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978-1-558-99674-8 - Quantum Confined Semiconductor Nanostructures

Victor I. Klimov, Jillian M. Buriak, Danial D.M. Wayner, Francesco Priolo,

Bruce White and Leonid Tsybeskov

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Bruce White and Leonid Tsybeskov
Frontmatter
[More information](#)

CONTENTS

Preface.....xxi
Acknowledgments.....xxiii
Materials Research Society Symposium Proceedings.....xxiv

SYMPOSIUM E

QUANTUM DOT THEORY

**Tunnel-Coupled Quantum Dots: Atomistic Theory of
Quantum Dot Molecules and Arrays5**
Garnett W. Bryant, Javier Aizpurua, W. Jaskolski, and
Michal Zielinski

QUANTUM DOT GROWTH

**Occurrence of ‘Accidental’ InN Quantum Dots in Indium
Gallium Nitride/Gallium Nitride Heterostructures 13**
K.P. O’Donnell, R.W. Martin, M.E. White, S. Pereira,
J.F.W. Mosselmans, M.J. Tobin, N. Grandjean, and
B. Damilano

**1.6 µm Emission From InAs Quantum Dots Grown on a GaAs
Substrate Using an AlGaAsSb Metamorphic Buffer 19**
G. Balakrishnan, S. Birudavolu, L.R. Dawson, D.L. Huffaker,
Huifang Xu, and Yingbing Jiang

**Binary and Ternary Mercury Chalcogenide Quantum Dots
and Clusters..... 25**
Masaru Kuno, Keith A. Higginson, Syed B. Qadri,
Mohammad Yousuf, Benjamin L. Davis, and Hedi Mattoussi

**Semiconductor Nanocrystal Based Saturable Absorbers for
Optical Switching Applications..... 31**
James E. Reynolds and Michael LoCascio

**Self Assembled PbSe Quantum Dots With Almost Equal Sizes
Grown by MBE on PbTe/Si(111)..... 37**
Karim Alchalabi, Dmitri Zimin, and Hans Zogg

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Victor I. Klimov, Jillian M. Buriak, Danial D.M. Wayner, Francesco Priolo,
Bruce White and Leonid Tsybeskov
Frontmatter
[More information](#)

QUANTUM DOT OPTICS

Wavelength Selective Charge Storage in Self-Assembled InGaAs-GaAs Quantum Dots	45
M. Kroutvar, Y. Ducommun, J.J. Finley, M. Bichler, G. Abstreiter, and A. Zrenner	
Optical Properties of InAs/InP Planar Quantum Dot Microcavities.....	53
Dan Dalacu, Daniel Poitras, Jacques Lefebvre, Philip J. Poole, Geoff C. Aers, and Robin L. Williams	
Local Strain Effects in Near-Field Spectra of Single Semiconductor Quantum Dots	59
A.M. Mintairov, P.A. Blagnov, O.V. Kovalenkov, C. Li, J.L. Merz, S. Oktyabrsky, K. Sun, V. Tokranov, A.S. Vlasov, and D.A. Vinokurov	
Optical Properties of Semimagnetic Quantum Dots.....	65
S. Mackowski, T.A. Nguyen, H.E. Jackson, L.M. Smith, J. Kossut, G. Karczewski, and W. Heiss	
Resonant Photoluminescence and Excitation Spectroscopy of CdSe/ZnSe and CdTe/ZnTe Self-Assembled Quantum Dots.....	71
T.A. Nguyen, S. Mackowski, H. Rho, H.E. Jackson, L.M. Smith, J. Wrobel, K. Fronc, J. Kossut, G. Karczewski, M. Dobrowolska, and J. Furdyna	
Optical Properties of Self-Assembled InAs Quantum Dots Grown on InAlAs/InP(001)	77
B. Salem, T. Benyattou, G. Guillot, G. Bremond, J. Brault, and M. Gendry	

SINGLE QUANTUM DOT SPECTROSCOPY

Nonlinear Carrier Relaxation in a Single GaAs Self-Organized Quantum Dot.....	87
T. Kuroda, S. Sanguinetti, F. Minami, M. Gurioli, K. Watanabe, and N. Koguchi	

Cambridge University Press
978-1-558-99674-8 - Quantum Confined Semiconductor Nanostructures
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Bruce White and Leonid Tsybeskov
Frontmatter
[More information](#)

CHARGE AND SPIN

*** Charged Excitons in Self-Assembled Quantum Dots95**
R.J. Warburton, B. Urbaszek, E.J. McGhee, C. Schulhauser,
A. Högele, K. Karrai, A.O. Govorov, J.M. Garcia, B.D. Gerardot,
and P.M. Petroff

**Kondo-Excitons and Auger Processes in Self-Assembled
Quantum Dots 107**
A.O. Govorov, K. Karrai, R.J. Warburton, and
A.V. Kalameitsev

POSTER SESSION

**Sub-Wetting Layer Continuum States in the Self-Organized
Quantum Dot Samples 115**
K. Král, P. Zdenek, Z. Khás, and M. Cemansky

**Influence of In_{0.2}Ga_{0.8}As Strain-Reducing Layer on the Active
Region of Quantum Dot Superluminescent Diodes..... 119**
Z.Y. Zhang, Ch.M. Li, P. Jin, X.Q. Meng, B. Xu, X.L. Ye,
and Z.G. Wang

**Dislocation-Induced Spatial Alignment of Self-Assembled
InAs/GaAs Quantum Dots 129**
H.S. Lee, J.Y. Lee, T.W. Kim, and Y.J. Park

**Resonant Raman Scattering by Strained and Relaxed Ge
Quantum Dots 135**
Alexander G. Milekhin, Alexander I. Nikiforov,
Mikhail Ladanov, Oleg P. Pchelyakov, Dmitri A. Tenne,
Steffen Schulze, and Dietrich R.T. Zahn

**Raman Spectroscopy of Self-Assembled InAs Quantum Dots in
Wide-Bandgap Matrices of AlAs and Aluminium Oxide..... 141**
D.A. Tenne, A.G. Milekhin, A.K. Bakarov, O.R. Bajutova,
V.A. Haisler, A.I. Toropov, S. Schulze, and D.R.T. Zahn

**Hyper-Rayleigh Scattering and Fluorescence of CdS-ZnS
Nanoparticle Composites 147**
Yu Zhang, Xin Wang, Ming Ma, Degang Fu, Haiqian Zhang,
Ning Gu, Juzheng Liu, Zuhong Lu, Yi Ma, Ling Xu, Jun Xu,
and Kunji Chen

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Bruce White and Leonid Tsybeskov
Frontmatter
[More information](#)

Giant Exciton-Light Coupling in Large Size Semiconductor Quantum Dots 153
Bernard Gil and Alexey V. Kavokin

Up-Conversion Luminescence in Colloidal CdTe Nanocrystals..... 157
S.A. Filonovich, M.J.M. Gomes, Yu.P. Rakovich, J.F. Donegan,
D.V. Talapin, N.P. Gaponik, A.L. Rogach, and A. Eychmüller

Long-Lifetime Nonlinear Absorption of PbS Quantum Dots 163
Feiran Huang, Aleksey Filin, Pratima G.N. Rao,
Robert H. Doremus, and Peter D. Persans

**Chemically Functional Semiconductor Nanocrystals:
Electrochemistry and Self-Assembly on Surfaces 169**
Benjamin M. Hutchins, Andrew H. Latham, and
Mary Elizabeth Williams

GaSb-Based Nanocomposites as IR-Emitters 175
Ludmila Bakueva, Sergei Musikhin, Edward H. Sargent,
and Stephan Schulz

Investigation of the Shape of InGaAs/GaAs Quantum Dots..... 179
Susan Y. Lehman, Alexana Roshko, Richard P. Mirin, and
John E. Bonevich

**Shape Engineered InAs Quantum Dots With Stabilized
Electronic Properties..... 185**
V. Tokranov, M. Yakimov, A. Katsnelson, K. Dovidenko,
M. Lamberti, and S. Oktyabrsky

Si/Ge QUANTUM DOT STRUCTURES

**Silicon Epitaxial Regrowth Passivation of SiGe Nanostructures
Patterned by AFM Oxidation 193**
Xiang-Zheng Bo, Leonid P. Rokhinson, and J.C. Sturm

BIO-QUANTUM DOTS

**Synthesis of Semi-Conducting Nanoparticles Within a Protein
Template 201**
Kim K.W. Wong and Eric L. Mayes

Cambridge University Press
978-1-558-99674-8 - Quantum Confined Semiconductor Nanostructures
Victor I. Klimov, Jillian M. Buriak, Danial D.M. Wayner, Francesco Priolo,
Bruce White and Leonid Tsybeskov
Frontmatter
[More information](#)

***ELECTRIC FORCE MICROSCOPY
AND CHARGE INJECTION***

**Optical Detection of the Charging of InAs Quantum Dots With
Different Backgate Configurations209**
B. Su, L. Karsten, C. Schüller, D. Heitmann, A.A. Zhukov,
Ch. Heyn, and W. Hansen

TRANSPORT

*** Size and Shape Dependent Level Structure in CdSe Quantum Rods217**
Eli Rothenberg, Taleb Mokari, Uri Banin, David Katz,
Tommer Wizansky, and Oded Millo

**Current-Voltage Characteristics of Single CdSe Colloidal
Nanodots Measured by Conductive-Tip Atomic Force
Microscopy.....227**
Ichiro Tanaka, Eri Kawasaki, O. Ohtsuki, K. Uno, M. Hara,
H. Asami, T. Murase, and I. Kamiya

**Transport Properties of Superlattice Nanowires and Their
Potential for Thermoelectric Applications233**
Yu-Ming Lin and Mildred S. Dresselhaus

SYMPOSIUM F

***Si NANOCRYSTALS AND nc-Si
SUPERLATTICES***

*** Photoluminescence Within Crystalline-Si/SiO₂ Single
QuantumWells243**
D.J. Lockwood, M.W.C. Dharma-wardana, Z.H. Lu,
D.H. Grozea, P. Carrier, and Laurent J. Lewis

Charge Retention in Single Silicon Nanocrystal Layers.....253
Rishikesh Krishnan, Todd D. Krauss, and Philippe M. Fauchet

**Spectroscopic Ellipsometry Studies of Nanocrystalline Silicon
in Thin-Film Silicon Dioxide259**
Gerald E. Jellison Jr., Stephen P. Withrow, Supriya Jaiswal,
Christopher M. Rouleau, John T. Simpson, Clark W. White,
and C. Owen Griffiths

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Frontmatter

[More information](#)

Mechanisms of Visible Photoluminescence From Size-Controlled Silicon Nanoparticles.....	265
Toshiharu Makino, Nobuyasu Suzuki, Yuka Yamada, Takehito Yoshida, Ikurou Umezu, and Akira Sugimura	
* Synthesis and Size Control of Si Nanocrystals by SiO/SiO₂ Superlattices and Er Doping	271
J. Heitmann, D. Kovalev, M. Schmidt, L.X. Yi, R. Scholz, F. Eichhorn, and M. Zacharias	
Quantitative Charge Imaging of Silicon Nanocrystals by Atomic Force Microscopy.....	283
Tao Feng and Harry A. Atwater	
A New Synthetic Route to Alkyl Terminated Silicon Nanoparticles.....	289
Katherine A. Pettigrew, Philip P. Power, and Susan M. Kauzlarich	
Control of Silicon Quantum Dots Nucleation and Growth by CVD.....	295
F. Mazen, T. Baron, J.M. Hartmann, M.N. Semeria, and G. Brémond	
Synthesis of Crystalline Silicon Nanoparticles in Low-Pressure Inductive Plasmas	301
Ameya Bapat, Uwe Kortshagen, Stephen A. Campbell, Christopher R. Perrey, and C. Barry Carter	

SiGe NANOSTRUCTURES

* Self-Assembled Si/Ge Quantum Dot Structures for Novel Device Applications	309
K. Brunner, D. Bougeard, A. Janotta, M. Herbst, P.H. Tan, H. Riedl, M. Stutzmann, and G. Abstreiter	
* Effect of Phosphorus on Ge/Si(001) Island Formation.....	321
Theodore I. Kamins, Gilberto Medeiros-Ribeiro, Douglas A.A. Ohlberg, and R. Stanley Williams	
* Anomalous X-ray Scattering on Self-Assembled Islands: Direct Evaluation of Composition Profile, Strain Relaxation, and Elastic Energy.....	329
A. Malachias, R. Magalhães-Paniago, G. Medeiros-Ribeiro, S. Kycia, T.I. Kamins, and R. Stan Williams	

*Invited Paper

Cambridge University Press
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Bruce White and Leonid Tsybeskov
Frontmatter
[More information](#)

POSTER SESSION

New Pairs of Inks and Papers for Photolithography, Microcontact Printing, and Scanning Probe Nanolithography.....341
Lon A. Porter Jr., Hee Cheul Choi, J.M. Schmeltzer,
Alexander E. Ribbe, and Jillian M. Buriak

Preparation and Characterization of Fine Barium Carbonate Particles.....347
Lihong Su, Shenru Qiao, Jun Xiao, Ying Huang, Aibo Zhang,
and Qiuyu Zhang

Comparative Study of the Growth Curves of *B. subtilis*, *K. pneumoniae*, *C. xerosis* and *E. coli* Bacteria in Medium Containing Nanometric Silicon Particles.....351
Lilyanna Pérez, Marjorie Flores, J. Avalos, L. San Miguel,
O. Resto, and L. Fonseca

Preparation and Photoactive Characterization of Tube-Shaped Al-Doped ZnO Ceramics357
Yoshinobu Fujishiro, M. Awano, and S. Kanzaki

Electron Irradiation on Amorphous Silicon365
Ju-Yin Cheng and J. Murray Gibson

The Effect of Chemical Treatment on Porous Silicon: The Role of Alcohol371
Masato Ohmukai, Mei Honda, Yumiko Kodama,
Hiroshi Tsunekuni, and Yasuo Tsutsumi

Clausius-Mossotti Approximation for Nonlinear Composites With Coated Ellipsoidal Particles.....377
Anatoliy O. Pinchuk

Transport Properties and Observation of Semimetal-Semiconductor Transition in Bi-Based Nanowires383
Yu-Ming Lin, Stephen B. Cronin, Oded Rabin,
Jackie Y. Ying, and Mildred S. Dresselhaus

Diffusional Coating of Nanoparticles.....389
James P. Lavine

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Bruce White and Leonid Tsybeskov

Frontmatter

[More information](#)

Raman Analysis of Carbon Nanotube Bundles for Bio-Electronic Applications.....	395
Shin G. Chou, Mildred S. Dresselhaus, Elen Humphreys, Sung Yoon Chung, John VanderSande, Yet Ming Chiang, A.K. Swan, M.S. Ünlü, and B.B. Goldberg	
Two-Dimensional Epitaxial Growth of Strained InGaAs on GaAs(001).....	401
Hong Wen, Zhiming Wang, and G.J. Salamo	
Optical Amplification in Nanocrystalline Silicon Superlattices	407
J. Ruan, H. Chen, and Philippe M. Fauchet	
Sol-Gel Template Synthesis and Liquid CO₂ Developed TiO₂/CdS Composite Nanowire Arrays.....	413
Bin Cheng, Clarence W. Murray, and Edward T. Samulski	
Patterned Structures of Silicon Nanocrystals Prepared by Pulsed Laser Interference Crystallization of Ultra-Thin a-Si:H Single-Layer.....	419
Xiaowei Wang, Feng Qiao, Leyi Zhu, Wei Li, Jian Li, Xinfan Huang, and Kunji Chen	
New Nanocrystalline Si Floating Gate Structure for Nonvolatile Memory Application	425
L.C. Wu, J.J. Shi, K.J. Chen, J. Xu, W. Li, Z.Y. Ma, M. Dai, D. Wu, A.D. Li, and X.F. Huang	
Periodic Two-Dimensional Arrays of Silicon Quantum Dots for Nanoscale Device Applications.....	431
Christopher C. Striemer, Rishikesh Krishnan, Qianghua Xie, Leonid Tsybeskov, and Philippe M. Fauchet	
Estimation of Silicon Nanocrystalline Sizes From Photoluminescence Measurements of RF Co-Sputtered Si/SiO₂ Films	437
A. Ramírez-Porras, L.F. Fonseca, and O. Resto	
Fabrication of Si-Ge Compound Nanowires by the FZ Melting Vapor Method	443
Quanli Hu, Hiroshi Araki, Hiroshi Suzuki, Nobuhiro Ishikawa, Wen Yang, and Tetsuji Noda	
Electrical Properties of Thin Nitrogen-Doped Ultrananocrystalline Diamond Films	449
V.I. Polyakov, A.I. Rukovichnikov, S.M. Pimenov, J.A. Carlisle, and D.M. Gruen	

Cambridge University Press
978-1-558-99674-8 - Quantum Confined Semiconductor Nanostructures
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Bruce White and Leonid Tsybeskov
Frontmatter
[More information](#)

Sol-Gel Derived Bi_{4-x}Nd_xTi₃O₁₂ Thin Films and Their Characterization455
R.E. Melgarejo, M.S. Tomar, A. Hidalgo, and R.S. Katiyar

2D Assemblies of Silicon Nanocrystallites Prepared by Sol-Gel Method From Triethoxysilane461
Jerôme Rouquette, Monique Pauthe, Michel Ramonda, Thierry Taliercio, Bernard Gil, and Kevin P. O'Donnell

The Effect of Hydrogen Incorporation on the Performance of Nanocrystalline Silicon Thin Film Transistors Fabricated by Microwave ECR Plasma CVD469
Lihong Teng and Wayne A. Anderson

SiC-Like Phase and Room-Temperature Photoluminescence of Low-k SiOCH Films475
V. Ligatchev, T.K.S. Wong, Rusli, B. Liu, and K. Ostrikov

Formation and Cathodoluminescence of Silicon Nanoclusters in Silica481
Maria V. Zamoryanskaya and Vladimir I. Sokolov

Nano-Scale Morphology and Electron Spectrum of Defect States in Low-k SiOCH Films487
V. Ligatchev, T.K.S. Wong, Rusli, B. Liu, and K. Ostrikov

Stoichiometry, Crystallinity, and Nano-Scale Surface Morphology of the Graded Calcium Phosphate-Based Bio-Ceramic Interlayer on Ti-Al-V493
J.D. Long, K. Ostrikov, S. Xu, and V. Ligatchev

Polarization Anisotropy in Electreflectance Spectrum of Porous Silicon499
Toshihiko Toyama, Yasuharu Nakai, Koji Moriguchi, and Hiroaki Okamoto

Carbon Nanotubes Grown on Metallic Wires by Cold Plasma Technique.....505
D. Sarangi and A. Karimi

Formation of SiGe Nanoparticles by Dry and Steam Thermal Oxidation of Thin Polycrystalline Layers.....511
M.I. Ortiz, C. Ballesteros, A. Rodríguez, J. Sangrador, T. Rodríguez, M. Avella, P. Martín, and J. Jiménez

Cambridge University Press

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Bruce White and Leonid Tsybeskov

Frontmatter

[More information](#)

Spectroscopic Study of Rare Earth Doped Nano-Crystalline Silicon in SiO₂ Films	517
C. Rozo, L.F. Fonseca, O. Resto, and S.Z. Weisz	
Characterization of Nanographite and Carbon Nanotubes by Polarization Dependent Optical Spectroscopy	523
Alexander Grüneis, Riichiro Saito, Georgii G. Samsonidze, Marcos A. Pimenta, Ado Jorio, Antonio G. Souza Filho, Gene Dresselhaus, and Mildred S. Dresselhaus	
Tunable Porous Silicon Mirrors for Optoelectronic Applications	529
Sharon M. Weiss, Mikhail Haurylau, and Philippe M. Fauchet	
Effect of Surface Treatments in Nanocrystalline Silicon	535
N.P. Mandal, S. Dey, and S.C. Agarwal	
Optical Properties of Silicon Nanoparticles in Silica Gel Monoliths	541
Y. Posada, L. San Miguel, L.F. Fonseca, O. Resto, and S.Z. Weisz	

**BIOACTIVE NANOSTRUCTURES
AND SURFACE CHEMISTRY**

Porous Silicon Electrical Biosensors	549
Marie Archer, Marc Christophersen, and Philippe M. Fauchet	
Preparation and Electrochemical Characterization of DNA-Modified Nanocrystalline Diamond Films.....	555
Wensha Yang, Orlando Auciello, James E. Butler, Wei Cai, John A. Carlisle, Jennifer E. Gerbi, Dieter M. Gruen, Tanya Knickerbocker, Tami L. Lasseter, John N. Russell Jr., Lloyd M. Smith, and Robert J. Hamers	
Functionalization of Porous Silicon With Alkenes and Alkynes via Carbocation-Mediated Hydrosilylation.....	561
J.M. Schmeltzer, Lon A. Porter Jr., Michael P. Stewart, Carmen M. López, and Jillian M. Buriak	
* Covalently-Linked Adducts of Single-Walled Nanotubes With Biomolecules: Synthesis, Hybridization, and Biologically-Directed Surface Assembly	567
Sarah E. Baker, Tami L. Lasseter, Lloyd M. Smith, and Robert J. Hamers	

*Invited Paper

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Bruce White and Leonid Tsybeskov
Frontmatter
[More information](#)

**Electroless Deposition and Patterning of Morphologically
Complex Precious Metal Films on Semiconductor Surfaces575**
Lon A. Porter Jr., Hee Cheul Choi, Alexander E. Ribbe, and
Jillian M. Buriak

**Effects of Amorphous Carbon Films on the Performance of
Porous Silicon Electroluminescence.....581**
Bernard Gelloz and Nobuyoshi Koshida

*NOVEL LITHOGRAPHIC TECHNIQUES
AND LATERAL NANOPATTERNING*

*** Nanoscale Organic Electronic Devices Formed by Lamination
With Stamps589**
Jana Zaumseil, Takao Someya, Zhenan Bao, Yueh-Lin Loo,
Kirk Baldwin, Raymond Cirelli, and John A. Rogers

*** Electrophoretic Deposition of CdSe Nanocrystal Films on
Conducting Electrodes595**
Mohammad A. Islam, Yuqi Xia, Benjamin J. Kraines, and
Irving P. Herman

Si Nanoparticle Synthesis and Self-Organization.....607
J.D. Fowlkes and A.J. Pedraza

*SEMICONDUCTOR NANOWIRES
AND NANOTUBES I*

**Direct Synthesis of Silicon Nanowires Using Silane and Molten
Gallium.....615**
Shashank Sharma, Mahendra K. Sunkara, and Elizabeth C. Dickey

**Quantitative V-L-S Growth Model and Experiments of Fe
Catalyzed Si Nanowire Formation621**
Guangwen Zhou, Judith C. Yang, Fengting Xu, John A. Barnard,
and Z. Zhang

Imaging, Structural and Chemical Analysis of Silicon Nanowires627
R.J. Barsotti Jr., J.E. Fischer, C.H. Lee, J. Mahmood,
C.K.W. Adu, and P.C. Eklund

*Invited Paper

Cambridge University Press
978-1-558-99674-8 - Quantum Confined Semiconductor Nanostructures
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Bruce White and Leonid Tsybeskov
Frontmatter
[More information](#)

*SEMICONDUCTOR NANOWIRES
AND NANOTUBES II*

Nano-Optics of Bismuth Nanowires.....635
M.R. Black, P.L. Hagelstein, and M.S. Dresselhaus

POSTER SESSION

The Pile-Ups of Aluminum and Boron in the SiGe(C)643
Hong-Jyh Li, David Onsongo, Taras A. Kirichenko,
Puneet Kohliand, and Sanjay K. Banerjee

**Evidence of Ti-Related Inclusions in an Al Alloy
Interconnecting Layer for Nanometer 256MBit DRAM
Semiconductor Devices Characterized by TEM, STEM,
EELS Elemental Mapping, and XEDS Linescan649**
Wei (Wayne) Zhao and Steve Graca

**Si Nanocrystals by Metal Induced Growth Using Different
Catalyzing Metals655**
Chunhai Ji and Wayne A. Anderson

**Exploiting Silicon Porosity Gradients for Superior
Antireflective Films661**
Christopher C. Striemer and Philippe M. Fauchet

**Polymorphous Silicon Nanowires Synthesized by Plasma-
Enhanced Chemical Vapor Deposition667**
X.B. Zeng, X.B. Liao, H.W. Diao, Z.H. Hu, Y.Y. Xu,
S.B. Zhang, C.Y. Chen, W.D. Chen, and G.L. Kong

**Anisotropy in the Phonon Dispersion Relations of Graphite
and Carbon Nanotubes Measured by Raman Spectroscopy673**
Georgii G. Samsonidze, Riichiro Saito, Ado Jorio,
Antonio G. Souza Filho, Alexander Grüneis,
Marcos A. Pimenta, Gene Dresselhaus, and
Mildred S. Dresselhaus

**Microstructure of the Silicon Film Prepared Near the Phase
Transition Regime From Amorphous to Nanocrystalline.....679**
Shibin Zhang, Xianbo Liao, Yanyue Xu, Zhihua Hu,
Xiangbo Zeng, Hongwei Diao, Muchang Luo, and
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 Bruce White and Leonid Tsybeskov
 Frontmatter
[More information](#)

Influence of Different Atmospheres on the Life Time of Porous Silicon Light-Emitting Devices.....	685
B.R. Jumayev, H.L. Tam, K.W. Cheah, and N.E. Korsunsk	
Investigation on Process Dependence of Self-Assembled Metal Nanocrystals	691
Chungho Lee, Zengtao Liu, and Edwin C. Kan	
TEM and PL Study of FeSi₂ Precipitates Formed in Si by Iron Implantation Using a Metal Vapor Vacuum Arc Ion Source.....	697
Y. Gao, W.Y. Cheung, S.P. Wong, G. Shao, and K.P. Homewood	
Characterization of Co-Catalyzed Multiwalled Carbon Nanotubes by High-Resolution Transmission Electron Microscopy.....	703
Chih-Chin Wang, Chuan-Pu Liu, Ruo-Mei Liu, and Kuen-Hou Liao	
Moisture Effects of Crack Initiation in Nanocrystalline Silicon: A Hybrid Density-Functional/Molecular-Dynamics Study.....	709
Shuji Ogata, Rachid Belkada, Fuyuki Shimojo, and Aiichiro Nakano	
Sol-Gel Synthesis and Characterization of CuO-Based Nanosystems	715
Lidia Armelao, Davide Barreca, Manuel Bertapelle, Gregorio Bottaro, Cinzia Sada, and Eugenio Tondello	
Particle Production in High Density Silane Plasma	721
Z. Shen, T. Kim, U. Kortshagen, P.H. McMurry, and S.A. Campbell	
The Microstructure of Co Nanoparticles Directly Deposited on Si (001) Substrates Using DC Magnetron Sputtering.....	727
Bing-Xian Chung, Chuan-Pu Liu, and Jiun-Nan Chen	
Generation of Silicon Nanocolumns by Nanosecond Pulsed-Excimer Laser Irradiation and Their Field Emission Properties.....	733
Yingfeng Guan, A.J. Pedraza, E.D. Ellis, and L.R. Baylor	
Low-Cost, Large-Area Nanocrystalline TiO₂-Polymer Solar Cells on Flexible Plastics.....	739
Krishna C. Mandal, Anton Smirnov, D. Peramunage, and R. David Rauh	

Cambridge University Press
978-1-558-99674-8 - Quantum Confined Semiconductor Nanostructures
Victor I. Klimov, Jillian M. Buriak, Danial D.M. Wayner, Francesco Priolo,
Bruce White and Leonid Tsybeskov
Frontmatter
[More information](#)

**Determination of the Charge Attached to Micro-Scale Devices
Used in Fluidic Self-Assembly Processes 745**
Eric Tkaczyk, Vandna Handa, Sangwoo Lee, Helen McNally,
Lichuan Gui, Steve Wereley, and Rashid Bashir

***METALLIC AND RARE EARTH
DOPED NANOPARTICLES***

**Stimulated Optical Transitions in Er-Doped Silicon
Nanostructures 755**
B.V. Kamenev, V.I. Emel’yanov, V.Yu. Timoshenko,
P.K. Kashkarov, E.I. Terukov, and V.Kh. Kudoyarova

**Electroluminescent Devices Based on Er-Doped Si
Nanoclusters 761**
F. Priolo, F. Iacona, D. Pacifici, A. Irrera, M. Miritello,
G. Franzò, D. Sanfilippo, G. Di Stefano, and P.G. Fallica

***THEORETICAL STUDIES AND
NUMERICAL SIMULATIONS IN
Si/SiGe NANOSTRUCTURES***

**Equilibrium Analysis of Lattice-Mismatched Nanowire
Heterostructures 769**
E. Ertekin, P.A. Greaney, T.D. Sands, and D.C. Chrzan

**Isolated and Embedded Silicon Based Nanodots: The Role of
Surface Oxygen 775**
Marcello Luppi and Stefano Ossicini

***APPLICATIONS OF GROUP (IV)
NANOSCALE MATERIALS***

**Observation of Quantum Confinement Effects in
Nanocrystalline Silicon Dot Floating Gate Single Electron
Memory Devices 783**
Shaoyun Huang, Souri Banerjee, and Shunri Oda

*** The Role of Nanoscale Silicon in Optical Interconnects 789**
Philippe M. Fauchet

*Invited Paper

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978-1-558-99674-8 - Quantum Confined Semiconductor Nanostructures
Victor I. Klimov, Jillian M. Buriak, Danial D.M. Wayner, Francesco Priolo,
Bruce White and Leonid Tsybeskov
Frontmatter
[More information](#)

*** Photon, Electron and Ultrasonic Emission From
Nanocrystalline Porous Silicon Devices801**
N. Koshida, B. Geloz, A. Kojima, T. Migita, Y. Nakajima,
T. Kihara, T. Ichihara, Y. Watabe, and T. Komoda

**Carrier Tunneling, Current Instabilities, and Negative
Differential Conductivity in Nanocrystalline Silicon-Silicon
Dioxide Superlattices813**
B.V. Kamenev, G.F. Grom, D.J. Lockwood, J.P. McCaffrey,
B. Laikhtman, and L. Tsybeskov

**Tuning of the Electroluminescence From Si Nanocrystals
Through the Control of Their Structural Properties.....819**
A. Irrera, F. Iacona, D. Pacifici, M. Miritello, G. Franzò,
D. Sanfilippo, G. Di Stefano, P.G. Fallica, and F. Priolo

Author Index825

Subject Index.....831

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Victor I. Klimov, Jillian M. Buriak, Danial D.M. Wayner, Francesco Priolo,

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Bruce White and Leonid Tsybeskov
Frontmatter
[More information](#)

PREFACE

Continued progress in nanoscale engineering, as well as an improved understanding of the physical phenomena at the nanometer scale, have contributed to the rapid development of novel nanostructured semiconducting materials and nanodevices. Using both "top-down" and "bottom-up" approaches, novel semiconductor structures can be fabricated with sub-nanometer accuracy and precisely controlled electronic and optical properties. The immense technological potential and new exciting physics have stimulated increasing interest in semiconductor nanostructures over the past several years.

Symposium E, "Physics and Technology of Semiconductor Quantum Dots," and Symposium F, "Nanocrystalline Semiconductor Materials and Devices," held December 2–5 at the 2002 MRS Fall Meeting in Boston, Massachusetts, were organized to provide a comprehensive forum for discussion of the most recent progress and the future directions in the nanoscale semiconductor research. These symposia brought together researchers from a variety of fields: materials science, physics, chemistry, electrical and microelectronic engineering, circuit design, etc. Each four-day symposium included four sessions for oral presentations and two evening sessions for poster presentations. In addition, Symposium F hosted the MRS Medal Award presentation by Prof. C.M. Lieber, which was attended by more than 400 people. Both symposia attracted more than 250 participants. The remarkable interest in topics discussed at these symposia demonstrates deep and continued commitment on the part of researchers and institutions worldwide, and suggest that the most interesting developments in the area of nanoscale semiconductors are yet to come.

These joint proceedings of Symposia E and F follow the order of the original symposia programs. We hope that this book reflects the exciting progress in the field of semiconductor nanostructures and will stimulate further interest to this area of research.

In conclusion, the editors would like to thank the authors, speakers, and session chairs of both symposia. Our special thanks go to the MRS staff for their tireless assistance to the organizers during the Meeting and during preparation of this volume.

Victor I. Klimov
Jillian M. Buriak
Danial D.M. Wayner
Francesco Priolo
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Frontmatter

[More information](#)

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