

14th Semiconducting and Insulating Materials Conference

SIMC-XIV, May 15-20, 2007

University of Arkansas, Fayetteville, Arkansas 72701, USA

Tuesday Morning, May 15, 2007

Chair: Gregory Salamo

Room:

8:00 AM - 8:45 AM Opening Ceremony

SIMC2007

Session: **Towards Functional Nanomaterials I**

Chairs:

Tuesday Morning, May 15, 2007

Room:

9:00 AM T0202076 (Invited)

Active Terahertz Media with Nanodots or Nanowires

Michael S. Shur¹, A. P. Dmitriev^{1,2}, V. Yu. Kachorovskii^{1,2}, and V. V. Popov³

¹Center for Integrated Electronics, ECSE and Physics, Rensselaer Polytechnic Institute, Troy, NY 12110

²Also with A. F. Ioffe Physics Technical Institute, 26 Politekhnicheskaya St., St. Petersburg, 194021, Russia

³Institute of Radio Engineering and Electronics (Saratov Division), RAS, Zelyonaya 38, 40019 Saratov, Russia

9:30 AM T0206082 (SPC)

Optical properties of semiconductor-metal nanocrystal molecules

Alexander Govorov¹, Jaebeom Lee², and Nicholas A. Kotov²

¹Department of Physics and Astronomy, Ohio University, Athens, OH, 45701

²Department of Chemical Engineering, Materials Science and Engineering, and Biomedical Engineering, University of Michigan, Ann Arbor, MI, 48109

10:00 AM S0129070

From quantum wire arrays to 2D superlattices through nanohole patterning

Riccardo Rurali, Jordi Suñé, and Xavier Cartoixa

Departament d'Enginyeria Electrònica, Universitat Autònoma de Barcelona (UAB)

Campus de la UAB, 08193 Bellaterra (Barcelona), Spain

10:15 AM T0110063

Layers of metal nanoparticles on semiconductors deposited by electrophoresis from solutions with reverse micelles

K. Zdansky¹, P. Kacerovsky¹, J. Zavadil¹, J. Lorincik¹, A. Fojtik²

¹Institute of Photonics and Electronics, Academy of Sciences of the Czech Republic, 18251 Prague 8, Czech Republic

²Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University, Prague, Czech Republic

10:30 AM A0215132

Structural and magnetic properties of MnAs/GaAs ferromagnetic semiconductor nanocomposite material

A. Kwiatkowski¹, D. Wasik¹, M. Kamińska¹, R. Bożek¹, J. Szczytko¹, and A. Twardowski¹, J. Borysiuk², J. Sadowski³, J. Gosk⁴

¹ Institute of Experimental Physics, Warsaw University, Hoża 69, 00-681 Warsaw, Poland

² Institute of Electronic Materials Technology, Wólczyńska 133, 01-919 Warsaw, Poland

³ Institute of Physics, PAS, Al. Lotników 32/46, 02-668 Warsaw, Poland and MAX-Lab, Lund University, 221 00 Lund, Sweden

⁴ Faculty of Physics, Warsaw University of Technology, Koszykowa 75, 00-662 Warsaw, Poland

10:45 AM Break

11:00 AM T0202076 (Invited)

Few-Walled Carbon Nanotubes: A Better Candidate for Bulk Applications than Single Walled Carbon Nanotubes

Jie Liu

Department of Chemistry, Duke University, Durham, NC 27708, USA

11:30 AM F1215011

Cluster Origin of Transfer Phenomena of Single-Wall Carbon Nanotubes

Francisco Torrens and Gloria Castellano

Institut Universitari de Ciència Molecular, Universitat de València, Edifici d'Instituts de Paterna, P. O. Box 22085, 46071, Departamento de Química, Universidad Politécnica de Valencia, 46022, and Facultad de Ciencias Experimentales, Universidad Católica de Valencia San Vicente Mártir, 46003, València, Spain

11:45 AM T1221034

Influence of anodic conditions on self-ordered growth of highly aligned Titanium oxide nanotubes

V. Vega¹, V.M. Prida¹, M. Hernández-Vélez^{2,3}, E. Manova³, E. Ruiz-Hitzky³ and M. Vázquez³

¹ Depto. Física, Universidad de Oviedo, Calvo Sotelo s/n, 33007-Oviedo, Asturias, Spain

² Depto. Física Aplicada C-XII, UAM, Campus Cantoblanco, 28049-Madrid, Spain

³ Instituto Ciencia Materiales de Madrid, (CSIC), Campus Cantoblanco, 28049-Madrid, Spain

12:00 AM W1221027 (SPC)

Size and orientation effects on the thermal and mechanical properties of GaN nanowires

Zhiguo Wang¹, Xiaotao Zu¹, Fei Gao², and William J. Weber²

¹ Department of Applied Physics, University of Electronic Science and Technology of China, Chengdu, 610054, People's Republic of China

² Pacific Northwest National Laboratory, P. O. Box 999, Richland, WA 99352, USA

12:15 PM T0219142 (NOC)

Optical Properties of Single GaN nanotip pyramid grown by polarization selection chemical etching

A. Neogi¹, A. Mohammadizadeh¹, J. Li¹, H. Ng², T. Kawazoe³, M. Ohtsu³

¹ University of North Texas, Denton, Texas, USA

² Bell Laboratories, Alcatel-Lucent Technologies, NJ, USA

³ University of Tokyo, Tokyo, Japan

12:30 PM Withdraw

Nanoscale NiO Islands Loaded SnO₂ Semiconductor Sensor for Detection of Home Fuel (LPG)

Divya Haridas, K. Sreenivas and Vinay Gupta

Department of Physics and Astrophysics, University of Delhi, Delhi-110007

12:45 PM T0403178

Some Research Progress in Carbon-based Nanotubes and

One-dimensional AlN Nanostructured Materials

Zheng Hu

Key Laboratory of Mesoscopic Chemistry of MOE and Jiangsu Provincial Lab for NanoTechnology, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210093, China

SIMC2007

Session: **Towards Functional Nanomaterials II**

Chairs:

Tuesday Afternoon, May 15, 2007

Room:

2:00 PM T0222150 (Invited)

Conductivity and luminescence of charged quantum dots

Philippe Guyot-Sionnest

University of Chicago, Chicago, IL 60637

2:30 PM T0305165 (Invited)

Conductivity and luminescence of charged quantum dots

Xiaogang Peng

Dept of Chem. & Biochem, U of Arkansas, Fayetteville, AR 72701

3:00 PM T1219016

Impact of Surface States on the Emission Properties of Colloidal CdSe and CdSe/ZnS Quantum Dots

Giovanni Morello, Marco Anni, Davide Cozzoli, Liberato Manna, Roberto Cingolani and Milena De Giorgi
National Nanotechnology Laboratory (NNL), CNR – INFM Distretto Tecnologico ISUFI, via Arnesano,
73100 Lecce, Italy

3:15 PM T0215129

Molecular Dynamics Simulations of CdS nanocrystals

Chad E. Junkermeier^{1,2}, Jason M. Ard², Garnett W. Bryant³, James P. Lewis¹

¹Dept. of Physics, West Virginia University, Morgantown WV 26506

²Dept. of Physics & Astronomy, Brigham Young University, Provo UT 84602

³NIST, 100 Bureau Drive, Stop 8423, Gaithersburg, MD 20899-8423

3:30 PM T0225154

Optical Properties of Electrochemically Charged Quantum Dots

Praket P. Jha and Philippe Guyot-Sionnest

James Frack Institute, University of Chicago, 929 E. 57th Street, Chicago, IL 60637

3:45 PM T0405180

Intraband spectroscopy and band offsets of colloidal II-VI core/shell structures

Anshu Pandey and Philippe Guyot-Sionnest

James Frack Institute, University of Chicago, 929 E. 57th Street, Chicago, IL 60637

4:00 PM Break

4:15 PM T0123067 (Invited)

Solution Synthesis of Silicon and Germanium Nanowires and Their Applications

Brian A. Korgel

Department of Chemical Engineering, Texas Materials Institute, Center for Nano- and Molecular Science and Technology, The University of Texas at Austin, Austin, TX 78712

4:45 PM T0304164 (Invited)

Nanoimprinted 2D photonic crystals made of polymer doped with II-VI nanocrystals

V. Reboud¹, N. Kehagias¹, M. Zelsmann^{1,2}, M. Striccoli³, M. Tamborra⁴, M. L. Curri³, A. Agostiano^{3,4}, M. Fink⁵, F. Reuther⁵, G. Gruetzner⁵ and C. M. Sotomayor Torres¹

¹ Tyndall National Institute, University College Cork, Lee Maltings, Cork, Ireland
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² LTM-CNRS, c/o CEA-LETI, 17 rue des martyrs, 38054 Grenoble, France

³ CNR IPCF Sezione Bari c/o Dipartimento di Chimica, Università di Bari, Italy

⁴ Dipartimento di Chimica, Università di Bari, via Orabona 4, I-70126 Bari, Italy

⁵ micro resist technology GmbH, Berlin, Germany

5:15 PM T0215110

NiO semiconducting nanostructured films for hydrogen gas sensors

I. Hotovy¹, J. Huran², L. Spiess³, H. Romanus³, S. Capone⁴, D. Buc¹

¹ Microelectronics Department, Slovak University of Technology, Ilkovicova 3, 812 19 Bratislava, Slovakia.

² Institute of Electrical Engineering, Slovak Academy of Sciences, Bratislava, Slovakia,

³ Department of Materials Technology, Technical University of Ilmenau, Germany

⁴ Institute of Microelectronics and Microsystems, IMM-CNR, Lecce, Italy

5:30 AM T0215137

Utilizing interdiffusion property between Au/III-V interfaces to grow gallium oxide nanowires via simple annealing

Chun-I Wu and Timothy P. Hogan

Department of Electrical and Computer Engineering, Michigan State University,
East Lansing, MI 48824

Outdoor BBQ dinner for Tuesday, May 15, 2007 (depending on the weather)

SIMC2007

Session: **Wide Band Gap Semiconductors I**

Chairs:

Tuesday Morning, May 15, 2007

Room:

9:00 AM W01300073 (Invited)

Room-Temperature Ferromagnetism and Structure in Doped ZnO Epitaxial Films

Scott A. Chambers

Fundamental Science Directorate, Pacific Northwest National Laboratory
Richland, WA USA

9:30 AM W0222148 (IAC)

Field-controlled diffusion – An interesting approach for Schottky-based ZnO devices

Peter Kiesel, Oliver Schmidt

Palo Alto Research Center, Inc., 3333 Coyote Hill Rd., Palo Alto, CA 94304, USA

10:00 AM W1212008

Shallow and deep donors in n-type ZnO characterized by admittance spectroscopy

D. Seghier and H.P. Gislason

Science Institute, University of Iceland, Dunhagi 3, IS-107, Reykjavík, Iceland

10:15 AM W1219014

Influence of Al doping on the optical constants of ZnO thin films by spray pyrolysis method

Mujdat Caglar¹, Saliha Ilican¹, Yasemin Caglar¹, Fahrettin Yakuphanoglu²

¹Anadolu University, Faculty of Science, Department of Physics, 26470, Eskisehir, TURKEY

²Firat University, Faculty of Arts and Sciences, Department of Physics, 23169, Elazig, TURKEY

10:30 AM W1219020

A solution route to the doping of ZnO nanostructures

Jingbiao Cui

Department of Physics and Astronomy, University of Arkansas at Little Rock, Little Rock, AR 72204

10:45 AM Break

11:00 AM W0303160 (NOC)

Electronic structure and electromechanical properties in ZnO under inplane strain

Zeyad Alahmed and Huaxiang Fu

Department of Physics, University of Arkansas, Fayetteville, Arkansas 72701, USA

11:30 AM W0215136 (Invited)

On the cause of unintentional n-type conductivity in ZnO

Anderson Janotti and Chris G. Van de Walle

Materials Department, University of California, Santa Barbara CA 93106-5050

12:00 PM W0126068

Study of Charged Surface on ZnO by Slow Oscillations in Optical Reflectance Spectra

J. Q. Ning and S. J. Xu

Department of Physics, the University of Hong Kong, Pokfulam Road, Hong Kong, China

12:15 PM W0214090

Improvement of crystalline quality of ZnO films grown on Si substrate by high-temperature sputtering

Young Yi Kim¹, Cheol Hyoun Ahn¹, Si Woo Kang¹, Bo Hyun Kong¹, Hyung Koun Cho¹, Ju Young Lee², and Hong Seung Kim²

¹ School of Advanced Materials Science and Engineering, Sungkyunkwan University, Korea

² Department of Semiconductor Physics, Korea Maritime University, Korea

12:30 PM W0215096

Growth and Characterization of Nano-structures in Thin Films of ZnO

Harish Bahadur¹, A.K. Srivastava¹, R.K. Sharma¹ and Sudhir Chandra²

¹ National Physical Laboratory, K.S. Krishnan Road, New Delhi-110012, INDIA

² Center for Applied Research in Electronics, Indian Institute of Technology, Hauz Khas, New Delhi-110016, INDIA

SIMC2007

Session: **Wide Band Gap Semiconductors II**

Chairs:

Tuesday Afternoon, May 15, 2007

Room:

2:00 PM T0409182

Formation of self-organized TiO₂ nanotube arrays by pulse anodization

Wilaiwan Chanmanee¹, Apichon Watcharenwong¹, C. Ramannair Chenthamarakshan², Puangrat Kajitvichyanukul³, Norma R. de Tacconi² and Krishnan Rajeshwar²

¹ National Research Center for Environmental and Hazardous Waste Management, Chulalongkorn University, Bangkok, Thailand

² Center for Renewable Energy Science and Technology (CREST) Department of Chemistry & Biochemistry, The University of Texas at Arlington Arlington, Texas, USA

³ Department of Environmental Engineering, King Mongkut's University of Technology Thonburi, Bangkok, Thailand

2:15 PM W0215106

Dependency of oxygen partial pressure on the characteristics of ZnO films grown by magnetron sputtering

Cheol Hyoun Ahn¹, Young Yi Kim¹, Si Woo Kang¹, Bo Hyun Kong¹, Hyung Koun Cho¹, Jun Ho Kim², and Ho Seong Lee²

¹ School of Advanced Materials Science and Engineering, Sungkyunkwan University, Korea

² Department of Materials Science and Metallurgy, Kyungpook National University, Korea

2:30 PM W0215120

Preparation and properties of ZnO layers grown by various methods

A. Vincze¹, J. Kovac^{1,2}, A. Satka^{1,2}, I. Novotny², J. Bruncko¹, D. Hasko¹, J. Skriniarova², K. Sthereva³

¹ International Laser Centre, Ilkovicova 3, 81219 Bratislava, Slovak Republic

² Department of microelectronics, Slovak University of Technology, Ilkovicova 3, 812 19 Bratislava, Slovak Republic

³ Department of Electronics, University of Rousse, Studentska 8, BG - 7017 Rousse, Bulgaria

2:45 PM W0215121

Bandgap Engineered Luminescent MgxZn1-xO Nanoalloys

Leah Bergman, John L. Morrison, Jesse Huso, Heather Hoeck, Erin Casy

Department of Physics University of Idaho

3:00 PM W0215124

ZnO nanostructures via spray deposition of solutions containing zinc chloride and thiocarbamide

T. Dedova, J. Klauson, A. Katerski, A. Mere, M. Krunk

Department of Materials Science, Tallinn University of Technology, Ehitajate tee 5, Tallinn 19086, Estonia

3:15 PM W0215125

Cobalt substituted ZnO thin films – potential candidate material for Spintronics Kanwal Preet Bhatti¹, Vivek Kumar Malik², and Sujeet Chaudhary¹

¹ Thin Film Laboratory, Department of Physics, Indian Institute of Technology Delhi

New Delhi 110016 (INDIA)

² Department of Physics, University of Fribourg, Chemin du Musée 3, CH-1700, Fribourg

3:30 PM W0215126

Spray Pyrolysis” synthesized aluminum doped ZnO Thin Films: Structural characterization

N. Muñoz Aguirre¹, L. Martínez Pérez², E. Buenrostro González¹, and O. Zelaya-Angel³

¹ Programa de Ingeniería Molecular del Instituto Mexicano del Petróleo, Eje Central Lázaro Cárdenas no. 152, Col. San Bartolo Atepehuacan, 07730 México D.F., México.

² Unidad Profesional Interdisciplinaria en Ingeniería y Tecnologías Avanzadas del Instituto Politécnico Nacional, Av. IPN No. 2580, Col. Barrio La Laguna Ticomán, C.P. 07340, México D.F. México.

³ Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, Av. IPN 2508, Col. San Pedro Zacatenco, 07000 México, D.F. México.

3:45 PM Break

4:15 PM W0215127

The role of concentration of zinc acetylacetonate played on the characteristics of ZnO Thin Films grown by the water-mist-assisted spray pyrolysis method

L. Martínez Pérez¹, N. Muñoz Aguirre² and O. Zelaya-Angel³

¹ Unidad Profesional Interdisciplinaria en Ingeniería y Tecnologías Avanzadas del Instituto Politécnico Nacional, Av. IPN No. 2580, Col. Barrio La Laguna Ticomán, C.P. 07340, México D.F. México.

² Programa de Ingeniería Molecular del Instituto Mexicano del Petróleo, Eje Central Lázaro Cárdenas no. 152, Col. San Bartolo Atepehuacan, 07730 México D.F., México.

³ Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, Av. IPN 2508, Col. San Pedro Zacatenco, 07000 México, D.F. México.

4:30 PM W0215139

Fabrication of ZnO and ZnOGa₂O₃ layers for the realization of bulk acoustic wave resonators

Y. Zaatar², R. Al Asmar^{1,2}, J. Podlecki¹, A. Foucaran¹

¹CEM2 – UNIVERSITE MONTPELLIER II - UMR CNRS 5507

Université Montpellier II, Place E. Bataillon, 34095 Montpellier - France.

²Faculté des Sciences et de Génie Informatique, Université Saint-Esprit de Kaslik, B.P. 446 Jounieh.

4:45 PM PM A1213009

Preparation and characterization Te-doped cadmium telluride based solar cell and related thin film materials by close spaced sublimation technique

N. Abbas Shah, A. Ali and A. Maqsood

Thermal Physics Laboratory, Department of Physics, Quaid-i-Azam University, Islamabad 45320, Pakistan

5:00 PM PM W0215105

Morphology control of 1-D ZnO nanostructures grown by metalorganic chemical vapor deposition

Dong Chan Kim¹, Bo Hyun Kong¹, Hyung Koun Cho¹, Jeong Yong Lee², and Dong Jun Park²

¹School of Advanced Materials Science and Engineering, Sungkyunkwan University, Korea

²Department of Materials Science and Engineering, KAIST, Korea

Outdoor BBQ dinner for Tuesday, May 15, 2007 (depending on the weather)

SIMC2007

Session: **Low Dimensional Semiconductor Nanostructures I**

Chairs: Xavier Cartoixa, Alexander Govorov

Wednesday Morning, May 16, 2007

Room:

8:00 AM S0223152 (Invited)

Growth of InAs quantum dots for intersubband applications

Erich Gornik^{1,2}, Aaron Maxwell² Andrews², Matthias Schramböck², and Gottfried Strasser²

¹Austrian Research Centers, Donau-City-Strasse 1, 1220 Wien, Austria

²Solid State Electronics Institute, TU Vienna, Floragasse 7/362, 1040 Wien, Austria

8:30 AM S0131074 (Invited)

Optical and Morphological Properties of Self-Assembled Quantum Dots Grown on Novel Index Surfaces

M.Henini

School of Physics and Astronomy, University of Nottingham, Nottingham NG7 2RD, U.K.

9:00 AM S0312169 (Invited)

Nanostructure Formation in III-V Semiconductor Heteroepitaxy; A Comparative Study of InAs/InP and InAs/GaAs

Tim Jones

Department of Chemistry, Imperial College London, London SW7 2AZ, United Kingdom

9:30 AM S0130072

Localized formation of self-assembled quantum structures on pre-patterned GaAs (100)

J H Lee, Zh M Wang, B L Liang, W T Black, Vas P Kunets, Yu I Mazur, and G J Salamo

Department of Physics, University of Arkansas, Fayetteville, Arkansas 72701, USA

9:45 AM Break

10:15 AM S0131075 (Invited)

Spintronics in GaAs coupled quantum dots

Jean-Pierre Leburton

Department of Electrical and Computer Engineering, 1406, W. Green Street, University of Illinois at Urbana-Champaign, Urbana, Ill 61801

10:45 AM S0317171 (Invited)

Quantum Information-Future of Microelectronics?

Pawel Hawrylak

Institute for Microstructural Sciences, National Research Council of Canada, Ottawa, Ontario, K1A 0R6, Canada

11:15 AM S0225156 (Invited)

Optical Spectroscopy of Quantum Dot Molecules

Dan Gammon

Naval Research Laboratory
Washington DC 20375

11:45 AM S0215130

Optical Signatures of Coupled Quantum Dots

E.A. Stinaff¹, M. Scheibner¹, A.S. Bracker¹, I.V. Ponomarev¹, V.L. Korenev², M.E. Ware¹, M.F. Doty¹, J. C. Kim¹, L. J. Whitman¹, T.L. Reinecke¹, D. Gammon¹

¹Naval Research Laboratory, Washington DC 20375, USA

²A.F. Ioffe Physical Technical Institute, St. Petersburg 194021 Russia

SIMC2007

Session: **Low Dimensional Semiconductor Nanostructures II**

Chairs:

Wednesday Afternoon, May 16, 2007

Room:

1:00 PM S0222149 (Invited)

Structural and optical properties of self assembled quantum posts and quantum wires

Pierre M. Petroff

Materials Department and Electrical and Computer Engineering Department.
University of California,
Santa Barbara, CA.93103, USA

1:30 PM S0214091 (SPC)

X-Ray Diffuse Scattering from Semiconductor Nanostructures

Martin Schmidbauer

Institute for Crystal Growth, Max-Born Str.2, D-12489 Berlin, Germany

2:00 PM S1218013

InGaAs dot-chains on nominal GaAs(001) surfaces

Dong Jun Kim, E. Addison Everett and Haeyeon Yang

Department of Physics, Utah State University, Logan, Utah 84322

2:15 PM S0214094

Morphology and self-assembling of SiGe/Si islands grown by liquid phase epitaxy in the near- and far non-equilibrium growth limits

Hanke, Michael¹, Boeck, Torsten²; Gerlitzke, Anne²; Syrowatka, Frank³; Heyroth, Frank³

¹Department of Physics, Martin-Luther-University Halle-Wittenberg, Halle /Saale, Germany.

²Institute of Crystal Growth, Berlin, Germany.

³Center of Materials Science, Halle /Saale, Germany

2:30 PM S0215109

Strain relief analysis of InN quantum dots grown on GaN

J.G. Lozano¹, A.M. Sánchez¹, R. García¹, S. Ruffenach², O. Briot² and D. González¹

¹ Departamento de Ciencia de los Materiales e IM y QI, Universidad de Cádiz, Apdo 40 E-11510 Puerto Real (Cádiz), Spain

² Groupe d'Etudes des Semiconducteurs, UMR 5650 CNRS, Place Eugène Bataillon, Université Montpellier II, 34095 Montpellier, France.

2:45 PM S0319174 (SPC)

Predicting and Understanding Order of Heteroepitaxial Quantum Dots

Lawrence H. Friedman

Penn State University, Dept. of Engineering Science and Mechanics.

3:00 PM Break

3:15 PM S0215108 (Invited)

III-V compound semiconductor Nanowires for optoelectronic applications

Q. Gao¹, H. Joyce¹, Y. Kim¹, H. H. Tan¹, C. Jagadish¹, H. Wang², Y. N. Guo² and J. Zou²

¹ Department of Electronic Materials Engineering, Research School of Physical Sciences and Engineering, The Australian National University, Canberra, ACT 0200, Australia

² School of Engineering, The University of Queensland, QLD 4072 Australia

3:45 PM S0225158 (Invited)

Submonolayer Quantum Dots for High Speed Surface Emitting Lasers

Nikolai Ledentsov and Dieter Bimberg

Institut fuer Festkoerperphysik and Center of NanoPhotonics, Technische Universitaet Berlin, Hardenbergstr. 36, 10623 Berlin, Germany

4:15 PM S1219017

Picosecond timescale carrier dynamics in InAs quantum dot: The role of a continuum background

Gabriele Rainò, Giuseppe Visimberga, Abdel Salhi, Massimo De Vittorio, Adriana Passaseo, Roberto Cingolani, and Milena De Giorgi

National Nanotechnology Laboratory, CNR – INFM Distretto Tecnologico ISUFI, via Arnesano, 73100 Lecce, Italy

4:30 PM S1221029

Electron states and light absorption in strongly oblate and strongly prolate ellipsoidal quantum dots at presence of electrical and magnetic fields

Karen G. Dvovyan, David B. Hayrapetyan, Eduard M. Kazaryan, Ani. A. Tshantshapanyan

Dept. of Applied Physics and Engineering, Russian-Armenian State University, 123 Hovsep Emin Str., Yerevan 0051, Armenia

4:45 PM S0219141 (SPC)

Ordering ferromagnetic semiconductor quantum dots

E. Marega Jr.^{1,2} and G. J. Salamo²

¹ Instituto de Fisica de Sao Carlos, Universidade de Sao Paulo, Sao Carlos, SP-Brazil

² Department of physics, University of Arkansan, Fayetteville, AR 72701

SIMC2007

Session: **Advances in Compound Semiconductors**

Chairs:

Thursday Morning, May 17, 2007

Room:

8:00 AM A0108062 (Invited)

InSb-Based Heterostructures for Electronic Device Applications

M.B. Santos, T.D. Mishima, and M. Edirisooriya

Homer L. Dodge Department of Physics and Astronomy, University of Oklahoma

8:30 AM A0303159 (Invited)

Controlling carrier dynamics in terahertz photonic devices

E. Castro-Camus¹, J. Lloyd-Hughes¹, L. Fu², S.K.E. Merchant¹, Y. J. Wang¹, H. H. Tan², C. Jagadish², and Michael B Johnston¹

¹University of Oxford, Department of Physics. Clarendon Laboratory, Parks Road, Oxford OX1 3PU, United Kingdom.

²Department of Electronic Materials Engineering, Research School of Physical Sciences and Engineering, Institute of Advanced Studies, Australian National University, Canberra, ACT 0200, Australia.

9:00 AM A0306167 (Invited)

Imaging of single magnetic dopants in III/V semiconductor hosts

P.M. Koenraad

COBRA, Eindhoven University of Technology, P.O.Box 513, 5600 MB, The Netherlands

9:30 AM A0214093

Optical spectroscopy of a semi-insulating GaAs/AlGaAs multiple quantum well system near double exciton-polariton and Bragg resonanc

V.V. Chaldyshev¹, A.S. Shkolnik¹, V.P. Evtikhiev¹, T. Holden²

¹Ioffe Institute, St.Petersburg 194021, Russia

²Brooklyn College of the City University of New York, USA

9:45 AM A0409181

Comparative assessment of the efficiency of Ti/TiO₂ electrodes prepared by different methods in the photoelectrocatalytic oxidation of azo dyes

M. E. OSUGI¹, C. R. Chenthamarakshan², N. R. de Tacconi², M. V. B. Zanoni¹, and K.Rajeshwar²

¹Departamento de Química Analítica, Instituto de Química, Universidade Estadual Paulista - UNESP, Araraquara, Brazil

²Center for Renewable Energy Science and Technology, Department of Chemistry and Biochemistry, The University of Texas at Arlington, Arlington, TX, USA

10:00 AM Break

10:15 AM A0215095 (NOC)

IV-VI lead salt materials for opto-electronic applications

Z. Shi, F. Zhao, D. Ray, D. Li, S. Mukherjee, S. Jain, J. Kar

School of Electrical and Computer Engineering, 202 West Boyd, University of Oklahoma, Norman, OK 73019

10:45 AM A0303162 (IAC)

Radiation detector grade bulk semi-insulating GaAs: Progress in material, electrodes technology and applications

F. Dubecký¹, P. Boháček¹, B. Zatl'ko¹, D. Korytár¹, P. Vagovič¹, I. Frollo², V. Juraš², J. Přibil², J. Mudroň³

¹ Institute of Electrical Engineering, Slovak Academy of Sciences, Dúbravská cesta 9, SK-841 04 Bratislava, Slovak Republic

² Institute of Measurement Science, Slovak Academy of Sciences, Dúbravská cesta 9, SK-841 04 Bratislava, Slovak Republic

³ Magic Trading Corporation, a.s. Kuzmányho 11, SK-031 01 Liptovský Mikuláš, Slovak Republic

11:00 AM A0213088

InP based semiconductor structures for radiation detection

O. Procházková, J. Grym, L. Pekárek, J. Zavadil, K. Žďánský
Institute of Photonics and Electronics ASCR, Chaberská 57, 182 51 Praha 8,
Czech Republic

11:15 AM A0215098

Narrow channel InAs magnetic sensors: dependence of sensitivity and noise on InAs thickness

J. Dobbert¹, Vas. P. Kunets¹, T. Morgan¹, D. Guzun¹, Yu. I. Mazur¹, G. J. Salamo¹, W. T. Masselink²
¹Department of Physics, University of Arkansas, Fayetteville, 72701

²Department of Physics, Humboldt-Universität zu Berlin, Newtonstrasse 15, 12489 Berlin, Germany

11:30 AM A0117066

Silicon oxide thin films obtained by Ar⁺ bombardment of Si (110) in oxygen atmosphere at room and high temperature

Chinshuang Lee^{1,2}, Chia Chan Chen³, Chin Shun Yu³, Shyong Lee³
Department of Physics¹, Institute of Material Science², Department of Mechanical Engineering³, National Central University, Chungli, Taiwan 320

11:45 AM A0215115

Physical properties of CdCl₂ treated CdTe thin films deposited by the CSS method

Abid Ali^{1,2}, Nazar Abbas Shah¹, and Asghari Maqsood¹

¹Thermal Physics Laboratory, Department of Physics, Quaid-i-Azam University, Islamabad 45320, Pakistan

²Optics laboratories Nilore Islamabad, Pakistan

SIMC2007

Tutorial Session: Growth and Characterization of Structural and Optical Properties of Polar and Non Polar GaN Quantum Dots

Instructors:

Bruno Daudin and Hubert Renevier
CEA-Grenoble, DRFMC SP2M/PSC
17 rue des martyrs
38054 Grenoble Cedex 9, France

Thursday Afternoon, May 17, 2007

1:00PM – 5:00 PM

Room:

Banquet dinner for Thursday, May 17, 2007

SIMC2007

Session: Complex Oxide Materials I

Chairs:

Thursday Morning, May 17, 2007

Room:

8:00 AM F1115002 (Invited)

Electrically controllable antiferromagnetic for spintronics

R. Ramesh

Department of Materials Science and Engineering and Department of Physics
University of California, Berkeley, CA 94720

8:30 AM F1219021 (Invited)

Unusual phenomena in ferroelectrics

L. Bellaiche, Huaxiang Fu, I. Kornev, Bo-Kuai Lai, Sergey Lisenkov, Ivan I. Naumov, I. Ponomareva,
Sergey Prosandeev and G.J. Salamo

Physics Department, University of Arkansas, Fayetteville, Arkansas 72701

9:00 AM F1221035

Micro-Raman and XRD studies of ferroelectric thin films towards nanoscale

Yu.I. Yuzyuk¹, V.M. Mukhortov^{1,2}, Yu.I. Golovko², P.E. Janolin³, B. Dkhil³, M. El Marssi⁴

¹ Faculty of Physics, South Federal University, Zorge 5, Rostov-on-Don, 344090 Russia

² South Scientific Center RAS, Rostov-on-Don, 344006 Russia

³ LSPMS, UMR 8580, Ecole Centrale Paris, Grande Voie des Vignes, 92295 Chatenay-Malabry Cedex,
France

⁴ LPMC, Universite de Picardie Jules Verne, 33 rue Saint-Leu, 80039 Amiens Cedex, France

9 :15 AM F1227054

Relaxor ferroelectrics and their structural and physical properties

B. Dkhil

1Laboratoire Structures, Propriétés et Modélisation des Solides, Ecole Centrale Paris, CNRS-UMR8580,
Grande Voie des Vignes 92295, Châtenay-Malabry Cedex, France

9:30 AM Break

10:00 AM F1222045 (Invited)

Novel functionality from artificial complex oxide heterointerfaces

Ho Nyung Lee

Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831, USA

10:30 AM F0319173 (Invited)

MBE of Lithium-Metal-Oxide Multifunctional Materials

W. Alan Doolittle

Georgia Institute of Technology, Atlanta, GA30332, USA

11:00 AM F0208085 (Invited)

Spin-controlled optical anomalies in magnetic insulators

A.V. Boris¹, N.N. Kovaleva¹, C. Bernhard², P. Popovich¹, P. Yordanov¹, A. Maljuk³, G. Khaliullin¹, and
B. Keimer¹

¹ Max Planck Institute for Solid State Research, Heisenbergstr. 1, D-70569 Stuttgart, Germany

² Department of Physics, University of Fribourg, Chemin du Musée 3,
CH-1700 Fribourg, Switzerland

³ Hahn-Meitner-Institut Berlin, Glienicker Str. 100, D-14109 Berlin, Germany

11:30 AM F0215133 (NOC)

Electromechanical Properties and Mechanisms in Newly Developed Electroactive Polymers

Z.-Y. Cheng

Materials Research and Education Center, Auburn University, Auburn, AL 36849, USA

SIMC2007

Session: **Complex Oxide Materials II**

Chairs:

Thursday Afternoon, May 17, 2007

Room

1:00 PM F1225052 (Invited)

Magnetic and electronic properties of layered cobalt dioxides $A_x\text{CoO}_2$ with $A=\text{Li, Na and K}$

J. Sugiyama

Toyota Central R&D Labs., Inc., Nagakute Aichi 480-1192 Japan

1:30 PM F0215100 (Invited)

Novel Perovskite Oxide Thin Film Heterostructures To Enable Temperature Insensitive Enhanced Performance Phase Shifting Devices

M. W. Cole¹, S. P. Alpay², E. Ngo¹, S. Hirsch¹, S. Zhong², J. D. Demaree¹, W. Nothwang¹, and G. Martin¹

¹U.S. Army Research Laboratory, Weapons and Materials Research Directorate,
Aberdeen Proving Ground, Maryland 21005

²Materials Science and Engineering Program, CMBE Department and Institute of Materials Science,
University of Connecticut, Storrs, Connecticut 06269

2:00 PM F0225155 (Invited)

Direct imaging of nano-scale electronic phase separation in $\text{La}_{1-x}\text{Ca}_x\text{MnO}_3$

J. Tao¹, M. Varela¹, S. J. Pennycook¹, W. D. Luo², S. T. Pantelides², D. Niebieskikwiat³, M.B. Salamon³, J. G. Wen³, J. M. Zuo³

¹Materials Science & Technology Division, Oak Ridge National Laboratory, Oak Ridge TN 37831

²Department of Physics and Astronomy, Vanderbilt University

³The Frederick Seitz Material Research Laboratory, University of Illinois at Urbana-Champaign

2:30 PM F0220145

Fundamental Examination of Residual Stress, Vacancies, Electric Field as a Function of Thickness in BST Thin Films

W. D. Nothwang¹, J. Andzelm¹, J. Clayton¹, P. Chung¹, J.D. Demaree¹, M. Greenfield¹, S.G. Hirsch¹, C. Hubbard¹, G.R. Martin¹, M.W. Cole¹, James Saal²

¹The Army Research Laboratory, APG, MD 21005

²The Pennsylvania State University, State College, PA 16802

2:45 PM Break

3:15 PM F0215122 (NOC)

Electronic and magnetic structure at the interfaces of strongly correlated insulators Chakhalian¹, J. W. Freeland³, G. Srajer³, J. Strempfer², G. Khaliullin², J.C. Cezar⁴, T. Charlton⁵, R. Dalgliesh⁵, C. Bernhard², G. Cristiani², H.-U. Habermeier², and B. Keimer²

¹University of Arkansas, Fayetteville, Arkansas 72701, USA

²Max Planck Institute for Solid State Research, Stuttgart D-70561, Germany

³Argonne National Laboratory, Argonne, Illinois 60439, USA

⁴European Synchrotron Radiation Facility, 38043 Grenoble, CEDEX 9, France

⁵ISIS Facility, Rutherford Appleton Laboratory, Chilton, Didcot, Oxon OX11 0QX, UK

3:45 PM F0303163 (Invited)

Theory of interface phenomena in correlated-electron heterostructures

Satoshi Okamoto^{1,2}

¹Department of Physics, Columbia University, 538 West 120th St., New York, NY 10027

²Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831

4:15 PM W0222147

A promising high-k gate stack Hf_xTi_{1-x}ON/SiO₂ for SiC MOS Devices

L. M. Lin and P.T. Lai

Department of Electrical and Electronic Engineering, the University of Hong Kong, Hong Kong

Banquet dinner for Thursday, May 17, 2007

SIMC2007

Session: **Wide Band Gap Semiconductors III**

Chairs:

Friday Morning, May 18, 2007

Room

8:00 AM W1222042 (Invited)

Radiative and nonradiative processes in (Al,In,Ga)N alloy films

S. F. Chichibu¹⁻³, A. Uedono², T. Onuma¹⁻³, B. A. Haskell⁴, A. Chakraborty⁴, T. Koyama¹⁻⁴, P. T. Fini⁴, S. Keller⁴, S. P. DenBaars^{3,4}, J. S. Speck^{3,4}, U. K. Mishra⁴, S. Nakamura^{3,4}, S. Yamaguchi⁵, S. Kamiyama⁵, H. Amano⁵, I. Akasaki⁶, J. Han⁶, and T. Sota⁷

¹ Tohoku University, Inst. Multidisciplinary Res. for Adv. Mater., Sendai 980-8577, Japan

² Univ. of Tsukuba, Inst. Appl. Phys., Tsukuba 305-8573, Japan

³ Japan Science and Technology Agency, NIPR, ERATO, Kawaguchi 332-0012, Japan

⁴ Univ. of California, Santa Barbara, Depts. of ECE and Materials, CA 93106, U.S.A.

⁵ Meijo Univ., High-Tech Research Centre, Nagoya 468-8502, Japan

⁶ Yale Univ., Technical Dept. of Electrical Engineering, CT 06520, U.S.A.

⁷ Waseda Univ., Dept. of Electrical Engineering and Bioscience, Shinjuku 169-8555, Japan

8:30 AM W0130071 (Invited)

EL and micro PL on wide bandgap semiconductor devices

F. Bertram¹, L. Reissmann¹, J. Christen¹, A. Dadgar^{1,2}, A. Krost^{1,2}

¹ Institute of Experimental Physics, Otto-von-Guericke-University, 39016 Magdeburg, Germany

² AZZURRO Semiconductors AG, Universitätsplatz 2, 39106 Magdeburg, Germany

9:00 AM W1207005

Buffer-Trapping Effects on Current Slump in AlGaIn/GaN HEMTs

A. Nakajima and K. Horio

Faculty of Systems Engineering, Shibaura Institute of Technology, 307 Fukasaku, Minuma-ku, Saitama 337-8570, Japan

9:15 AM W1221028

Growth of High Quality Non-polar and Semi-polar GaN on Nearly Lattice Matched ZnO Substrates

Hiroshi Fujioka^{1,2}, Atsushi Kobayashi¹, and Jitsuo Ohta^{1,2}

¹ Institute of Industrial Science, The University of Tokyo, 4-6-1 Komaba, Meguro-ku, Tokyo 153-8505, Japan

² Kanagawa Academy of Science and Technology, 3-2-1 Sakado, Takatsu-ku, Kawasaki 213-0012, Japan

9:30 AM W1222041

Carrier capture to deep Fe acceptors in semi-insulating GaN:Fe

S. Marcinkevičius, T. Aggerstam, A. Pinos, M. Linnarsson, and S. Lourdudoss

Department of Microelectronics and Applied Physics, School of Information and Communication Technology, Royal Institute of Technology (KTH), Electrum 229, S-164 40 Kista, Sweden

9:45 AM Break

10:15 AM W212087 (Invited)

New methods of reducing threading dislocations in GaN

D. Cherns

H.H. Wills Physics Laboratory, University of Bristol, Tyndall Avenue, Bristol BS8 1TL, UK

10:45 AM W1220026 (SPC)

MBE Growth of AlGaIn/GaN HEMTs on free-standing GaN substrates

D.F. Storma¹, D.S. Katzer¹, J.A. Roussos¹, J.A. Mittereder¹, R. Bass¹, S.C. Binari¹, Lin Zhou², David J. Smith², D. Hanser³, E.A. Preble³, and K.R. Evans³

¹Electronics Science & Technology Division, Code 6852, Naval Research Laboratory, 4555 Overlook Ave. SW, Washington, DC 20375 USA

²School of Materials and Department of Physics, Arizona State University, Tempe, AZ 85287

³Kyma Technologies, Inc., 8829 Midway West Road, Raleigh, NC 27617

11:15 AM W1222044

Growth and Characteristics of Bulk III-N Crystals

R. M. Frazier¹, B. N. Feigelson^{1,2}, M. E. Twigg¹

¹Naval Research Laboratory, Washington DC 20375

²SAIC

11:30 AM W1228057

Comparison of scanning micro-photo- and micro-electroluminescence spectroscopy of blue InGaIn light emitting diodes on Si(001) substrate

L. Reissmann¹, F. Schulze¹, J. Christen¹, T. Hempel¹, A. Dadgar^{1,2}, A. Krost^{1,2}

¹Institute of Experimental Physics, Otto-von-Guericke-University, 39016 Magdeburg, Germany

²AZZURRO Semiconductors AG, Universitätsplatz 2, 39106 Magdeburg, Germany

11:45 AM W0111064

Analysis of THz and sub-THz generation in submicron GaN diodes

V. A. Kochelap

Institute for Semiconductor Physics, National Academy of Sciences of Ukraine

Pr. Nauki 45, Kiev 03028, Ukraine

SIMC2007

Session: **Wide Band Gap Semiconductors IV**

Chairs:

Friday Afternoon, May 18, 2007

Room

1:00 PM W0213089 (IAC)

Structural perfection of laterally overgrown GaN layers grown in polar and non-polar direction

Z. Liliental-Weber

Lawrence Berkeley National Lab, Berkeley, CA

1:30 PM W0306166 (Invited)

Seeded growth of AlN crystals

Z. Herro, D. J. Zhuang, R. Schlessler, and Z. Sitar

Department of Materials Science and Engineering, North Carolina State University

2:00 PM W0309169 (Invited)

Properties of the state-of-the art bulk III-V nitride semiconductors

Jaime A. Freitas, Jr.

Naval Research Laboratory, Washington DC 20375-5347 – USA

2:30 PM W0202077

Thermal oxidation, etching and electrical characteristics of gallium oxide grown on the Ga-face of a bulk GaN substrate

Yi Zhou¹, Claude Ahly¹, An-jen Cheng¹, Tamara Isaacs-Smith¹, Michael Bozack¹, Chin-Che Tin¹, John Williams¹, Minseo Park¹, Dake Wang², N. Mark Williams³, Andrew Hanser³, Edward A. Preble³, and Keith Evans³

¹ Department of Physics and Department of Electrical and Computer Engineering, Auburn University, Auburn, AL 36849

² Department of Physics, Furman University, Greenville, SC 29613

³ Kyma Technologies, Inc., 8829 Midway West Road, Raleigh, NC 27617

2:45 PM Break

3:00 PM W0219143 (Invited)

InAlGa_N-based UV Light Emitters – Applications and Materials Challenges

Michael Kneissl

Institute for Solid State Physics, Technical University of Berlin, Eugene-Paul-Wigner Building, Hardenbergstraße 36, 10623 Berlin, Germany

3:30 PM W0319175 (Invited)

AlN deep-ultraviolet light-emitting diodes

Yoshitaka Taniyas

NTT Basic Research Laboratories, Japan

4:00 PM W0223153 (Invited)

InGa_N/Ga_N quantum wells and LEDs grown on LiAlO₂ substrates

R. Zhang¹, B. Liu¹, C.X. Liu¹, Z.L. Xie¹, J.Y. Kong¹, X.Q. Xiu¹, P. Han¹, Y.D. Zheng¹, J. Zhou², and S. M. Zhou²

¹ Jiangsu Provincial Key Laboratory of Advanced Photonic and Electronic Materials and Department of Physics, Nanjing University, Nanjing 210093, China

² Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences, Shanghai 201800, China

4:30 PM W0315170 (Invited)

Deep UV Optoelectronic Devices using AlInGa_N Material System

Asif Khan

University of South Carolina,
Columbia, SC 29028

5:00 PM W1222046

Effects of Dislocations on Photoluminescence in Ga_N and GaAs

Jeong Ho You and H. T. Johnson

Department of Mechanical Science and Engineering,

University of Illinois at Urbana-Champaign, Urbana, IL 61801 USA

5:15 PM S0403179 (Invited)

Advances in III-Nitride Based Quantum Dots and Photonic Crystal for Single Photon Sources

Yasuhiko Arakawa

RCAST, The University of Tokyo, 4-6-1 Komaba, Meguro, Tokyo 153-8505 Japan

SIMC2007

Session: **Wide Band Gap Semiconductors V**

Chairs:

Saturday Morning, May 19, 2007

Room:

8:00 AM W0215113 (Invited)

Latest developments in GaN-based quantum devices for infrared optoelectronics

E. Monroy

CEA-Grenoble, DRFCM/SP2M/PSC, 17 rue des Martyrs, 38054 Grenoble, France

8:30 AM W0215131 (IAC)

Mn and other magnetic impurities in GaN and other III-V semiconductors – perspective for spintronic applications

Maria Kaminska

Institute of Experimental Physics, Warsaw University, Hoza 69, 00-681 Warsaw, Poland

8:45 AM W0215135

Deep UV light emitting diodes and solar blind photodetectors grown by gas source molecular beam epitaxy.

S. Nikishin¹, B. Borisov¹, V. Kuryatkov¹, M. Holtz¹, G. A. Garrett², W. L. Sarney², A. V. Sampath², H. Shen², M. Wraback¹, A. Usikov³, and V. Dmitriev⁴

¹Nano Tech Center, Texas Tech University, Lubbock, Texas, 79409

²U.S. Army Research Laboratory, AMSRD-ARL-SE-EM, Adelphi, Maryland 20783

³TDI, Inc., 12214 Plum Orchard Dr., Silver Spring, MD 20904

9:00 AM W0413185

The defect level of a vacancy complex in silicon carbide

G. Ngetich and M. E. Zvanut

University of Alabama at Birmingham Department of Physics

9:15 AM W0208083 (SPC)

Microwave devices based on wide bandgap semiconductors

A.E.Belyaev

V.E.Lashkaryov Institute of Semiconductor Physics, Kiev, Ukraine

9:45 AM Break

10:15 AM W1225053 (SPC)

Two-dimensional conductivity of SiC heteropolytype junctions

A.A.Lebedev, V.V.Zelenin, A.N.Kuznetsov, P.L.Abramov, A.N.Smirnov, D.V.Shamshur, A. Chernyaev, A.S.Tregubova

A.F.Ioffe Physico-technical Institute, Polytekhnicheskaya 26, St.Petersburg 194021, Russia.

10:45 AM W1220025

Nitrogen doping of SiC thin films deposited by RF magnetron sputtering

M. A. Fraga¹, M. Massi¹, I. C. Oliveira¹, H. S. Maciel¹, S. G. Dos Santos Filho²

¹Plasmas and Processer Laboratory (LPP), Technological Institute of Aeronautics (ITA), SJ dos Campos, Sp, Brazil

²University of Sao Paulo, LSI/EPUSP, Sao Paulo, SP, Brazil

11:00 AM W1222036

Characterization of deep centers in semi-insulating SiC and HgI₂: Application of discharge current transient spectroscopy

Hideharu Matsuura, Miyuki Takahashi, Shunji Nagata and Kazuo Taniguchi
Osaka Electro-Communication University, 18-8 Hatsu-cho, Neyagawa, Osaka 572-8530, Japan

11:15 AM W1222043

A study of vacancies and vacancy pair defects in 4H SiC grown by halide chemical vapor deposition

M. E. Zvanut¹, G. Ngetich¹, H. J. Chung², A. Y. Polyakov², and M. Skowronski²

¹Department of Physics, University of Alabama at Birmingham, Birmingham, AL, USA

²Department of Materials Science and Engineering, 2Carnegie Mellon University, Pittsburgh, PA, USA

11:30 AM W0215123

Low temperature crystallization of amorphous silicon carbide thin films for fabricating p-n junction devices

Maruf Hossain and Shubhra Gangopadhyay

Department of Electrical and Computer Engineering, EBW 349, University of Missouri, Columbia, Missouri 65211

11:45 AM W0215102

Optical and structures properties of SiC nanocrystallites

M. Morales Rodriguez¹, A. Díaz Cano², T. V. Torchynska², J. Morales Rivas¹, G. Gomez Gasga² and M. Mynbaeva³

¹Posgrado en Ciencias e Ingeniería de Materiales, Universidad Autónoma Metropolitana, Unidad Azcapotzalco, Mexico D.F. 02200, Mexico

²SIP-National Polytechnic Institute, Mexico D.F. 07738, Mexico

³Ioffe Institute, St. Petersburg, 194021, Russia

SIMC2007

Formal Poster Session

Chairs:

Saturday Afternoon, May 19, 2007

1:00PM – 4:00 PM

Posters are on display throughout the conference to allow maximum access for attendees. The formal poster session is to stimulate dialogue between poster authors and other conference attendees. Poster presenters are requested to stand beside their poster during the formal poster session.

Room:

A1214010

Magneto-optical properties of GaP single crystal

M S Omar and T A Abbas

Department of Physics, College of Science, University of Salahaddin, Arbil, Iraqi Kurdistan, Iraq

A1220024

First-principles study of Indium adsorption on GaP(001) surface

D.F. Li^{1,2}, H.Y. Xiao¹, X.T. Zu¹, H.N.Dong²

¹Department of Applied Physics, University of Electronic Science and Technology of China, Chengdu, 610054, People's Republic of China

²Institute of Applied Physics and College of Electronic Engineering, Chongqing University of Posts and Telecommunications, Chongqing, 400065, People's Republic of China

A1222038

The Thermal Stability of SiGe/Si Heterostructure with Low-temperature Interlayer

Ma Tong-da¹, Tu Hai-ling¹, Cheng Bu-wen², Feng Quan-lin¹, Shao Bei-ling¹, Liu An-sheng¹

¹General Research Institute for Nonferrous Metals, Beijing 100088, P. R. China;

²Institute of Semiconductors, CAS, Beijing 100083, P. R. China

A1224047

First-principles study of electronic properties of $A_2Ti_2O_7$ (A=Sm, Gd,Er) pyrochlore

H.Y. Xiao^{1,2}, X.T.Zua¹, L.M. Wang², Fei Gao³

¹Department of Applied Physics, University of Electronic Science and Technology of China, Chengdu, 610054, People's Republic of China

²Department of Nuclear Engineering & Radiological Sciences, University of Michigan, Ann Arbor, Michigan 48109-2104, USA

³Pacific Northwest National Laboratory, MS K8-93, P. O. Box 999, Richland, WA 99352

A0205079

An Accurate and Fast Schrödinger-Poisson solver using finite element method

Md. Kawsar Alam, Ahsan-Ul-Alam, Sabbir Ahmed, Md. Golam Rabbani and Quazi Deen Mohd. Khosru
Department of Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology, Dhaka-1000, Bangladesh

A0215097

Radiation effects in natural quartz crystals

Harish Bahadur¹, He'le'ne Tissoux² and Shin Toyoda²

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²Department of Applied Physics, Okayama University of Science, Okayama, 700-0005 JAPAN

A0215099

Low Thermal Drift in Highly Sensitive Doped Channel AlGaAs/GaAs/InGaAs micro-Hall Magnetometer

Vas. P. Kunets¹, J. Dobbert¹, Yu. I. Mazur¹, G. J. Salamo¹, H. Kostial², E. Wiebicke², U. Müller³, W. T. Masselink³

¹Department of Physics, University of Arkansas, Fayetteville, Arkansas 72701, USA

²Paul-Drude-Institut für Festkörperelektronik, Hausvogteiplatz 5-7, 10117 Berlin, Germany

³Department of Physics, Humboldt-Universität zu Berlin, Newtonstrasse 15, 12489 Berlin, Germany

A0215111

Investigation of NiOx-based contacts on p-GaN

J. Liday¹, G. Ecke², I. Hotovy¹, H. Sitter³, I. Vavra⁴, P. Vogrinčič¹, A. Bonanni³

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²Center for Micro- and Nanotechnologies, Technical University of Ilmenau, Gustav Kirchhoff-Str. 7, D-98693 Ilmenau, Germany

³Institute of Semiconductor and Solid State Physics, Johannes Kepler University, Altenbergerstr. 69, A-4040 Linz, Austria

⁴Institute of Electrical Engineering, Slovak Academy of Sciences, Dúbravská cesta 9, 841 04 Bratislava, Slovakia

A0215116

Structural and Electrical properties of thermally evaporated 1,4-Bis-(2-hydroxyethylamino)-9,10-anthraquinone Films

R. K. Bedi¹, Sonik Bhatia², Navneet Kaur³, Subodh Kumar³

¹Material Science Laboratory, Department of Physics, Guru Nanak Dev University, Amritsar-143 005, India

²Post Graduate Department of Physics, Kanya Maha Vidyalaya, Jalandhar-144004, India

³Department of Chemistry, Guru Nanak Dev University, Amritsar-143 005, India.

A0215138

Study of alloys' contact resistance to Ag-Pb-Sb-Te based thermoelectric material

Chun-I Wu and Timothy P. Hogan

Department of Electrical and Computer Engineering, Michigan State University, East Lansing, MI 48824

A0303161

Low Temperature Grown GaAs/InP strained heterojunction: micro-Raman spectroscopy and X-ray diffraction study

František Dubecký¹, Rudolf Srnánek², Claudio Ferrari³, and Joachim John¹

¹ Institute of Electrical Engineering, Slovak Academy of Sciences, Dúbravská cesta 9, 841 04 Bratislava, Slovak Republic

² Microelectronic Department, Slovak University of Technology, Ilkovičova 3, 812 19 Bratislava, Slovak Republic

³ IMEM-CNR, Parco Area delle Scienze 37/A, I-430 10 Parma-Fontanini, Italy

⁴ Katholic University, Minderbroedersstraat 8A, NL-3000 Leuven, The Netherlands

A0409183

COMBUSTION SYNTHESIZED TiO₂ FOR PHOTOCATALYTIC APPLICATIONS

Walter Morales, C. R. Chenthamarakshan, N. R. de Tacconi, and K. Rajeshwar

Center for Renewable Energy Science and Technology (CREST), Department of Chemistry and Biochemistry, The University of Texas at Arlington, Arlington, TX, USA

F1227055

Cooperative Jahn-Teller Transition in Li[LixMn_{2-x}]O₄ spinel: a micro-SR view

J. Sugiyama¹, K. Mukai¹, Y. Ikeda¹, P.L. Russo², T. Suzuki³, I. Watanabe³, J.H. Brewer⁴, E.J. Ansaldo⁴, K.H. Chow⁵, K. Ariyoshi⁶, and T. Ohzuku⁶

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³ Muon Science Laboratory, RIKEN, 2-1 Hirosawa, Wako, Saitama 351-0198, Japan,

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⁵ Department of Physics, University of Alberta, Edmonton, AB, T6G 2J1 Canada, and

⁶ Department of Applied Chemistry, Graduate School of Engineering, Osaka City University, Osaka 558-8585, Japan

F0105061

Design and Construction of an Optical Slab Waveguides Made by Ion Exchange on Glass Slides

Kaveh Delfan Azari¹, Farzad Taidy², Shabnam Hashemi.D³, M.Mozafari⁴

¹ Shahid Sattari Research Center, Electronics Lab, Tehran, Iran

² KNT University of Technology, Tehran, Iran

³ Central Branch of Tehran Azad University, Tehran, Iran

⁴ Power Research Center, Tehran, Iran

F0214092

Hydrothermal Synthesis of beta-Mn₂V₂O₇ Microtubes and Hollow Microspheres

Yi Liu^{1,2}, Xiangping Jiang¹, Tianwei Guo¹, Yitai Qian²

¹ Department of Material, Jingdezhen Ceramic Institute, Jingdezhen 333000, P. R. China

² Hefei National Laboratory for Physical Sciences at Microscale, Department of Chemistry and Department of Physical Chemistry, University of Science & Technology of China, Hefei 230026, P. R. China

F0317172

First-Principles studies of Ferroelectric Nanodomains

Bo-Kuai Lai, Inna Ponomareva, Ivan Naumov, Igor Kornev, Huaxiang Fu, Laurent Bellaiche, and Gregory Salamo

Department of Physics, University of Arkansas, AR 72701, USA

S1221030

Light Absorption in Coated Ellipsoidal Quantum Lenses

Ani. A. Tshantshapanyan, Karen G. Dvovyan, Eduard M. Kazaryan

Dept. of Applied Physics and Engineering, Russian-Armenian State University, 123 Hovsep Emin Str., Yerevan 0051, Armenia

S1225051

Polarized Raman spectroscopy and x-ray diffuse scattering of (In,Ga)As/GaAs(100) quantum-dot chains

V.V. Strelchuk^{1,2}, Yu. I. Mazur¹, Zh. M. Wang¹, M. Schmidbauer³, O.F.Kolomys¹, M. Ya.Valakh², M.O. Manaresh⁴, G. J. Salamo²

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²Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Pr. Nauky 45, 03028 Kyiv, Ukraine

³Institut für Kristallzüchtung, D-12489 Berlin, Germany

⁴Department of Electrical Engineering, University of Arkansas, Fayetteville, Arkansas, 72701

S1225058

Thermally induced modification of structural properties in ordered (In,Ga)As/GaAs quantum dots

V.V. Strelchuk¹, V. P. Kladko¹, M. V. Slobodian¹, Yu. I. Mazur², Zh. M. Wang², G. J. Salamo²

¹Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Pr. Nauky 45, 03028 Kyiv, Ukraine

²Department of Physics, University of Arkansas, Fayetteville, Arkansas, 72701

S1225081

Effects of (In,Ga)As quantum dots 2D ordering in multilayer structures on GaAs (100) and (N11) substrates

P. M. Lytvyn^{1,2}, V.V. Strelchuk², Yu. I. Mazur¹, Zh. M. Wang¹, O. F. Kolomys², M. Ya. Valakh², G. J. Salamo¹

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S0225157

Industrial Scale Simulation Of Band Structure and Optical Characteristics of Quantum Structure Semiconductor Lasers

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T1113001

Effect of residual stress on n doped nano-crystalline silicon deposited by HWCVD films

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T1202003

Channel routing in QCA circuits

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T1207004

Growth and effect of SHI irradiation of CdZn (S1-xSex) 2 nano structured thin film deposited by solution growth technique for photo sensor applications

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T1218012

Field emission from well-aligned ZnO nanostructures with different morphology

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T1221031

A study on phase change materials for Ultra High Density Non-volatile Memory Application

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T1221032

A study on growth-dominated phase change recording materials for blu-ray disk application

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T1221033

Microstructure and Luminescence Properties of Co-doped SnO₂ Nanoparticles by Hydrothermal Method

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T1230059

Synthesis of tungsten oxide nanorods by Chemical Vapor Deposition and its analysis

X. P. Wang, Noel Upia, Hongxin Zhang, Boqian Yang and P. X. Feng

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T0212086

Studies on characterization techniques of nano structured materials

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T0215134

Fabrication and Characterization of Amorphous Magnetostrictive Fe-B Nanorods

Suiqiong Li, Liling Li, Kehao Zhang, Z.-Y. Cheng

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T0409184

Logic gates using Magnetic Dots

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W1212007

Dislocation scattering in a two-dimensional electron gas of an AlGa_N/Ga_N heterostructure

Q.S.Zhu, X.X.Han, D.B.Li, H.R.Yuan, X.H.Sun, X.L.Liu, X.H.Wang, and Z.G.Wang
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W1213015

Dependence of optical properties on the film thickness of spray pyrolyzed transparent IZO thin films

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W1219018

Effect of heat treatments on the physical properties of ZnO thin films by sol-gel spin coating method

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W1219019

Low temperature electrochemical growth of ZnO nanostructures

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W1222037

A graphical peak analysis method for characterizing impurities in SiC, GaN and diamond from temperature-dependent majority-carrier concentration

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W1222039

Off-Center Hydrogenic Impurity States in a Spherically Symmetric Rectangular Quantum well

Lyudvig S. Petrosyan, Bagrat J. Pogosyan, Eduard M. Kazaryan

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Yerevan 0051, Armenia

W1224048

Properties of ZnO in presence of variable electric field

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W1224049

Thermoelectric power of SnO₂ anisotropic thin films

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W1224050

Fabrication of the nominally undoped p-type ZnO thin film by SSCVD

L. P. Dai, H. Deng, J. J. Chen, M. Wei

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W1228056

Binding Energy of Hydrogen-Like Impurities in Quantum Well Wires of InSb/GaAs in a magnetic field

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W0105060

Effect of Laser annealing on refractive indices of rf sputtered amorphous SiC thin films

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W0111065

The recent advances of research on p-type ZnO thin film

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W0111069

New Red Luminescence of Nitrogen-Implanted ZnO Crystals

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W0206080

An opto-electronic humidity sensor for high humidity range using pulsed laser deposited ZnO film

Shobhna Dixit, K. C. Dubey, Atul Srivastava, Anchal Srivastava and R. K. Shukla

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W0215101

Optical and structural characteristics of thermal annealed n-ZnO /p-GaN heterojunction light-emitting diodes on Al₂O₃ substrates

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³ Materials Science & Metallurgy, Kyungpook National University, Daegu 7020701, Korea

W0215103

Influence of VI/II flow ratio on the growth of ZnO thin films using low temperature MOCVD

Bo Hyun Kong, Dong Chan Kim, and Hyung Koun Cho

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W0215104

Homoepitaxial ZnO nanorod growth on ZnO films by thermal evaporation

Sang Ouk Jun, Young Yi Kim, Bo Hyoun Kong, and Hyung Koun Cho

School of Advanced Materials Science and Engineering, Sungkyunkwan University, Korea

W0215107

Growth and Characteristics of Ternary Zn_{1-x}Mg_xO Films by Magnetron Co-sputtering

Si Woo Kang, Young Yi Kim, Cheol Hyoun Ahn, and Hyung Koun Cho

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W0215112

Electrical Characterization of 4H-SiC Schottky Diodes with RuO₂ and RuWO_x Schotky Contacts

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W0215114

MBE growth of semipolar AlN(11-22) and GaN(11-22) layers on m-sapphire

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W0220144

ZnO/c-Si heterojunction obtained by ZnO thin deposition onto silicon substrat

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W0221146

Resonant energy transfer due to exciton coupling in hybrid perovskites conjugated to GaN semiconductors

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W0320176

Study of wide band gap amorphous silicon carbide films deposited by PECVD

J. Huran¹, F. Dubecký¹, Hotový², J. Pezoldt³, N. I. Balalykin⁴

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T0328177

Fabrication of anatase nano crystalline TiO₂ and its investigation by Back-scattering micro-Raman and near normal reflection FTIR spectroscopy

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SIMC2007

Saturday Afternoon, May 19, 2007

Chairs: Gregory Salamo

4:15 PM - 5:00 PM Closing Discussion
