noelia Vilar, M. Carmen Blanco, Arturo López-Quintela, and José Rivas (*University of Santiago de Compostela, Santiago de Compostela, Spain*)

Electrical tuning and switching response of defect mode in 3D photonic crystal infiltrated with nematic liquid crystal defect layer A. Kulbickas, L. Rastenienė, M. Franckevičius, R. Vaisnoras, C. Lopeez, D. Golmayo, S. Vignolini, D.S.Wiersma (*Vilnius Pedagogical University, Vilnius, Lithuania, Instituto de Ciencia de Materiales de Madrid CSIC, European Laboratory for Non-linear Spectroscopy LENS University of Florence, Italy*)

Optical properties of Ni nanoparticles and nanochains Jen Bin Shib, Yu Cheng Chena, Min Jung Chenga, Jhe Wei Guoa, Chia Wei Leea, Chien Wua, Chung Chieh Changc, Chih Chieh Chanc, Chih Jung Chena, Ya Ting Lina, Po Feng Wu (*Feng-Chia University, Taichung, Taiwan*)

Photocurrent Spectroscopy of Electron Levels in Semiconductor Quantum Wells C. Ghezzi, A. Parisini, L. Tarricone, E. Gombia, M. Baldini, S. Vantaggio (*University of Parma, Parma, Italy*)

All-optical nanoencoding and decoding of 5-level bits onto photosensitive thin films Paolo Biagioni,Matteo Savoini, Lamberto Duò, and Marco Finazzi (*Politecnico di Milano, Italy*)

Cross-antenna structures for polarization control and analysis P. Biagioni, J. S. Huang, M. Savoini, G. C. Gazzadi, L. Duò, M. Finazzi, and B. Hecht (*Politecnico di Milano, CNR-INFM Univ. of Würzburg, Germany*)

NANOSENSORS

Voltage Tunable Sensitivity of Piezoelectric Materials Based Sensors and Actuators Ravinder S. Dahiya, Bruno Torre, Roberto Cingolani, and Giulio Sandini (*Italian Institute of Technology IIT, Genoa, Italy*)

Transfer Printing of the Functionalized Carbon Nanotubes Aligned by DEP Jung-Tang Huang, Fang-Hsun Yeh and Po-Chin Lin (*National Taipei University of technology, Taiwan*)

A Low-Temperature Fabrication Process Integrated Carbon Nanotubes-Based Sensor Device into CMOS IC Jung-Tang Huang, Po-An Lin, Po-Chih Chang, Hom-Wi Chao, Pei-Lun Hsu (*National Taipei University of Technology, Taiwan*)

DNA-functionalized nanopores for single molecule analysis Valentina Mussi, Paola Fanzio, Luca Repetto, Giuseppe Firpo, Sara Stigliani, Paola Scaruffi, GianPaolo Tonini and Ugo Valbusa (*University of Genoa, Italy*)

Carbon Nanotube Sensors with Stone-Wales Defects N. Sinha, S. R. Patil, and R. V. N. Melnik (*Wilfrid Laurier University, Ontario, Canada*)

Electrical characteristics of CNTs/Si heterojunction Micaela Castellino, Stefano Bianco, Marzia Quaglio, Sergio Ferrero and Alberto Tagliaferro (*Politecnico di Torino, Italy*)

SIMULATION

Modeling the neuron-to-carbon nanotubes interface Paolo Massobrio, Giuseppe Massobrio, Sergio Martinoia (*University of Genova, Italy*)

A Link Failure Aware Routing Algorithm for Networks-on-Chip in Nano Technologies Mojtaba Valinataj, Siamak Mohammadi and Saeed Safari (*University of Tehran, Tehran, Iran*)

Simulation and modeling of Electronic transport through carbon nanotubes - effects of encapsulated atom, and structural deformation V. K. Lamba, D. Engles, S. S. Malik, M. Verma, and A. Gupta (*HCTM Kaithal and GNDU Amritsar, India*)

Fast and Compact Simulation Models for a Variety of FET Nano Devices by the CMOS EKV Equations T. Serrano-Gotarredona, B. Linares-Barranco, G. Agnus, V. Derycke, J-P. Bourgoin, D. Vuillaume, J. Sohn, J. Bendall, M. E. Welland, and C. Gamrat (*CSIC Instituto Microelectronica Sevilla IMSE National Microelectronics Center, CNM-CSIC, Spain*)

Simulation and Analysis of Single-electron Transistors with 1-Demision Multiple Islands Bingcai Sui, Yaqing Chi, Hailiang Zhou, and Liang Fang (*National Univ. of Defense Technology, Hunan, China*)

How Much Input Vectors Affect nano-Circuit's Reliability Estimates Walid Ibrahim, Valeriu Beiu, and Hoda Amer (*UAE University, Maqam Campus, Al Ain, UAE*)

On Wires at Low Electron Densities Valeriu Beiu, Walid Ibrahim, and Rafic Z. Makki (*College of IT, UAE University, UAE*)

Confinement in Quantum Wire Periodic Nanostructures S. Rodríguez-Bolívar, F.M. Gómez-Campos, A. Luque-Rodríguez, J.A. López-Villanueva, J.E. Carceller (*University of Granada, Spain*)

Synthesis and Modelling of Co-encapsulated PPI dendrimers M. Franckeviciusa, L. Rastenienea, A. Kulbickasa, J. Tamulienea, M. Marcosb, J.L. Serranob, G.J. Babonasc, I. Simkienec, G. Badenesd, R. Vaisnorasa (*Vilnius Pedagogical University, Vilnius, Lithuania; Universidad de Zaragoza Zaragoza, Spain; Semiconductor Physics Institute,Vilnius, Lithuania; Institute of Photonic Sciences, Mediterranean Technology Park, Barcelona, Spain*.)

Analytical Modeling of Tunneling Current in Graphene Nanoribbon Field Effect Transistors Alireza Kargar (*Shiraz University, Shiraz, Iran*)

Functional Model of Carbon Nanotube Programmable Resistors Weisheng ZHAO, Guillaume Agnus, Vincent Derycke, Arianna Filoramo, Christian Gamrat andd Jean-Philippe Bourgoin (*Laboratoire d'Electronique Moléculaire, Service de Physique de L'Etat Condensé CNRS URA 2464, CEA, IRAMIS, France*)

As_2S_3 photonic crystals for spontaneous emission control of PbSe\CdSe core-shell quantum dots Elisa Nicoletti, Dario Buso, Guangyong Zhou, Baohua Jia, Douglas Bulla, Barry Luther-Davies, and Min Gu (*Swinburne University of Technology*, *Melbourne, Australia*)

Analytical study of synchronization in spin-transfer-driven nano-oscillators Roberto Bonin, Giorgio Bertotti, Claudio Serpico, Massimiliano d'Aquino, and Isaak D. Mayergoyz (*Politecnico di Torino-Sede di Verr`es, I-11029 Verr`es, Aosta, Italy*)

Modelling the Spread of a nanodrop on a substrate via Molecular Dynamics Method Yaser Merrikhi Ahangarkolaee, Kaveh Tabatabaie, and Hashem Rafii-Tabar (*Shahid Beheshti University, Tehran, Iran)*

Vibration Suppression and Positioning of AFM Tip for Nanomanipulation using Sliding Mode Approach Hesam Babahosseini, Seyed Hanif Mahboobi, Aria Alasty, and Ali Meghdari (*Sharif University of Technology, Tehran, Iran*)

Analysis of Hafnium and Nitrogen Interstitial Defects at Si-Oxynitride Interfaces Athanasios Stefanou (*ESAT, K.U. Leuven, Belgium*)

Density Functional Theory Analysis of SiO_2-Oxynitride Interfaces Athanasios Stefanou (*ESAT, K.U.Leuven, Belgium*)

NDR Based Threshold Logic with Memristive Synapses Jeyavijayan Rajendran, Harika Manem and Garrett S. Rose (*Polytechnic Institute of NYU, Brooklyn, New York, USA*)

Nanocluster Evolution in Molecular Chains of Water under the Low-Energy Ion Irradiation **I. Tereshko, V. Abidzina, N. Kalinowskaya, I. Melnikau, A. Gorchakov, I. Elkin (**Belarusian-Russian University Mogilev, Belarus, NANTES – Systemy Nanotechnologii, Plc. Boleslawiec, Poland

Nanocluster Formation in Crystal **Lattices by Plasma Treatment V. Abidzina, I. Tereshko, I. Elkin (**Belarusian-Russian University Mogilev, Belarus, NANTES – Systemy Nanotechnologii, Plc. Boleslawiec, Poland**)**

Process Variation and 2-Way Redundancy in Grid-Based Nanoscale Processors Michael Leuchtenburg, Pritish Narayanan, Teng Wang, and Csaba Andras Moritz (*University of Massachusetts, Amherst, USA*)

Test Data Compression for any Quantum Boolean Circuits Yao-Hsin Chou and Sy-Yen Kuo (*National Taiwan University,Taipei, Taiwan*)

Threshold-Voltage Variations Effects on the Reliability of Nano-scale CMOS Logic Gates Mawahib Hussein Sulieman (*UAE University, UAE*)

Dynamic Simulation of Nanoparticle on the Stepped Substrate during AFM-Based Manipulation Hesam Babahosseini, Seyed Hanif Mahboobi, and Ali Meghdari (*Sharif University of Technology, Tehran, Iran*)

Surface Trench Characterization with Amplitude Modulation AFM: Tip Shape Effects Hossein nejat Pishkenari and Ali Meghdari (*Sharif University of Technology, Tehran, Iran*)

Optimization of optical behaviour of InGaN-GaN QW Green LEDs by incorporating a novel graded Indium Composition in the active layer Arvind Pawan R. and Dhanavantri C (*Birla Institute of Technology and Science, Pilani, India*)

Optical Characterization of Ultrathin Anisotropic Dielectric Films on Absorbing Materials Peep Adamson (*University of Tartu, Tartu 51014,Estonia*)

Numerical Study of DIBL effect in Carbon Nanotube-FETs Hailiang Zhou, Bingcai Sui, Yaqing Chi, Minxuan Zhang, and Yue Hao (*Xidian University China and National University of Defense Technology, China*)

Processing and Modeling of Multi-Walled Carbon Nanotube/Styrene-Butadiene-Styrene (SBS) Composites for Force Sensing Zhi Feng Wang, Pei Wang, Xiong Ying Ye and Bo Jiang (*Tsinghua University, Beijing, China*)

Investigation of Coupled Mechanical/Electric Effects of Strained Semiconductor Quantum Structures E. Fohtung, A.A. Minkevich, A.A. Matyshev, and T. Baumbach (*St Petersburg State Technical University, Russia ANKA-Light Source, Institute for Synchrotron Radiation, Germany*)

8.00 AWARDS BANQUET

THURSDAY, JULY 30

8.00-16.00 Registration

8.30-9.30 PLENARY SESSION

8.30-9.30 **Plenary lecture: Fifteen Years of Nanorobotics** Aristides Requicha (*University of Southern California, USA*)

9.30-10.45 ROUND*TABLE*: **Future Developments of Nanotechnology** Francesco Beltrame *(CNR, IT),* Luigi Nicolais *(Università degli Studi di Napoli "Federico II", IT),* Alberto L. Sangiovanni - Vincentelli *(Berkeley Wireless Research Center USA - Politecnico di Milano, IT)*, Peter Hatto *(IonBond Limited, UK)*

9.30-10.45 SESSION TH1_2: Magnetic Nanostructures for Logic and Other Technologies

9.30-10.00 **Invited talk: Domain-Wall Trapping and Control on Submicron Magnetic Wire by Localized Fields** Lili Ji, Gyorgy Csaba, Alexei Orlov, Gary H. Bernstein and Wolfgang Porod **(***University of Notre Dame, USA***)**

10.00-10.15 **A Technology Aware Magnetic QCA NCL-HDL Architecture** Mariagrazia Graziano, Alessandro Chiolerio, Maurizio Zamboni (*Polytechnic of Turin*, *Italy*)

10.15-10.30 **High-Field Domain-Wall Propagation in Magnetic Nanowires** X. R. Wang, Peng Yan, Jie Lu (*Hong Kong University of Science and Technology, China*)

10.30-10.45 **Silicon/metal hybrid material offering a two-fold magnetism** K. Rumpf, P. Granitzer, P. Poelt (*Karl Franzens University Graz, Graz, Austria*)

9.30-10.45 SESSION TH1_3: Imaging Studies of Nanomaterials

9.30-10.00 **Invited talk: From multiphoton microscopy to optical nanoscopy for nano characterization and fabrication** Alberto Diaspro (*Nanophysics, Italian Institute of Technology, Italy*)

10.00-10.15 **Near Infrared Surface Plasmon Resonance of Gold Nanoring based Plasmonic Crystals for Sensor Applications** Hao Jiang and Jayshri Sabarinathan (*University of Western Ontario, London, Ontario, Canada*)

10.15-10.30 **Multi-scale thermo-electric imaging for fast metrology and manipulation** Rachel J. Cannara, Abu Sebastian, Bernd Gotsmann, and Hugo Rothuizen (*IBM Zurich Research Laboratory, Switzerland*)

10.30-10.45 **Scanning Tunneling Spectroscopy of Hybrid Semiconductor Nanocrystals: Level Structure, Band Offsets and Localized States** Oded Millo, Dov Steiner, Uri Banin, Fabio Della Sala, and Liberato Manna *(The Hebrew University of Jerusalem, Israel)*

9.30-10.45 SESSION TH1_4: Nanobiomedicine Innovations

9.30-9.45 **Molecular Simulations of Micellar Carriers in Presence of High Intense Electric Fields** Paolo Marracino, Francesca Apollonio, Andrea Amadei, Micaela Liberti, Massimiliano Aschi, Alfredo Di Nola, and Guglielmo D'Inzeo (*ICEmB, University of Rome Sapienza, Rome, Italy*)

9:45-10.00 **Neuron-to-carbon nanotubes interface under temperature variations: modeling and simulation** Giuseppe Massobrio and Andrea Massobrio (*University of Genoa, Italy*)

10.00-10.15 **Data-driven Feedforward Design for Electroporation Mediated Gene Delivery** Ruoting Yang, Tzyh-Jong Tarn, and Mingjun Zhang (*University of Tennessee, Knoxville, USA*)

10.15-10.30 **Layer-by-Layer Coating of Photoactive Polymers for Biomedical Applications** Valeria Chiono, Irene Carmagnola, Piergiorgio Gentile, Francesca Boccafoschi, Chiara Tonda-Turo, George Georgiev, Momchil Ninov, Ventsislava Georgieva, Iva Pashkuleva, Rui Reis, Gianluca Ciardelli (*Polytechnic of Turin, Italy)*

10.30-10.45 **Studying the rheological properties of materials by microfluidics** Salvatore Girardo, Elisa Mele, Roberto Cingolani and Dario Pisignano (*NNL, National Nanotechnology Laboratory of CNR-INFM, Università degli Studi del Salento, c/o Distretto Tecnologico ISUFI, and Istituto Italiano di Tecnologia, Italy*)

10.45-11.15 Coffee break

11.15-12.45 SESSION TH2_1: Invited Session on Nanosensors

11.15-11.45 **Invited talk: A perfusion-based Micro Opto-Fluidic System (PMOFS) with GNP Signal Enhancement for Continuously In-situ Immune Sensingseng** Yuan-Tai Tseng, Chung-Shi Yang and Fan-Gang Tseng *(Institute of NanoEngineering and MicroSystems (NEMS), Nat. Tsing Hua University, Taiwan)*

11.45-12.15 **Invited talk: A gas sensing system for indoor air quality control and polluted environmental monitoring** Da-Jeng *Yao* *(Nat. Tsing Hua University, Taiwan)*

12.15-12.45 **Invited talk: Aptamer-Based Microfluidic Biosensors** Qiao Lin and Thai Huu Nguyen *(Columbia University, New York, USA)*

11.15-12.45 SESSION TH2_2: Invited Session on Bit-Patterned Media

11.15-11.45 **Invited talk: Bit-Patterned Magnetic Arrays for Magnetic Data Storage Applications** D. Litvinov, V. Parekh, A. Ruiz, D. Smith, Ch. E, L. Chang, P. Ruchhoeft,

S. Khizroev (*Department of Electrical and Computer Engineering, University of Houston, Houston, USA)*

11.45-12.15 **Invited talk: Novel patterned magnetic nanostructures for highdensity recording media** S.N. Piramanayagam, R. Sbiaa, K.O. Aung, E.L. Tan, R. Law, S. Deng, S.K. Wong *(Data Storage Institute, Agency for Science Technology and Research, Singapore)*

12.15-12.45 **Invited talk: Heat Assisted Magnetic Recording: The Ultimate Alternative to 1Tbit/in^2** R. Ikkawi, N. Amos, Y. Hijazi, D. Litvinov, S. Khizroev (*Electrical Engineering Department, University of California Riverside, USA*)

11.15-12.45 SESSION TH2_3: Nanocharacterization of Carbon Based Systems

11.15-11.30 **Nanopatterns on HOPG obtained by molecular adsorption** T. Svaldo-Lanero, A. Penco, M. Prato, R.Rolandi, M. Canepa, Ornella Cavalleri (*University of Genoa, Italy*)

11.30-11.45 **Tuning the Defect Density in Chemically Synthesised Graphene** Mohammad Choucair and John Arron Stride (*University of New South Wales School of Chemistry, Sydney, Australia*)

11.45-12.00 **Infrared Microscopy of Joule Heating in Graphene Field Effect Transistors** Myung-Ho Bae, Zhun-Yong Ong, David Estrada, and Eric Pop (*University of Illinois at Urbana-Champaign, USA*)

12.00-12.15 **Thermal Transport Properties of Carbon Nanotubes** Huaqing Xie, Yang Li (*Second Polytechnic University, Shangha, China*)

12.15-12.30 **Scanning probe microscopy with tetrapod-functionalized tips** Concetta Nobile, Paul D. Ashby, P. James Schuck, Angela Fiore, Rosanna Mastria, Roberto Cingolani, Liberato Manna, and Roman Krahn (*National Nanotechnology Laboratory of CNR-INFM, Unità di Ricerca IIT, Italy*)

11.15-12.45 SESSION TH2_4: Nanofabrication of CNT and Organics

11.15-11.30 **Direct writing of sub-5 nm metals on carbon nanotubes and graphene using a UHV-STM** Wei Ye, Pamela Martin, Navneet Kumar, Fan Zhang, Angus Rockett, John Abelson, Greg Girolami and Joseph Lyding *(University of Illinois at Urbana-Champaign, USA)*

11.30-11.45 **Taguchi Methodology to Grow Single-Walled Carbon Nanotubes on Silicon Wafer** Sandesh Jaybhaye, Alberto Ansaldo, Laxminarayan Singh, Maheshwar Sharon, Davide Ricci, and Ermanno Di Zitti *(University of Genoa, Italy)*

11.45-12.00 **Exploring Spray Technology for the Fabrication of organic thin-film devices based on Poly(3-hexylthiophene)** Alaa Abdellah, Daniela Baierl, Bernhard Fabel, Paolo Lugli, Giuseppe Scarpa (*Institute for Nanoelectronics, Technische Universität München, Germany*)

12.00-12.15 **Controllable fabrication of carbon nanotubes on catalystic nanoparticles derived from block copolymer micelles** Peng Xu, Xin Ji, Junlei Qi, Hongmin Yang, Weitao Zheng, Volker Abetz, Shimei Jiang *(Jilin University, Changchun, P. R. China)*

12.15-12.30 **Improving the Quality of Single-Walled Carbon Nanotube Networks** Alberto Ansaldo, Sandesh Jaybhaye, Marco Chiarolini, Ermanno Di Zitti, and Davide Ricci (*Istituto Italiano di Tecnologia, Genoa, Italy)*

12.30-12.45 **Controlled Electrochemical Polypyrrole and Carbon Nanotube Co-deposition onto Platinum Electrodes** Elisa Castagnola, Maurizio Biso, and Davide (*Istituto Italiano di Tecnologia, Genoa, Italy)*

12.45-2.15 Lunch

2.15-3.45 SESSION TH3_1: Nanosensors

2.15-2.30 **Polyelectrolyte-coated Alginate Microspheres for Optical Urea Sensing** M. Swati, and Rohit Srivastava (*School of Biosciences and Bioengineering (SBB), IIT Bombay, Powai, Mumba, India*)

2.30-2.45 **Evaluation of Thermal Conduction of Single Carbon Nanotube by Local Heating in Air** Naoki Inomata, Takahiro Kato, Fumihito Arai (*Tohoku University, Japan*)

2.45-3.00 **pH Sensor Using Protein-Mediated Gold Nanocrystal Array** Amit Prakash and Siddheswar Maikap (*Chang Gung University, Taiwan*)

3.00-3.15 **Nonlinearity in Nanoelectromechanical Resonator** Sungwon Moon, Seong Chan Jun, H. Jin Kim, X. M. H. Huang (*Seoul National University, Korea; Yonsei University, South Korea, Columbia University, USA*)

3.15-3.30 **Magneto-resistance Sensor based Scanning Probe Microscopy** D. R. Sahoo, A. Sebastian, H. Bhaskaran, W. Häberle, P. Bächtold, H. Pozidis, and E. Eleftheriou (*IBM Research GmbH, Zürich Research Laboratory, Zürich, Switzerland*)

3.30-3.45 **High Surface Plasmon Resonant Sensitive Silver Nanoplates for Detection of C-reactive Protein** Margaret E. Brennan Fournet, Denise Charles, Deirdre Ledwidth, Muriel Voisin, Stephen Cunningham, Patrick Fournet, Damian Aherne, Werner J. Blau and John M. Kelly (*National University of Ireland Galway, Galway, Ireland*)

2.15-3.45 SESSION TH3_2: Magnetic Nanoparticles and Films

2.15-2.30 **Ultra-Low Power Logic Design Using Non-Majority Nano-Magnets** Charles Augustine, Behtash Behin-Aein and Kaushik Roy *(Charles Augustine Nanoelectronics Research Laboratory Purdue University, USA)*

2.30-2.45 **Microstructural and Magnetic Properties of CoCu Nanoparticles Prepared by Wet Chemistry** Ignacio García, José A. Pomposo, Jon Echeberria, Maxim Ilyn, Konstantin Guslienko, and Julián M. González (*Universidad del País Vasco, San Sebastián, Spain*)

2.45-3.00 **Synthesis and magnetic properties of Co-doped wurtzite ZnS nanocrystals** Chong Bi, Liqing Pan, Mei Xu, Liangqiang Qin and Jinhua Yin (*University of Science and Technology Beijing, China*)

3.00-3.15 **Morphology and magnetic properties of island-like Co films obtained by de-wetting as catalysts for carbon nanotube arrays** Stefano Bianco, Sanju Gupta, Paola Tiberto, Paola Martino, Alessandro Chiolerio, Federica Celegato, Paolo Pandolfi, Alberto Tagliaferro, Paolo Allia *(Polytechnic of Turin, Italy*)

2.15-3.45 SESSION TH3_3: Transport in Nanostructures II

2.15-2.30 **Geometry Dependent I-V Characteristics of Gold Atomic-Sized Contacts** Saeideh Mohammadzadeh, Reinhard Streiter, and Thomas Gessner (*Chemnitz University of Technology, Chemnitz, Germany*)

2.30-2.45 **Electrical Transport Study of Individually-Wired Colloidal Nano-Rods** Hadar Steinberg, Dov Steiner, Omri Wolf, Adam Faust, Yigal Lilach, Asaf Salant, Gabi Menagen, Einat Elmelem, Uri Banin and Oded Millo (*Hebrew University, Jerusalem, Israel*)

2.45-3.00 **Transport Properties of SW and MW Carbon Nanotube Bundles** M. Salvato, M. Cirillo, M. Lucci, S. Orlanducci, I. Ottaviani, M. L. Terranova, and F. Toschi (*University of Rome ‘‘Tor Vergata, Rome, Italy*)

3.00-3.15 **Circuit Models for Coupled Fermi Oscillators** Pier Paolo Civalleri, Marco Gilli, and Michele Bonnin (*Polytechnic of Turin, Italy*)

3.15- 3.30 **Nano-Manipulator Force Transducer Modeling Based on Atomic Force Microscopy** Moharam Habibnejad Korayem and Khadijeh Daeinabi *(Iran University of Science and Technology Tehran, Iran Islamic Azad University Tehran, Iran)*

2.15-3.45 SESSION TH3_4: Nanofabrication of Materials

2.15-2.30 **Electrical Single-Molecule Detection in Nanochannel for Single-Molecular Sorter** Takatoki Yamamoto and Teruo Fujii (*Tokyo Institute of Technology, Tokyo, Japan*)

2.15-2.30 **Fast resistive switching in WO_3 thin films for nonvolatile memory applications** Carsten Kügeler, Robert Weng, Roland Rosezin, Stephan Menzel, Ulrich Böttger and Rainer Waser (*Institute of Solid State Research, Germany*)

2.30-2.45 **Fabrication and Characterization of Nanostructured HfO_2 powder and ultra-thin films** Fabio Henrique de Moraes Cavalcante, Artur Wilson Carbonari, Daniel de Abreu Rosseto, Maria José Ribeiro Gomes, Luciano Fabricio Dias Pereira, José Mestnik-Filho, Rajendra Narain Saxena, Solange Eiko Mitani, Leandro Hostalácio Freire de Andrade, and José Carvalho Soares (*Instituto de Pesquisas Energéticas e Nucleares IPEN-CNEN/SP, São Paulo, Brasil*)

2:45-3:00 **Assembling uniform oxide lines and layers by overlapping dots and lines using AFM local oxidation** Andrea Notargiacomo and Ampere A Tseng (*Università Roma TRE, Rome, Italy*)