

CINT Publications Report for 2003-2010

2003-2006

1. T. Morimoto, Y. Iwase, N. Aoki, T. Sasaki, Y. Ochiai, A. Shailos, J.P. Bird, M. P. Lilly, J. L. Reno, and J. A. Simmons, "Nonlocal Resonant Interaction between Coupled Quantum Wires", *Appl. Phys. Lett.* 82, P. 3952–3954, (2003). CINT Proposal: Spin-Dependent Transport & Many-Body Interactions in Coupled Quantum, University of Buffalo, P2003140.
2. Anatoly Efimov, Antoinette J. Taylor, Fiorenza G. Omenetto, Jonathan C. Knight, William J. Wadsworth, and Philip St. J. Russell, "Simple Optical Profiling of Complex Guiding Structures," *Applied Optics* 43, 29 (2004). CINT Proposal: Nonlinear Optics in Photonic Crystal Fibers in the Mid-Infrared, University of Bath, P2003115/R2006a055.
3. T. Sasaki, T. Morimoto, Y. Iwase, N. Aoki, Y. Ochiai, A. Shailos, J.P. Bird, M. P. Lilly, J. L. Reno, and J. A. Simmons, "Novel Many-Body Transport Phenomenon in Coupled Quantum Wires," *IEEE Trans. Nanotech.* 3,110–114, (2004). CINT Proposal: Spin-Dependent Transport & Many-Body Interactions in Coupled Quantum, University of Buffalo, P2003140.
4. V. I. Puller, L. G. Mourkh, A. Shailos, and J.P. Bird, "Detection of Local-Moment Formation using the Resonant Interaction between Coupled Quantum Wires," *Phys. Rev. Lett.* 92, 96802, P1–4, (2004).
5. CINT Proposal: Spin-Dependent Transport & Many-Body Interactions in Coupled Quantum, University of Buffalo, P2003140.
6. Shailos, Y. Ochiai, T. Morimoto, Y. Iwase, N. Aoki, T. Sasaki, J.P. Bird, M. P. Lilly, J. L. Reno, and J. A. Simmons, "Coupled Quantum Wires as a Detector of Many-Body States below the Last Conductance Plateau," *Semicond. Sci. Technol.* 19, S405–S408, (2004). CINT Proposal: Spin-Dependent Transport & Many-Body Interactions in Coupled Quantum, University of Buffalo, P2003140.
7. J.P. Bird and Y. Ochiai, "Electron Spin Polarization in Nanoscale Constrictions", *Science* 303, 1621–1622, (2004). CINT Proposal: Spin-Dependent Transport & Many-Body Interactions in Coupled Quantum, University of Buffalo, P2003140.
8. X. H. Tan and Y. L. Shen, "Analysis of Indentation-Derived Yield Strength in Metallic Multilayers," in 2004 Asme International Mechanical Engineering Congress and Exposition, Paper Number: IMECE 2004-61393. CINT Proposal: Mechanical Characterization of Nanolayers using Nanoindentation, University of New Mexico, P2003126.
9. Anatoly Efimov, A. J. Taylor, F. G. Omenetto, A. V. Yulin, N. Y. Joly, F. Biancalana, D. V. Skryabin, J. C. Knight, and P. St. J. Russell, "Time-Spectrally-Resolved Ultrafast Nonlinear Dynamics in Small-Core Photonic Crystal Fibers: Experiment and Modeling," *Opt. Exp.* 12, 6498, (2004). CINT Proposal: Nonlinear Optics in Photonic Crystal Fibers in the Mid-Infrared, University of Bath, P2003115.
10. Y. Sun, S. F. Cheng, G. Chen, R. F. Hicks, J. G. Cederberg, and R. M. Biefeld, "The Effect of Antimony in the Growth of Indium Arsenide Quantum Dots in Gallium Arsenide (001)," *J. Appl. Phys.* 97, 053503-1-6, (2005). CINT Proposal: Surfactant Mediated Control of InAs Quantum Dot Self Assembly, University of California, Los Angeles, P2003191.
11. X. Zhang, A. Misra, H. Wang, J. G. Swadener, A. L. Lima, M. F. Hundley, and R. G. Hoagland, "Thermal Stability of Sputter-Deposited 330 Austenitic Stainless-Steel Thin Films with Nanoscale Growth Twins", *Applied Physics Letters*, 87, P. 233116, (2005). CINT Proposal: Synthesis and Mechanical Behavior of Metallic Thin Films with Nanoscale Growth Twins, Texas A&M University, U2006a031.
12. J.-K. Lee, C.R. Tewell, R.K. Schulze, M. Nastasi, D.W. Hamby, D.A. Lucca, H.S. Jung, and K.S. Hong, "Synthesis of ZnO Nanocrystals by Sequential Implantation of Zn and O Species", *Appl. Phys. Lett.* 86, P.183111, (2005). CINT Proposal: Quantum Confinement and Strain Effects in Photonic Nanocrystals, Oklahoma State University, P2003139/R2006a057.

13. Y. Sun, S. F. Cheng, R. L. Woo, and R. F. Hicks, "The Structure of Indium Phosphide (001) Treated with Trimethylantimony in a Metalorganic Vapor-Phase Epitaxy Reactor," *J. Appl. Phys.*, 97, 103512-1-5, (2005). CINT Proposal: Nanoscale Control of Indium Arsenide Antimony Quantum, University of California, Los Angeles, P2004023.
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15. R. P. Prasankumar, A. Scopatz, D. J. Hilton, A. J. Taylor, R. D. Averitt, J.M. Zide, A. C. Gossard, "Carrier Dynamics in Self-Assembled Eras Nanoislands Measured By Optical-Pump Thz- Probe Spectroscopy," 2005 Quantum Electronics and Laser Science Conference (QELS) (IEEE Cat. No. 05ch37696). IEEE. Part Vol. 1, 2005, Pp. 446-8 1. CINT Proposal: Optical and Terahertz Characterization of Epitaxially-Grown Semimetal/Semiconductor Nanocomposites, University of California, Santa Barbara, U2006a062.
16. S. Jeong, M. Achermann, J. Nanda, S. Ivanov, I. Klimov, and J. A. Hollingsworth, "Effect of the Thiol-Thiolate Equilibrium on the Photophysical Properties of Aqueous CdSe/ZnS Nanocrystal Quantum Dots", *J. Am. Chem. Soc.* 127: 10126, 2005. CINT Mini Dr, "Assembly and Actuation of Nanomaterials Using Active Biomolecules" (#20030419dr).
17. Y. Song, R. E. Haddad, S.-L. Jia, S. Hok, M. M. Olmstead, D. J. Nurco, N. E. Schore, J. Zhang, J.G. Ma, K. M. Smith, S. Gazeau, J. Pecaut, J.C. Marchon, C.J. Medforth and J. A. Shelnut, "Energetics and Structural Consequences of Axial Ligand Coordination in Nonplanar Nickel Porphyrins", *Journal of the American Chemical Society* 2005, 127, 1179. CINT Proposal: Highly Functional Nanomaterials Based On Self-Assembled Porphyrin Arrays, University of California, Davis, P2004035.
18. X. H. Tan and Y.L. Shen, "Modeling Analysis of the Indentation-Derived Yield Properties of Metallic Multilayered Composites," *Composites Science and Technology*, 65, 1639-1646 (2005). CINT Proposal: Mechanical Characterization of nanolayers Using Nanoindentation, University of New Mexico, P2003126.
19. Nicolas Y. Joly, Fiorenza G. Omenetto, Anatoly Efimov, Antoinette J. Taylor, Jonathan C. Knight and Philip St. J. Russell, "Competition Spectral Splitting and Raman Frequency Shift in Negative-Dispersion Slope Photonic Crystal Fiber," *Opt. Commun.* 248, 281, (2005). CINT Proposal: Nonlinear Optics in Photonic Crystal Fibers in the Mid-Infrared, University of Bath, P2003115.
20. R. P. Prasankumar, A. Scopatz, D. J. Hilton, A. J. Taylor, R. D. Averitt, J.M. Zide, A. C. Gossard, "Carrier Dynamics in Self-Assembled Eras Nanoislands Embedded in GaAs Measured By Optical-Pump Terahertz-Probe Spectroscopy", *Applied Physics Letters*, Vol.86, No.20, Pp. 201107- 1-3, (May 2005). Publisher: AIP, USA. CINT Proposal: Optical and Terahertz Characterization of Epitaxially-Grown Semimetal/Semiconductor Nanocomposites, University of California, Santa Barbara, U2006a062.
21. R. P. Prasankumar, A. Scopatz, D. J. Hilton, A. J. Taylor, R. D. Averitt, J.M. Zide, and A. C. Gossard, "Carrier Dynamics in Self-Assembled Eras Nanoislands embedded in GNAs Measured by Optical-Pump Terahertz-Probe Spectroscopy," *Appl. Phys. Lett.* 86, P. 201107, (2005). CINT Proposal: Optical Characterization of Self-Assembled Metallic Nanoislands in Semiconductors, University of California, Santa Barbara, P2003107.
22. E. J. Reed, M. Soljagic, R. Gee, J. D. Joannopoulos, "Prediction of Coherent Optical Radiation from Shock Waves in Polarizable Crystals," *Proc. Conf. Shock Compression of Condensed Matter 2005* (New York, 2006). CINT Proposal: Shocked Photonic Crystals: Frequency Conversion in a New Regime, Lawrence Livermore National Laboratory, P2005088.
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25. J.K. Lee, D.W. Hamby, D.A. Lucca, M. Nastasi, "Optical Observation of Donor-Bound Excitons in Hydrogen-Implanted ZnO", *Appl. Phys. Lett.* 86, 171102 (2005) CINT Proposal: Quantum Confinement and Strain Effects in Photonic Nanocrystals, Oklahoma State University, P2003139/R2006a057.
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 28. Anatoly Efimov, A.V. Yulin, D. V. Skryabin, J.C. Knight, N. Y. Joly, F. G. Omenetto, J. Taylor and P. St. J. Russell, "Interaction of an Optical Soliton with a Dispersive Wave," *Phys. Rev. Lett.* 95, P. 213902, (2005). CINT Proposal: Nonlinear Optics in Photonic Crystal Fibers in the Mid-Infrared, University of Bath, P2003115.
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 31. A. Wu, S.V. Malinin, S. Tretiak, and V. Chernyak, "Exciton Scattering and Localization in Branched Dendrimeric Structures," *Nature Physics* 2, P. 631–635, (2006). CINT Proposal: Design and Engineering of Optical Nanomaterials Based On Organic Branched Structures, Wayne State University, U2006a116.
 32. J. F. O'hara, J.M. O. Zide, A. C. Gossard, A. J. Taylor, R. D. Averitt, "Enhanced THz Detection via Eras: GaAs Nanoisland Superlattices", *Appl. Phys. Lett.* 88, P.251119, (2006). CINT Proposal: Optical Characterization of Self-Assembled Metallic Nanoislands in Semiconductors, University of California, Santa Barbara, P2003107.
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37. A. Shailos, J.P. Bird, M. P. Lilly, J. L. Reno, and J. A. Simmons, "Spin-Polarized Transport through a Quantum Point Contact in Strongly-Quantizing Magnetic Fields: Mimicking the 0.7 Scenario", *J. Phys.: Condens. Matter* 18, P. 3277-3284, (2006). CINT Proposal: Spin-Dependent Transport & Many-Body Interactions in Coupled Quantum Wires, University of Buffalo, the State University of New York, P2003140/R2006a002.
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40. J.C. Thorp, K Sieradzki, T. Michael, P. Crozier, D. Mitlin, A. Misra, M. Nastasi, S.T. Picraux, "The Formation of Nanoporous Noble Metal Thin Films on Si By Electrochemical Dealloying of Pt_xSi_{1-x}", *Appl. Phys. Lett.* 88, P. 33110-33112, (2006). CINT Proposal: Nanoporous Metal Electrodes Integrated Into Microsystems, Arizona State University, P2004082.
41. X. Zhang, A. Misra, H. Wang, X. H. Chen, L. Lu, K. Lu, and R. G. Hoagland, "High-Strength Sputter-Deposited Cu Foils with Preferred Orientation of Nanoscale Growth Twins", *Applied Physics Letters*, 88, P. 173116, (2006). CINT Proposal: Synthesis and Mechanical Behavior of Metallic Thin Films with Nanoscale Growth Twins, Texas A&M University, U2006a031.
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3. Magnetic Resonance Force Microscopy Studies in a Thin Permalloy Film' E. Naz Mewes, D. V. Pelekhov, J. Kim, P. Wigen, P. C. Hammel and R. Movshovich International Conference On Magnetism, Kyoto/Japan, August 2006
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