

CINT publications - 2008

Published:

O. Anderoglu, X. Zhang and A. Misra, "Thermal stability of sputtered Cu films with nanoscale growth twins", *Journal of Applied Physics*, v.103, p. 094322 (2008)

O. Anderoglu, A. Misra, H. Wang and X. Zhang, "Thermal stability of sputtered Cu films with nanoscale growth twins", *Journal of Applied Physics*, 103, 094322, (2008)

O. Anderoglu, A. Misra, H. Wang, F. Ronning, M. F. Hundley and X. Zhang, "Epitaxial nanotwinned Cu films with high strength and high conductivity", *Applied Physics Letters*, 93, 083108 (2008)

M. J. Arlen, D. Wang, J. D. Jacobs, R. Justice, A. Trionfi, J. W. P. Hsu, D. Schaffer, L-S. Tan, R. A. Vaia, "Thermal-electrical character of in situ synthesized polyimide-polyimide grafted carbon nanofiber composites", *Macromolecules*, 41, 8053-8062 (2008)

I. Arslan, A. A. Talin and G. T. Wang, "Three-dimensional visualization of surface defects in core-shell nanowires", *J. Phys. Chem., C.*, 112, 11093 (2008)

A. K. Azad, A. J. Taylor, E. Smirnova, J. F. O'Hara, "Characterization and analysis of terahertz metamaterials based on rectangular split-ring resonators", *Appl. Phys. Lett.* 92, 011119 (2008)

Abul K. Azad, Rohit P. Prasankumar, Diyar Talbayev, Antoinette J. Taylor, John F. O'Hara, Richard D. Averitt, Joshua M. O. Zide, Hong Lu and Arthur K. Gossard, "Carrier dynamics in ErAs nanoislands embedded in InGaAs", *Appl. Phys. Lett.* 93, 121108 (2008)

E. Badaeva and S. Tretiak, "Two photon absorption of extended substituted phenylenevinylene oligomers: a TDDFT study", *Chem. Phys. Lett.* 450, 322-328 (2008)

A. A. Barhorst, O. P. Harrison and G. D. Bachand, "Modeling elasto-mechanical phenomena involved in motor-driven assembly of nanomaterials", *19th International Conference on Design Theory and Methodology/1st International Conference on Micro and Nano Systems*, Vol 3, Part a and B, pp. 669-677 (2008)

K. Becker, E. Da Como, J. Feldmann, F. Scheliga, E. Thorn Csányi, S. Tretiak and J.M. Lupton, "How chromophore shape controls photophysical function in phenylene-vinylenes", *J. Phys. Chem. B* 112 4859-4864 (2008)

E. Bielejec, J.L. Reno, S.K. Lyo and M.P. Lilly, "Tunneling spectroscopy in vertically coupled quantum wires", *Sol. State Commun.* 147, 79 (2008)

K.S. Burch, Elbert Chia, D. Talbayev, B.C Sales, D. Mandrus, A. J. Taylor and R.D. Averitt, "Coupling between phonons and the hybridization gap in a d-electron Kondo lattice", *Phys. Rev. Lett.* 100, 026409 (2008)

Hou-Tong Chen, Hong Lu, A. K. Azad, R. D. Averitt, A. C. Gossard, S. A. Trugman, J. F. O'Hara and A. J. Taylor, "Electronic control of extraordinary terahertz transmission through subwavelength metal hole arrays", *Optics Express* **16**, 7641 (2008)

H-T. Chen, S. Palit, T. Tyler, C. M. Bingham, J. M. O. Zide, J. F. O'Hara, D. R. Smith, A. C. Gossard, R. D. Averitt, W. J. Padilla, N. M. Jokerst and A. J. Taylor, "Hybrid metamaterials enable fast electrical modulation of freely propagating terahertz waves", *Appl. Phys. Lett.* **91**, 091117 (2008)

H-T. Chen, J. F. O'Hara, A. K. Azad, A. J. Taylor, R. D. Averitt, D. B. Shrekenhamer and W. J. Padilla, "Experimental demonstration of frequency agile terahertz metamaterials", *Nature Photonics* **2**, 295 (2008)

Y. Chen, J. Vela, H. Htoon, J. Casson, D. Werder, D. Bussian, V. I. Klimov and J. A. Hollingsworth, "'Giant' multishell CdSe nanocrystal quantum dots with suppressed blinking", *J. Am. Chem. Soc.* **130**, no. 15, 5026 – 5027 (2008)

C. N. Chinnasamy, J.Y. Huang, L. H. Lewis and V. G. Harris, "Direct chemical synthesis of high coercivity SmCo nanoblades", *Appl. Phys. Lett.* **93**, 032505 (2008)

Grant A. Crawford, Nikhilesh Chawla and J. E. Houston, "Nanomechanics of biocompatible TiO₂ nanotubes by interfacial force microscopy (IFM)", *Journal of the Mechanical Behavior of Biomedical Materials*

H. P. Dahal, A. V. Balatsky and J. X. Zhu, "Tuning impurity states in bilayer graphene" *Physical Review B (Condensed Matter and Materials Physics)*; vol.77, no.11, p.115114-1-10
15 March 2008

M. Dai, J. Temirov, P. Emanuele, C. Kiss, P. Pavlik, J. H. Werner and A. Bradbury, "Using T7 phage display to select GFP-based binders," *Protein Engineering Design and Selection* Vol.21, iss.7, p.413-424 (2008)

A. Efimov, "Fundamental nonlinear-optical interactions in photonic fibers: time-spectral visualization", *Laser Physics*, **18**, 667-681 (Invited, Reviews), (2008)

A. Efimov and A. J. Taylor, "Supercontinuum generation and soliton timing jitter in SF₆ soft glass photonic crystal fibers", *Optics Express* **16**, 5942 (2008)

D. M. Follstaedt, A. A. Allerman, S. R. Lee, J. R. Michael, K. H. A. Bogart, M. H. Crawford, N. A. Missert and J. Cryst, "Dislocation reduction in AlGa_N grown on patterned GaN", *Gro.* **310**, 766-776 (2008)

J. Fransson, J. X. Zhu and A. V. Balatsky, "Vibrating superconducting island in a Josephson junction", *Physical Review Letters*; v.1, no.6, p.01067202, August 8, 2008

J. Fransson and A. V. Balatsky, "Surface imaging of inelastic friedel oscillations", *Physical Review B (Condensed Matter and Materials Physics)*; vol.75, no.19, p.195337-1-5, 15 May 2007

J. Fransson and A. V. Balatsky, "Exchange interaction and Fano resonances in diatomic molecular systems", *Physical Review B (Condensed Matter)*; vol.75, no.15, p.153309-1-4, 15 April 2007

M. Galperin and S. A. Trugman, "Dynamical features in the scattering approach to inelastic transport", (preprint 2008)

M. Galperin and S. Tretiak, "Linear optical response of current-carrying molecular junction: A NEGF-TDDFT approach", *J. Chem. Phys.* 128, 124705 (2008)

I. Grigorenko, J. X. Zhu and A. Balatsky, "Optimization of the design of superconducting inhomogeneous nanowires", *Journal of Physics-Condensed Matter*; v.20, no.19, p.195204, May 14, 2008

I. Grigorenko, S. Haas, A. Balatsky, A. F. J. Levi, "Optimal control of electromagnetic field using metallic nanoclusters", *New Journal of Physics*; vol.10, no.4, April 2008

D. J. Hilton, R. P. Prasankumar, E. J. Schelter, V. K. Thorsmolle, S. A. Trugman, A. P. Shreve, J. L. Kiplinger, D. E. Morris and A. J. Taylor, "Ultrafast spectroscopy of the uranium(IV) and thorium(IV) (Bis)ketimide complexes $(C_5Me_5)_2An[-N=C(Ph)(CH_2Ph)]_2$ ($An=Th,U$)", *J. Phys. Chem. A*, 112, 7840 (2008)

D. A. Horsley, A. A. Talin and J. L. Skinner, "Micromechanical and microfluidic devices incorporating resonant metallic gratings fabricated using nanoimprint lithography", *Journal of Nanophotonics* 2, 021785 (2008)

P. Hosemann, J. G. Swadener, D. Kiener, G. S. Was, S. A. Maloy and N. Li, "An exploratory study to determine the applicability of nano-hardness and micro-compression measurements for yield stress estimation", *J. Nucl. Mater.* 375, 135, (2008)

P. Hosemann, M. Hawley, D. Koury, J. G. Swadener, J. Welch, A. J. Johnson, G. N. Mori and N. Li, "Characterization of oxide layers grown on D9 sustenitic stainless steel in lead bismuth eutectic", *J. Nucl. Mater.* 375, 323, (2008)

P. Hosemann, J. G. Swadener, S. A. Maloy, T. Romero, "Oxygen effects on irradiated Ta alloys," accepted for publication in *Nucl. Inst. Meth. Phys. Res. B.* (2008)

H. Htoon, S. A. Crooker, M. Furis, S. Jeong, Al. L. Efros, V. I. Klimov, "Linearly polarized 'fine structure' of the bright exciton state in individual CdSe nanocrystal quantum dots", *Phys. Rev. B* 77, 035328 (2008)

H. Htoon, S. A. Crooker, M. Furis, S. Jeong, A. L. Efros and V. I. Klimov, "Linearly polarized 'fine structure' of the bright exciton state in individual CdSe nanocrystal quantum dots", *Phys. Rev. B* 77, 035328 (2008)

J. Y. Huang, F. Ding, and B.I. Yakobson, "Dislocation dynamics in multiwalled carbon nanotubes at high temperatures", *Phys. Rev. Lett.* 100, 035503 (2008)

S. Ingole, P. Manandhar, S.B. Chikkannanavar, E.A. Akhadov, D.J. Smith and S.T. Picraux, "Ex-situ doping of silicon nanowires with boron", *Appl. Phys.* 103, 104302 (2008). Also in *Virtual Journal of Nanoscale Science & Technology*, June 2, 2008

H. S. Jung, J-K. Lee, J. Lee, B. S. Kang, Q.X. Jia and M. Nastasi, "Strain relaxation in sol-gel grown epitaxial anatase thin films", *J. Phys. Chem. C* 112(11), 4205-4208 (2008)

H. S. Jung, J-K. Lee, J. Lee, B. S. Kang, Q.X. Jia, M. Nastasi, J. H. Noh, C-M. Cho and S. H. Yoon, "Mobility enhanced photoactivity in sol-gel grown epitaxial anatase TiO₂ films", *Langmuir* 24(6), 2695-2698 (2008)

S. Kilina, S. Tretiak, S.K. Doorn, Z. Luo, F. Papadimitrakopoulos, A. Piryatinski, A. Saxena, R.L. Martin and A.R. Bishop, "Cross-polarized excitons of carbon nanotubes", *Proc. Nat. Acad. Sci. USA*, 105 6797-6802 (2008)

S. Kilina, S. Tretiak, D. A. Yarotski, J. X. Zhu, N. Modine, A. Taylor and A. V. Balatsky, "Electronic properties of DNA base molecules adsorbed on a metallic Surface", *Journal of Physical Chemistry C*; vol.111, no.39, p.14541-51, 4 Oct. 2007

K.Y. Kim, A.J. Taylor, J.H. Glowina and G. Rodriguez, "Coherent control of terahertz supercontinuum generation in ultrafast laser-gas interactions", *Nature Photonics*, doi:10.1038/nphoton.2008.153 (2008)

V. I. Klimov, J. A. McGuire, R. Schaller and V. I. Rupasov, "Scaling of multiexciton lifetimes in semiconductor nanocrystals", *Phys. Rev. B* 77, 195324 –1- 12 (2008)

J.M.D. Lane, M. Chandross, Mark J. Stevens and G.S. Grest, "Water in nano-confinement between hydrophilic self-assembled monolayers", *Langmuir* 24, 5209 (2008)

J.M.D. Lane, M. Chandross, M. Dugger, Mark J. Stevens and G.S. Grest, "Water penetration of damaged self-assembled monolayers", *Langmuir* 24, 5734 (2008)

H. J. Lee, J. Workman, J. S. Wark, R. D. Averitt, A. J. Taylor, J. Roberts, Q. McCulloch, D. E. Hof, N. Hur, S-W. Cheong and D. J. Funk, "Optically induced lattice dynamics probed with ultrafast x-ray diffraction", *Physical Review B* 77, 132301 (2008)

G. A. Lessard, S. Habuchi, J. H. Werner, P. M. Goodwin, F. C. De Schryver, J. Hofkens and M. Cotlet, "Probing dimerization and intraprotein fluorescence resonance energy transfer in a far

red fluorescent protein from the sea anemone heteractis crispa", Journal of Biomedical Optics 031212-1 to 031212-7 (2008)

M. Liu, O. Obi, J. Lou, S. Stoute, J. Y. Huang, Z. Cai, K. S. Ziemer and N. X. Sun, "Spin-spray deposited multiferroic composite $\text{Ni}_{0.23}\text{Fe}_{2.77}\text{O}_4/\text{Pb}(\text{Zr},\text{Ti})\text{O}_3$ with strong interface adhesion", Appl. Phys. Lett. 92, 152504 (2008)

T.S. Luk, T. Mclellan, G. Subramania, J.C. Verley and I. El-Kady, "Emissivity measurements of 3D photonic crystals at high temperatures", Photonics and Nanostructures - Fundamental and Applications, vol. 6, 81 (2008)

Yuanbin Mao, Jian Y. Huang, Roman Ostroumov, Kang L. Wang and Jane P. Chang, "Synthesis and luminescence properties of erbium-doped Y_2O_3 nanotubes", J. Phys. Chem. C 112, 2278-2285 (2008)

E. S. McGarrity, A. L. Frischknecht and M. E. Mackay, "Phase behavior of polymer/nanoparticle blends near a substrate", J. Chem. Phys. 128, 154904 (2008)

E. S. McGarrity, P. M. Duxbury, M. E. Mackay and A. L. Frischknecht, "Calculation of entropic terms governing nanoparticle self-assembly in polymer films", Macromolecules 41, 5952 (2008)

C. H. Mielke and A. V. Balatsky, "Crossing a bridge into the unknown", Nature Nanotechnology; v.3, no.3, p.129-130, March 2008

J. F. O'Hara, R. Singh, I. Brener, E. Smirnova, J. Han, A. J. Taylor and W. Zhang, "Thin film sensing with planar metamaterials: sensitivity and limitations", Opt. Express 16, 1786 (2008)

Flint Pierce, Mesfin Tsige, Oleg Borodin, Dvora Perahia and Gary S. Grest, "Interfacial properties of semifluorinated alkanes via atomistic simulation", Journal of Chemical Physics 128, 214903 (2008)

Flint Pierce, Mesfin Tsige, Dvora Perahia and Gary S. Grest, "Liquid-liquid interfaces of semiuorinated alkane diblock copolymers with water, alkanes, and peruoroalkanes", J. Phys. Chem B 112, 16012 (2008)

J. M. Pietryga, J. D. Werder, D. J. Williams, J. L. Casson, R. D. Schaller, V. I. Klimov and J. A. Hollingsworth, "Utilizing the lability of lead selenide to produce heterostructured nanocrystals with bright, stable infrared emission", J. Am. Chem. Soc. 130, 4879, (2008)

A. Piryatinski, S. Tretiak and V. Chernyak, "Dynamical variational approach to non-adiabatic electronic structure", Chem. Phys. 347 2538 (2008)

R. P. Prasankumar, S. G. Choi, S. A. Trugman, S. T. Picraux and A. J. Taylor, "Ultrafast electron and hole dynamics in germanium nanowires", Nano Letters 8, 1619 (2008)

R. P. Prasankumar, H. J. Lee, H. Okamura, H. Imai, Y. Shimakawa, Y. Kubo, S. Zvyagin, K. V. Kamenev, G. Balakrishnan, D. Mck. Paul, S. A. Trugman, A. J. Taylor and R. D. Averitt, "Probing nanoscale inhomogeneities in transition metal oxides with ultrafast mid-infrared spectroscopy", *Physica B* 403, 1401 (2008)

R. P. Prasankumar, R. S. Attaluri, R. D. Averitt, J. Urayama, N. Weisse-Bernstein, P. Rotella, A. Stintz, S. Krishna and A. J. Taylor, "Ultrafast carrier dynamics in an InAs/InGaAs quantum-dots-in-a-well heterostructure", *Optics Express*, 16, 1165 (2008)

R. P. Prasankumar, S. G. Choi, G. T. Wang, P. C. Upadhyaya, S. A. Trugman, S. T. Picraux and A. J. Taylor, "Ultrafast Carrier Dynamics in Semiconductor Nanowires", to appear in proceedings of Ultrafast Phenomena Conference, Stresa, Italy, June 2008

M. M. Qazilbash, M. Brehm, Byung-Gyu Chae; P. C. Ho, G. O. Andreev, Kim Bong-jun, Sun Jin Yun, A. V. Balatsky, M. B. Maple and F. Keilmann, et. al., "Mott transition in VO₂ revealed by infrared spectroscopy and nano-imaging", *Science*; vol.318, p.1750-3, Dec. 2007

E. J. Reed, M.R.Armstrong, K-Y. Kim and J.H. Glowonia, "Atomic-scale time and space resolution of terahertz frequency acoustic waves", *Phys. Rev. Lett.* 101, 014302 (2008)

A. Rosengren, P. H. Lundow and A. V. Balatsky, "Isotope effect on superconductivity in Josephson coupled stripes in underdoped cuprates", *Physical Review B (Condensed Matter and Materials Physics)*; vol.77, no.13, p.134508-1-4, 1 April 2008

D. M. Rosu, J. C. Jones, J. W. P. Hsu, K. L. Kavanagh, D. Tsankov, U. Schade, N. Esser and K. Hinrichs, "Molecular orientation of octanedithiol and hexadecanethiol on GaAs and Au", **25**, 919-923 (2009)

L. Shao, Y. Q. Wang, J. G. Swadener, M. Nastasi, P. E. Thompson, and N. D. Theodore, "Cracking in hydrogen ion-implanted Si/Si_{0.8}Ge_{0.2}/ Si heterostructures", *Applied Physics Letters* 92, 061904, (2008)

Leon L. Shaw, Juan Villegas, Jianyu Huang and Shuo Chen, "Strengthening via deformation twinning in a nickel alloy", *Mater. Sci. Eng. A* 480, 75-83 (2008)

Yajaira Sierra-Sastre, Sukgeun Choi, S. T. Picraux and Carl A. Batt, "Vertical growth of Ge nanowires from biotemplated au nanoparticle catalysts A", *J. of the Amer. Chem. Soc.* 130, 10488 (2008)

Ranjan Singh, Abul K. Azad, John F. O'Hara, Antoinette J. Taylor and Weili Zhang, "Effect of metal permitivity on resonant properties of terahertz metamaterials", *Opt. Lett.* 33, 1506 (2008)

Ranjan Singh, Evgenya Smirnova, Antoinette J. Taylor, John F. O'Hara and Weili Zhang, "Optically thin terahertz metamaterials", *Optics Express* 16, 6537 (2008)

J. L. Skinner, A. A. Talin and D. A. Horsley, "A MEMS light modulator based on diffractive nanohole gratings", *Optics Express* 16, 3701 (2008)

A. Srivastava, H. Htoon, V. I. Klimov and J. Kono, "Direct observation of dark excitons in individual carbon nanotubes: inhomogeneity in exchange splitting", *Physical Review Letters*, 101, 087402 (2008)

M.J. Stevens and G.S. Grest, "Simulations of water at the interface with hydrophilic self-assembled monolayers", *Biointerphases* 3, FC13 (2008)

G. Subramania, Y. Lee, B.A. Hernandez-Sanchez, A.J. Fischer, T.S. Luk, I. Brener, P.G. Clem and T.J. Boyle, "CdSe infiltrated TiO₂ based omnidirectional photonic crystals for visible light control", *Photonics and Nanostructures – Fundamental and Applications*, vol. 6, 12 (2008)

M. Sykora, L. Mangolini, R. D. Schaller, U. Kortshagen, D. Jurbergs and V. I. Klimov, "Size-dependent intrinsic radiative decay rates of silicon nanocrystals at large confinement energies", *Phys. Rev. Lett.* 100, no. 6, 067401-1-4(2008)

D. Talbayev, A. Laforge, D. Basov, N. Hur, S. A. Trugman, J. Taylor and R. D. Averitt, "Magnetic exchange interaction between rare-earth and manganese ions in multiferroic hexagonal manganites", (preprint 2008)

D. Talbayev, S.A. Trugman, A.V. Balatsky, A. J. Taylor, R. D. Averitt and T. Kimura, "Detection of coherent magnons via transient reflectance in multiferroic Ba_{0.6}Sr_{1.4}Zn₂Fe₁₂O₂₂", *Phys. Rev. Lett.* **101**, 97603 (2008)

D. Talbayev, S. A. Trugman, A. V. Balatsky, A. J. Taylor and R. D. Averitt, "Detection of coherent magnons via transient reflectance in $Ba_{0.6}Sr_{1.4}Zn_2Fe_{12}O_{22}$ ", *Phys. Rev. Lett.* 101, 097603 (2008); also selected for the *Virtual Journal of Nanoscale Science & Technology*, Sept. 8, 2008

A. A. Talin, F. Leonard, B. S. Swartzentruber, X. Wang, S. D. Hersee, "Unusually strong space-charge-limited currents in thin wires", *Phys. Rev. Lett.*, 101, 076802 (2008)

A. A. Talin, G. T. Wan, E. Lai and R. J. Anderson, "Correlation of growth temperature, photoluminescence, and resistivity in GaN nanowires", *App. Phys. Lett.* 92, 093105 (2008)

A. A. Talin, F. Léonard, B. S. Swartzentruber, X. Wang and S. D. Hersee, "Unusually strong space-charge-limited current in thin wires", *Phys. Rev. Lett.*, 101, 076802 (2008)

J. Tao, S. Tretiak and J-X. Zhu, "Performance of a non-empirical meta-GGA density functional for excitation energies", *J. Chem. Phys.* 128, 084110 (2008)

J. Temirov, A. Bradbury and J. H. Werner, "Measuring an antibody affinity distribution molecule by molecule", *Vol.80, iss. 22, p.8642-8648 Analytical Chemistry* (2008)

- A. Trionfi, D. A. Scrymgeour, J. W. P. Hsu, M. J. Arlen, D. Tomlin, J. D. Jacobs, D. H. Wang, L-S. Tan and R. A. Vaia, "Direct imaging of current paths in multi-walled carbon nanofiber polymer nanocomposites using conducting-tip atomic force microscopy", *J. Appl. Phys.*, **104**, 083708 (2008)
- Mesfin Tsige and Gary S. Grest, "Surface tension and surface activity of perfluorinated alkanes", *Journal of Physical Chemistry C* **112**, 5029 (2008)
- Pieter in't Veld, Mark A. Horsch, Jeremy B. Lechman and Gary S. Grest, "Liquid-vapor coexistence for nanoparticles of various size", *Journal of Chemical Physics* **129**, 164504 (2008)
- T. O. Wehling, H. P. Dahal, A. I. Lichtenstein and A. V. Balatsky, "Local impurity effects in superconducting grapheme", *Physical Review B*; v.78, no.3, p.035414, July, 2008
- T. O. Wehling, A. V. Balatsky, M. I. Katsnelson, A. I. Lichtenstein, K. Scharnberg and R. Wiesendanger, "Local electronic signatures of impurity states in grapheme", *Physical Review B*; v.75, no.12, p.125425, March 2007
- N. P. Wells, G A. Lessard and J. H. Werner, "Confocal, 3-dimensional tracking of individual quantum-dots in high background environments", *Vol.80, iss.24, p.9830-9834 Analytical Chemistry* (2008)
- C. Wu, S. Malinin, S. Tretiak and V. Chernyak, "Multiscale modeling of electronic excitations in branched conjugated molecules using exciton scattering approach", *Phys. Rev. Lett.* **100**, 057405 (2008)
- P. Yang, S. Tretiak, A. Masunov and S. A. Ivanov, "Quantum chemistry of the minimal CdSe clusters", *J. Chem. Phys.* /*129*, 074709 (2008)
- Balakishore Yellampalle, Elbert E. M. Chia, Kiyong Kim, Antoinette J. Taylor and Richard Averitt, "Three pulse envelope approach for ultrashort pulse characterization in a pump-probe experiment", *Appl. Phys. Lett.* **92** 061111 (2008)
- A. Ahktari-Zavareh, W-J. Li, K. Kavanagh, A. J. Trionfi, J. C. Jones, J. L. Reno, A. A. Talin and J. W. P. Hsu, "Au/Ag and Au/Pd molecular contacts to GaAs", *J. Vac. Sci. Technol. B* **26**, 1597 (2008)
- X. Zhang, O. Anderoglu, R.G. Hoagland and A. Misra, "Nanoscale growth twins in sputtered metal films", invited overview article, v. 60, *JOM*, p. 75, September (2008)
- J. X. Zhu, K. O. Rasmussen, A. V. Balatsky and A. R. Bishop, "Local electronic structure in the Peyrard-Bishop-Holstein model", *Journal of Physics Condensed Matter*; v.19, no.13, Apr 4 2007

In Press:

J.M. Buset, A.H. Mack, D. Laroche, C.R. Dean, M.P. Lilly, J.L. Reno and G. Gervais, "Towards optical manipulation and resistive readout of the GaAs nuclear spins", *Physica E* 40, 1252 (2008)

S. Ingole, P. Manandhar, S. B. Chikkannanavar, E. A. Akhadov and S. T. Picraux, "Charge transport characteristics in boron doped silicon nanowires", *IEEE Trans. on Electron Devices and Trans. on Nanotechnology* [special joint issue on Nanowire Electronics] (2008), (in press)

F. Léonard, A. A. Talin, B. S. Swartzentruber and S. T. Picraux, "Diameter-dependent electronic transport properties of Au-Catalyst/Ge-Nanowire Schottky Diodes", *Phys. Rev. Lett.*, (in press)

C.P. Morath, J.A. Seamons, J.L. Reno and M. P. Lilly, "Layer interdependence of transport in an undoped electron-hole bilayer", *Phys. Rev. B* 78, 115318 (2009)

Huisheng Peng, Daoyong Chen, Jian Yu Huang, S. B. Chikkannanavar, J. Hanisch, Menka Jain, D. E. Peterson, S. K Doorn, Yunfeng Lu, Y. T. Zhu and Q. X. Jia, "Strong and ductile colossal carbon tubes with walls of rectangular macropores", *Phys. Rev. Lett.* (in press)

A. Saha, P. Katira, M. Bachand, G. D. Bachand and H. Hess, "Temperature-compensation for hybrid devices: Kinesin's K_m is temperature-independent", *Small* (in press), (2008)

J. L. Skinner, A. A. Talin and D. A. Horsley, "Light modulation with nano-patterned diffractive MEMS pixels", *J. Vac. Sci. Technol. B*, in press

J. L. Skinner, L. L. Hunter, A. A. Talin, J. Provine and D. A. Horsley, "Large-area subwavelength aperture arrays fabricated using nanoimprint lithography", *IEEE Trans. Nanotech.*, accepted for publication

J. Tatebayashi, B. L. Liang, R. B. Laghumavarapu, D. A. Bussian, H. Htoon, V. Klimov, G. Balakrishnan, L. R. Dawson and D. L. Huffaker, "Time-resolved photoluminescence of type-II Ga(As)Sb/GaAs quantum dots embedded in an InGaAs quantum well", Submitted to *Nanotechnology*, (Accepted) 2008

F. Terenziani, C. Katan, M. Blanchard-Desce, E. Badaeva and S. Tretiak, "Enhanced two-photon absorption of organic chromophores: theoretical and experimental assessments", *Adv. Mat.* (Review Article) (in press)

J. H. Werner, G. A. Montano, A. L. Garcia, N. A. Zurek, E. A. Akhadov, G. P. Lopez and A. P. Shreve, "Formation and dynamics of supported phospholipid membranes on a periodic nanotextured substrate", *Langmuir* (accepted, will appear in 2009)

P. Yang, S. Tretiak, A. E. Masunov and S. Ivanov, "Quantum chemistry of the minimal CdSe clusters", *J. Chem. Phys.* (in press)

Submitted:

K. Abul. H. T. Azad, A. J. Chen, E. Taylor, N. R. Akhadov, N. R. Weisse-Bernstein and J. F. O'Hara, "Flexible quasi-three-dimensional metamaterials", submitted to Opt. Lett. (2008)

Natalie L. Adolphi, Dale L. Huber, Jason E. Jaetao, Howard C. Bryant, Debbie M. Lovato, Danielle L. Fegan, Eugene L. Venturini, Todd C. Monson, Trace E. Tessier, Helen J. Hathaway, Christian Bergemann, Richard S. Larson and Edward R. Flynn, "Characterization of magnetite nanoparticles for SQUID-relaxometry and magnetic needle biopsy", submitted to Journal of Magnetism and Magnetic Materials

M. D. Allendorf, R. J. T. Houk, L. Andruszkiewicz, A. A. Talin, J. Pikarsky, A. Choudhury, K. A. Gall and P. J. Hesketh, "Stress-induced chemical detection using flexible metal-organic frameworks", JACS Comm., in review

Alvermann, H. Fehske and S. A. Trugman, "Solution of the holstein polaron anisotropy problem", submitted to PRL (2008)

B. Bussian, A. Malko, H. Htoon, Y. Chen, V. I. Klimov, J. A. Hollingsworth, "Quantum optics with nanocrystal quantum dots in solution: quantitative study of clustering", submitted to J. Phys. Chem

I. Grigorenko and A. Efimov "Coherent control near metallic nanostructures", submitted to Phys. Rev. Lett

J. J. Glennon, R. Tang, W. E. Buhro, R. A. Loomis, D. A. Bussian, H. Htoon and V. I. Klimov, "Exciton localization and migration in single CdSe quantum wires at low temperatures", submitted to Phys. Rev. Lett

J. J. Glennon, R. Tang, W. E. Buhro, R. A. Loomis, D. A. Bussian, H. Htoon and V. I. Klimov, "Exciton localization and migration in single CdSe quantum wires at low temperatures", submitted to Physical Review Letters, 2008

H. Htoon, M. Furis, S. A. Crooker, S. Jeong and V. I. Klimov, "Anomalous circular polarization of magneto-photoluminescence from individual CdSe nanocrystals", submitted to Physical Review Letters (2008)

J.Y. Huang, F. Ding and B. I. Yakobson "Vacancy-hole/tube migration in multiwall carbon nanotubes", (submitted)

Chee Huei Lee, Jiesheng Wang, Vijaya K. Kayastha, Jian Y. Huang and Yoke Khin Yap "High yield synthesis of boron nitride nanotubes by thermal chemical vapor deposition", (submitted)

M. T. Lloyd, R. P. Prasanhumar, M. B. Sinclair, A. C. Mayer, D. C. Olson and J. W. P. Hsu, "Impact of interfacial polymer morphology on photoexcitation dynamics and device performance in P3HT/ZnO heterjunction", submitted to J. Mater. Chem

Yuanbing Mao, Xia Guo, Jian Y. Huang, Kang L. Wang and Jane P. Chang, " $\text{La}_2\text{Zr}_2\text{O}_7$ and $\text{La}_2\text{Hf}_2\text{O}_7$ nanoparticles from single-source complex precursors: kinetically modified synthesis and luminescent properties", (submitted)

N.W. Moore, J. Luo, J.Y. Huang, S. X. Mao and J.E. Houston, "Superplastic nanowires pulled from the surface of common salt", (submitted)

Flint Pierce, Dvora Perahia and Gary S. Grest, "Spreading of liquid polymer droplets on a viscous polymer liquid", submitted to Europhysics Letters (2009)

A. Srivastava, H. Htoon, V. I. Klimov and J. Kono "Direct observation of dark excitons in individual carbon nanotubes: inhomogeneity in exchange splitting", submitted to Phys. Rev. Lett., in press (2008)

J. G. Swadener and S. T. Picraux, "Strain distributions and electronic property modifications in Si/Ge axial nanowire heterostructures", J. Appl. Phys. (submitted)

J. Tatebayashi, R. B. Laghumavarapu, B. L. Liang, D. A. Bussian, H. Htoon, S. H. Huang, G. Balakrishnan, V. Klimov, L. R. Dawson and D. L. Huffaker, "Formation and optical characteristics of type-II strain-relieved GaSb/GaAs quantum dots by using an interfacial misfit growth mode", submitted to IEEE Transaction on Nanotechnology

A. Trionfi, J. W. P. Hsu, D. H. Wang, J. D. Jacobs, L-S. Tan and R. A. Vaia, "Direct measurement of the percolation probability in carbon nanofiber-polyimide nanocomposites", submitted to Phys. Rev. Lett

J. Vela, B. Prall, P. Rastogi, D. Werder, J. Casson, V. I. Klimov and J. A. Hollingsworth, "The impact of sensitization on brightness in lanthanide-doped nanocrystalline semiconductors", submitted June 2008 to Special Issue of the IEEE Transactions on Nanobioscience on "Colloidal Quantum Dots for Biomedical Applications"

T. Westover, R. Jones, G. Wang, E. Lai and A. A. Talin, "Photoluminescence, thermal transport and breakdown in joule-heated GaN nanowires", J. Appl. Phys., (in review)

Z. Zhang, J.Y. Huang, D. T. Berry, P.P. Provencio and T.M. Nenoff, "Room temperature synthesis of AgNi and PdNi alloy nanoparticles by radiolysis", (in prep)