

## 2015 CINT Publications

1. Adams, P.G., Swingle, K.L., Paxton, W.F., Firestone, M.A., Mukundan, H., Montano, G.A. (2015) "Exploiting lipopolysaccharide-induced deformation of lipid bilayers to modify membrane composition and generate two-dimensional geometric membrane array patterns" *Scientific Report*: 5, 10331
2. Bolintineanu, D.S., Grest, G.S., Lechman, J.B., Silbert, L.E. (2015) "Diffusion in jammed particle packs" *Physical Review Letters*: 115, 088002
3. Chen, H.T. (2015) "Semiconductor activated terahertz metamaterials" *Frontiers of Optoelectronics*: 8, 27
4. Driben, R., Yulin, A., Efimov, A. (2015) "Resonant radiation from oscillating higher order solitons" *Optics Express*: 23, 19112
5. Efimov, A. (2015) "Scintillations of a partially coherent beam in a laboratory turbulence: Experiment and comparison to theory" *Proceedings of the SPIE*: 9354, 935404
6. Firestone, M.A., Hayden, S.C., Huber, D.L. (2015) "Greater than the sum: synergy and emergent properties in nanoparticle-polymer composites" *MRS Bulletin*: 40, 09
7. Ghosh, K., Balog, E.R.M., Sista, P., Martinez, J.S., Rocha, R.C. (2015) "Multicolor luminescence from conjugates of genetically encoded elastin-like polymers and terpyridine-lanthanides" *Macromolecular Chemical Physics*: 216, 18
8. Greenfield, M.T., McGrane, S.D., Bolme, C.A., Bjorgaard, J.A., Nelson, T.R., Tretiak, S., Scharff, R.J. (2015) "Photoactive high explosives: linear and nonlinear photochemistry of petrin tetrazine chloride" *Journal of Physical Chemistry C*: 119, 4846-4855
9. Hanson, C.J., Buck, M.R., Acharya, K., Torres, J.A., Kundu, J., Ma, X., Bouquin, S., Hamilton, C.E., Htoon, H., Hollingsworth, J.A. (2015) "Giant quantum dots: Matching solid-state to solution-phase photoluminescence performance for near-unity down-conversion efficiency" *ACS Applied Material Interfaces*: 7, 13125
10. Ji, Z., Doorn, S.K., Sykora, M. (2015) "Electrochromic Graphene Molecules" *ACS Nano*: 9, 4043  
Kelly, J.C., Huber, D.L., Price, A.D., Roberts, M.E. (2015) "Switchable electrolyte properties and redox chemistry in aqueous media based on temperature-responsive polymers" *Journal of Applied Electrochemistry*: 45, 8
11. Leenheer, A.J., Sullivan, J.P., Shaw, M., Harris, C.T. (2015) "A sealed liquid cell for in-situ transmission electron microscopy of controlled electrochemical processes" *Journal of Microelectromechanical Systems*: 24, 4
12. Liang, L., Qi, M., Yang, J., Shen, X., Zhai, J., Xu, W., Jin, B., Liu, W., Feng, Y., Zhang, C., Lu, H., Chen, H.T., Kang, L., Xu, W., Chen, J., Cui, T.J., Wu, P., Liu, S. (2015) "Anomalous terahertz reflection and scattering by flexible and conformal coding metamaterials" *Advanced Optical Materials*: 3, 1374
13. Li, J., Chen, S., Yang, H., Li, J., Yu, P., Cheng, H., Gu, C., Chen, H.T., Tian, J. (2015)

- “Simultaneous control of light polarization and phase distributions using plasmonic metasurfaces” *Advanced Functional Materials*: 25, 704
14. Liu, J., Adamska, L., Doorn, S.K., Tretiak, S. (2015) “Singlet and triplet excitons and charge polarons in cycloparaphenylenes: A density functional theory study” *Physical Chemistry Chemical Physics*: 17, 14613-14622
  15. Nan, C.W., Jia, Q.X. (2015) “Obtaining ultimate functionalities in nanocomposites: Design, control, and fabrication” *MRS Bulletin*: 40, 719
  16. Park, Y., Choi, J.S., Choi, T., Lee, M.J., Jia, Q.X., Park, M., Lee, H., Park, B.H. (2015) “Configuration of ripple domains and their topological defects formed under local mechanical stress on hexagonal monolayer graphene” *Scientific Reports*: 5, 9390
  17. Paxton, W.F., Bouxsein, N.F., Henderson, I.M., Gomez, A., Bachand, G.D. (2015) “Dynamic assembly of polymer nanotube networks via kinesin powered microtubule filaments” *Nanoscale*: 7, 25
  18. Paxton, W.F., Sanchez, S., Nitta, T. (2015) “Editorial: Special issue micro- and nanomachines” *Transactions on Nanobioscience*: 14, 258-259
  19. Salerno, K.M., Grest, G.S. (2015) “Temperature effects on nanostructure and mechanical properties of single-nanoparticle thick membranes” *Faraday Discussions*: 181, 339
  20. Soh, D.B.S., Brif, C., Coles, P.J., Lütkenhaus, N., Camacho, R.M., Urayama, J., Sarovar, M., (2015). “Self-Referenced Continuous-Variable Quantum Key Distribution Protocol” *Phys. Rev. X*: 5, 041010
  21. Talbayev, D., Lee, J., Trugman, S.A., Zhang, C.L., Cheong, S.W., Averitt, R.D., Taylor, A.J., Prasankumar, R.P. (2015) “Spin-dependent polaron formation dynamics in Eu.75Y.25MnO<sub>3</sub> probed by femtosecond pump-probe spectroscopy” *Physical Review B*: 91, 064420
  22. Ting, C.L., Stevens, M.J., Frischknecht, A.L. (2015) “Structure and dynamics of coarse-grained ionomer melts in an external electric field” *Macromolecules*: 48, 809 U2013A0037
  23. Wang, F., Wei, Q.H., Htoon, H. (2015) “Switchable and non-switchable zero backscattering of dielectric nano-resonators” *Optical Materials Express*: 5, 668-675
  24. Wang, Z., Li, R., Bian, K., Wang, X., Xu, H., Hollingsworth, J.A., Hanrath, T., Fang, J. (2015) “An obtuse rhombohedral superlattice assembled by Pt nanocubes” *Nano Letters*: 15, 6254
  25. Watt, J., Huber, D.L., Price, A.D., Roberts, M.E. (2015) “Effect of seed age on gold nanorod formation: a microfluidic, real-time investigation” *Chemistry of Materials*: 27, 18
  26. White, A.J., Gorshkov, V.N., Tretiak, S., Mozyrsky, D. (2015) “Non-adiabatic molecular dynamics by accelerated semiclassical monte carlo” *Journal of Chemical Physics*: 143,

014115

27. Willey, M., Bagge-Hansen, M., Lauderbach, L., Hodgkin, R., Hansen, D., May, C., VanBuuren, T., Gustavsen, R., Watkins, E., Firestone, M., Dattelbaum, D., Jensen, B., Graber, T., Bastea, S., Fried, L. (2015) "Measurement of carbon condensates using small-angle X-ray scattering during detonation of high explosives" APS Topical Conference on the Shock Compression of Matter: O1.003
28. Zhang, Y., Li, T., Chen, Q., Zhang, H., O'Hara, J.F., Abele, E., Taylor, A.J., Chen, H.T., Azad, A.K. (2015) "Independently tunable dual-band perfect absorber based on graphene at mid-infrared frequencies" Scientific Reports: 5, 18463
29. Zhu, J.X., Albers, R.C., Haule, K., Wills, J.M. (2015) "First-principles study of the Kondo physics of a single Pu impurity in Th host" Physical Review B: 91, 165126
30. Acharya, K. P., Nguyen, H. M., Paulite, M., Piryatinski, A., Zhang, J., Casson, J. L., Xu, H., Htoon, H., Hollingsworth, J. A. (2015) "Elucidation of Two Giants: Challenges to Thick-shell Synthesis in CdSe/ZnSe and ZnSe/CdS Core/Shell Quantum Dots" Journal of the American Chemical Society: 137, 3755-3758. U2013B0037
31. Adamska, L., Nazin, G.V., Doorn, S.K., Tretiak, S. (2015) "Self-trapping of charge carriers in semiconducting carbon nanotubes: Structural analysis" Journal of Physical Chemistry Letters: 6, 3873 U2012B0055
32. Aguilar, R.V., Qi, J., Brahlek, M., Bansal, N., Azad, A., Bowlan, J., Oh, S., Taylor, A.J., Prasankumar, R.P., Yarotski, D.A. (2015) "Time-resolved terahertz dynamics in thin films of the topological insulator Bi<sub>2</sub>Se<sub>3</sub>" Applied Physics Letters: 106, 011901 U2013B0125
33. Ahmed, T., Modine, N.A., Zhu, J.X. (2015) "Bonding between graphene and MoS<sub>2</sub> monolayers without and with Li intercalation" Applied Physics Letters: 107, 043903 U2013B0097
34. Benz, A., Campione, S., Klem, J.F., Sinclair, M.B., Brener, I. (2015) "Control of strong light-matter coupling using the capacitance of metamaterial nanocavities" Nano Letters: 15, 3 U2014A0057
35. Bjorgaard, J.A., Kuzmenko, V., Velizhanin, K.A., Tretiak, S. (2015) "Solvent effects in time- dependent self-consistent field methods I: optical response calculations" Journal of Chemical Physics: 142, 044103 U2013A0032
36. Bjorgaard, J.A., Nelson, T., Kalinin, K., Kuzmenko, V., Velizhanin, K.A., Tretiak, S. (2015) "Simulations of fluorescence solvatochromisms in substituted PPV oligomers from excited state molecular dynamics with implicit solvent" Chemical Physics Letters: 631, 66-69 U2013A0032
37. Bjorgaard, J.A., Velizhanin, K.A., Tretiak, S. (2015) "Solvent effects in time-dependent self- consistent field methods II: variational formulations and analytical gradients" Journal of Chemical Physics: 143, 054305 U2013A0032

38. Bowlan, J., Xu, X., Sinha, K., Trugman, S.A., Taylor, A., Prasankumar, R., Yarotski, D. (2015) "Ultrafast dynamics of multiferroic h-LuFeO<sub>3</sub>" Institute of Electrical and Electronics Engineers: Conference Proceedings, May 2015 U2013B0125
39. Bussmann, E., Rudolph, M., Subramania, G.S., Misra, S., Carr, S.M., Langlois, E., Dominguez, J., Pluym, T., Lilly, M.P., Carroll, M.S. (2015) "Scanning capacitance microscopy registration of buried atomic-precision donor devices" *Nanotechnology*: 26, 085701
40. Campione, S., Luk, T.S., Liu, S., Sinclair, M.B. (2015) "Realizing high-quality, ultralarge momentum states and ultrafast topological transitions using semiconductor hyperbolic metamaterials" *Journal of the Optical Society of America B*: 32, 1809
41. Campione, S., Liu, S., Benz, A., Klem, J.F., Sinclair, M.B., Brener, I. (2015) "Epsilon-near-zero modes for tailored light-matter interaction" *Physics Review Applied*: 4, 044011
42. Carpenter, J.S., Nizolek, T., McCabe, R., Knezevic, M., Zheng, S., Eftink, B., Scott, J., Vogel, S., Pollock, T., Mara, N.A., Beyerlein, I.J. (2015) "Bulk texture evolution of nanolamellar Zr-Nb composites processed via accumulative roll bonding" *Acta Materialia*: 92, 97-108 C2013A0022
43. Chen, A., Poudyal, N., Xiong, J., Liu, J.P., Jia, Q.X. (2015) "Modification of structure and magnetic anisotropy of epitaxial CoFe<sub>2</sub>O<sub>4</sub> films by hydrogen reduction" *Applied Physics Letters*: 106, 111907 U2014A0041
44. Chou, S.S., Huang, Y.K., Kim, J., Kaehr, B., Foley, B.M., Lu, P., Dykstra, C., Hopkins, P.E., Brinker, C.J., Huang, J., Dravid, V.P. (2015) "Controlling the metal to semiconductor transition of MoS<sub>2</sub> and WS<sub>2</sub> in solution" *Journal of the American Chemical Society*: 137, 5 U2014B0071
45. Curry, M.J., England, T.D., Bishop, N.C., Ten-Eyck, G., Wendt, J.R., Pluym, T.P., Lilly, M.P., Carr, S.M., Carroll, M.S. (2015) "Cryogenic preamplification of a single-electron-transistor using a silicon-germanium heterojunction-bipolar-transistor" *Applied Physics Letters*: 106, 203505 U2013B0148
46. Dai, Y., Bowlan, J., Li, H., Miao, H., Shi, Y.G., Trugman, S.A., Zhu, J.X., Ding, H., Taylor, A.J., Yarotski, D.A., Prasankumar, R.P. (2015) "Ultrafast carrier dynamics in the large magnetoresistance material WTe<sub>2</sub>" *Physical Review B*: 92, 161104 U2013B0125
47. Gao, Y., Roslyak, O., Dervishi, E., Karan, N.S., Ghosh, Y., Sheehan, C.J., Wang, F., Gupta, G., Mohite, A., Dattelbaum, A.M., Doorn, S.K., Hollingsworth, J.A., Piryatinski, A., Htoon, H. (2015) "Hybrid graphene-giant nanocrystal quantum dot assemblies with highly efficient biexciton emission" *Advanced Optical Materials*: 3, 39 RA2014A0017
48. Hartmann, N.F., Yalcin, S.E., Adamska, L., Haroz, E.H., Ma, X., Tretiak, S., Htoon, H., Doorn, S.K. (2015) "Photoluminescence imaging of solitary dopant sites in covalently doped single-wall carbon nanotubes" *Nanoscale*: 7, 20521 U2012B0055
49. Jain, P., Wang, Q., Roldan, M., Glavic, A., Lauter, V., Urban, C., Bi, Z., Ahmed, T., Zhu, J.X., Varela, M., Jia, Q.X., Fitzsimmons, M.R. (2015) "Synthetic magnetoelectric

- coupling in a nanocomposite multiferroic" *Scientific Reports*: 5, 9089 U2013B0097
50. Kamaraju, N., Pan, W., Ukenberg, U., Gvozdic, D.M., Boubanga-Tombet, S., Upadhyaya, P.C., Reno, J., Taylor, A.J., Prasankumar, R.P. (2015) "Terahertz magneto-optical spectroscopy of a two-dimensional hole gas" *Applied Physics Letters*: 106, 031902 U2012B0010
  51. Kent, M.S., Avina, I.C., Rader, N., Busse, M.L., George, A., Sathitsuksanoh, N., Baidoo, E., Timlin, J., Giron, N.H., Celina, M.C., Martin, L.E., Polsky, R., Chavez, V.H., Huber, D.L., Keasling, J.D., Singh, S., Simmons, B.A., Sale, K.L. (2015) "Assay for lignin breakdown based on lignin films: insights into the Fenton reaction with insoluble lignin" *Green Chemistry*: 17, 4830 C2014A0038
  52. Lee, J., Trugman, S.A., Zhang, C.L., Talbayev, D., Xu, X.S., Cheong, S.W., Yarotski, D.A., Taylor, A.J., Prasankumar, R.P. (2015) "The influence of charge and magnetic order on polaron and acoustic phonon dynamics in LuFe<sub>2</sub>O<sub>4</sub>" *Applied Physics Letters*: 107, 042906 U2013B0125
  53. Leenheer, A.J., Jungjohann, K.L., Zavadil, K.R., Sullivan, J.P., Harris, C.T. (2015) "Lithium electrodeposition dynamics in aprotic electrolyte observed in situ via transmission electron microscopy" *ACS Nano*: 9, 4
  54. Liu, J., Adamska, L., Doorn, S.K., Tretiak, S. (2015) "Singlet and triplet excitons and charge polarons in cycloparaphenylenes: A density functional theory study" *Physical Chemistry Chemical Physics*: 17, 14613 U2012B0055
  55. Ma, X., Baldwin, J.K.S., Hartmann, N.F., Doorn, S.K., Htoon, H. (2015) "Solid-state approach for fabrication of photostable oxygen-doped carbon nanotubes" *Advanced Functional Materials*: 25, 6157 U2012B0040
  56. Ma, X. & Htoon, H. Tailoring the photophysical properties of carbon nanotubes by photonic nanostructures. *Modern Physics Letters B*, 1530004, (2015). U2012B0040
  57. Ma, X., Roslyak, O., Duque, J.G., Doorn, S.K., Piryatinski, A., Dunlap, D.H., Htoon, H. (2015) "Influences of exciton-exciton annihilation on photon emission statistics of carbon nanotubes" *Physical Review Letters*: 115, 017401 U2012B0040
  58. Mara, N.A., Beyerlein, I.J. (2015) "Interface-dominant multilayers fabricated by severe plastic deformation: Stability under extreme conditions" *Current Opinions in Solid State and Materials Science*: 19, 5 U2014A0085
  59. Mayer, C., Li, N., Mara, N., Chawla, N. (2015) "Micromechanical and in situ shear testing of Al-SiC nanolaminate composites in a transmission electron microscope (TEM)" *Materials Science and Engineering A*: 621, 229 U2014A0085
  60. Moore, S.G., Stevens, M.J., Grest, G.S. (2015) "Liquid-vapor interface of the Stockmayer fluid in a uniform external field" *Physical Review E* 91, 022309
  61. Nie, W., Gupta, G., Crone, B.K., Liu, F., Smith, D.L., Ruden, P., Kuo, C., Tsai, H., Wang, H.L., Li, H., Tretiak, S., Mohite, A.D. (2015) "Interface design principles for high

efficiency organic semiconductor devices" *Advanced Sciences*: 2, 1500024  
U2014B0093

62. Nie, W., Hsinhan, T., Asadpour, R., Blancon, J.C., Kappera, R., Chhowalla, M., Neukirch, A., Tretiak, S., Gupta, G., Crochet, J., Alam, M.A., Wang, H.L., Mohite, A.D. (2015) "High-efficiency solution-processed perovskite solar cells with millimeter-scale grains" *Science*: 347, 522-525 U2014B0093
63. Nizolek, T., Avallone, J., Pollock, T., Mara, N., Beyerlein, I. (2015) "High strength bulk metallic nanolaminates" *Advanced Materials and Processes*: 173, 2 C2013A0022
64. Nizolek, T., Avallone, J., Mara, N.A., Beyerlein, I.J. (2015) "Enhanced plasticity via kinking in cubic metallic nanolaminates" *Advanced Engineering Materials*: 17, 6 C2013A0022
65. Pathak, S, Kalidindi, S.R. (2015) "Spherical nanoindentation stress-strain curves" *Materials Science and Engineering: R: Reports*. 91, 1-36
66. Paulite, M., Acharya, K. P., Nguyen, H. M., Hollingsworth, J. A. & Htoon, H. "Inverting Asymmetric Confinement Potentials in Core/Thick-Shell Nanocrystals." *The Journal of Physical Chemistry Letters*: 6, 706-711, (2015). C2013A0064
67. Ramasamy, K., Kotula, P.G., Fidler, A.F., Brumbach, M.T., Pietryga, J.M., Ivanov, S.A. (2015) "SnxGe1-x Alloy Nanocrystals: a First Step Toward Solution-Processed Group IV Photovoltaics" *Chemical Materials*: 27, 4640-4649 U2015B0017
68. Roehling, D., Perron, A., Fattebert, J-L, Coughlin, D.R, Gibbs, P.J., Gibbs, J.W., Imhoff, S.D., Tourret, D., Baldwin, J.K., Clarke, A.J., Turchi, P.E.A., McKeown, J.T. (2015) "Imaging the rapid solidification of metallic alloys in the TEM", *Microscopy and Microanalysis*: 21(S3):469-470 U2014A0006.
69. Shirshorshidian, A., Bishop, N., Dominguez, J., Wendt, J., Lilly, M.P., Carroll, M.S. (2015) "Transport spectroscopy of low disorder silicon tunnel barriers with and without Sb implants" *Nanotechnology*: 26, 205703 U2013B0148
70. Subbaiyan, N.K., Doorn, S.K. (2015) "Nanotube micellar surface chemistry- surfactant surface structure, modification and application" *Handbook of Carbon Nanomaterials: Volume 8, Chapter 1* U2013B0095
71. Subbaiyan, N.K., Parra-Vasquez, N.G., Cambre, S., Santiago Cordoba, M.A., Yalcin, S.E., Hamilton, C.E., Mack, N.H., Blackburn, J.L., Doorn, S.K., Duque, J.G. (2015) "Bench-top aqueous two-phase extraction of isolated individual single-walled carbon nanotubes" *Nano Research*: 10.1007 U2013A0024
72. Sun, C., Kirk, M., Li, M., Hattar, K., Wang, Y., Anderoglu, O., Valdez, J., Uberugga, B.P., Dickerson, R., Maloy, S.A. (2015), Microstructure, chemistry and mechanical properties of Ni-based superalloy Rene N4 under irradiation at room temperature, *Acta Materialia*, 95, 357-365. U2014A0061
73. VanDelinder, V., Wheeler, D.R., Small, L.J., Brumbach, M.T., Spoerke, E.D., Henderson,

- I., Bachand, G.D. (2015) "Simple, benign, aqueous-based animation of polycarbonate surfaces" *Applied Material Interfaces*: 10, 5643 C2014B0124
74. Wang, F., Karan, N. S., Nguyen, H. M., Ghosh, Y., Sheehan, C. J., Hollingsworth, J. A. & Htoon, H. "Correlated structural-optical study of single nanocrystals in a gap-bar antenna: effects of plasmonics on excitonic recombination pathways." *Nanoscale* 7, 9387-9393, (2015). U2013B0037
75. Wang, F., Karan, N. S., Nguyen, H. M., Ghosh, Y., Sheehan, C. J., Hollingsworth, J. A. & Htoon, H. "Quantum Optical Signature of Plasmonically Coupled Nanocrystal Quantum Dots." *Small* 11, 5028- 5034, (2015) (Back Cover) U2013B0037
76. Wang, F., Karan, N. S., Nguyen, H. M., Ghosh, Y., Hollingsworth, J. A. & Htoon, H. (2015) "Coupling Single Giant Nanocrystal Quantum Dots to the Fundamental Mode of Patch Nanoantennas through Fringe Field" *Scientific reports*: 5, 14313 U2013B0037
77. Wolf, O., Allerman, A.A., Ma, X., Wendt, J.R., Song, A.Y., Shaner, E.A., Brener, I. (2015) "Enhanced optical nonlinearities in the near-infrared using III-nitride heterstructures coupled to metamaterials" *Applied Physics Letters*: 107,151108
78. Wolf, O., Campione, S., Benz, A., Ravikumar, A.P., Liu, S., Luk, T.S., Kadlec, E.A., Shaner, E.A., Klem, J.F., Sinclair, M.B., Brener, I. (2015) "Phased-array sources based on nonlinear metamaterial nanocavities" *Nature Communications*: 6, 7667 C2014B0115
79. Wolf, O., Campione, S., Brener, I., Klem, J., Sinclair, M. (2015) "A small-footprint IR source with beam control" *Optics and Photonics News*: 54
80. Wright, A.F., Modine, N.A. (2015) "Application of the bounds-analysis approach to arsenic and gallium antisite defects in gallium arsenide" *Physical Review B*: 91, 014110 U2013B0025
81. Gupta, G., Staggs, K., Mohite, A. D., Baldwin, J. K. ; Iyer, S., et al. (2015) "Irradiation-induced formation of a spinel phase at the FeCr/MgO interface" *Acta Materialia* ; 93, 87-94
82. Yalcin, S.E., Gallande, C., Kappera, R., Yamaguchi, H., Velizhanin, K.A., Doorn, S.K., Dattelbaum, A.M., Chhowalla, M., Ajayan, P.M., Gupta, G., Mohite, A. (2015) "Imaging charge transport pathways in progressively reduced graphene oxide using electrostatic force microscopy" *ACS Nano*: 9, 2981 U2012B0055
83. Adams, P.G., Collins, A.M., Sahin, T., Subramanian, V., Urban, V.S., Vairaprakash, P., Tian, Y., Evans, D.G., Shreve, A.P., Montano, G.A. (2015) "Diblock copolymer micelles and supported films with noncovalently incorporated chromophores: A modular platform for efficient energy transfer" *Nano Letters*: 10.1021 U2015A0086
84. Adamska, L., Nazin, G.V., Doorn, S.K., Tretiak, S. (2015) "Self-trapping of charge carriers in semiconducting carbon nanotubes: structural analysis" *Journal of Physical Chemistry Letters*: 6, 3873-3879
85. Agrawal, A., Perahia, D., Grest, G.S. (2015) "Clustering effects in ionic polymers:

- Molecular dynamics simulations” *Physical Review E*: 92, 022601 U2015A0031
86. Aguiar, J.A., Anderoglu, O., Choudhury, S., Baldwin, J.K., Wang, Y., Misra, A., Uberuagapril, B.P. (2015) “Nanoscale morphologies at alloyed and irradiated metal-oxide bilayers” *Journal of Materials Science*: 50, 7 U2014B0058
  87. Alfonso-Hernandez, L., Nelson, T., Tretiak, S., Fernandez-Alberti, S. (2015) “Photoexcited energy transfer in a weakly coupled dimer” *Journal of Physical Chemistry B*: 119, 7242-7252 C2013B0039
  88. Aryal, D., Perahia, D., Grest, G.S. (2015) “Solvent controlled ion association in structured copolymers: Molecular dynamics simulations in dilute solutions” *Journal of Chemical Physics*: 143, 124905 U2015A0031
  89. Bennaceur, K., Schmidt, B.A., Gaucher, S., Laroche, D., Lilly, M.P., Reno, J.L., West, K.W., Pfeiffer, L.N., Gervais, G. (2015) “Mechanical flip chip for ultra-high electron mobility devices” *Scientific Reports*: 5, 13494 U2014A0003
  90. Bilodeau, R.A., Fullwood, D.T., Colton, J., Yeager, J.D., Bowden, A.E., Park, T. (2015) “Evolution of nanojunctions in piezoresistive nanostrand composites” *Composites Part B*: 72, 45 C2013A0091
  91. Bomberger, C.C., Vanderhoef, L.R., Rahman, A., Shah, D., Chase, D.B., Taylor, A.J., Azad, A.K., Doty, M.F., Zide, J.M.O (2015) “Determining the band alignment of TbAs:GaAs and TbAs:In<sub>0.53</sub>Ga<sub>0.47</sub>As” *Applied Physics Letters*: 107, 10 C2012A0054
  92. Bricker, W.P., Shenai, P.M., Ghosh, A., Enriquez, M.G.M., Lambrev, P.H., Liu, Z., Tan, H.S., Lo, C.S., Tretiak, S., Fernandez-Alberti, S., Zhao, Y. (2015) “Non-radiative relaxation of photoexcited chlorophylls: Theoretical and experimental study” *Scientific Report*: 5, 13625 C2013B0039
  93. Briscoe, J.L., Cho, S.Y., Brener, I. (2015) “Part-per-trillion level detection of microcystin-LR using a periodic nanostructure” *IEEE Sensors Journal*: 15, 1366
  94. Budiman, A.S., Narayanan, K.R., Li, N., Wang, J., Tamura, N., Kunz, M., Misra, A., (2015) “Plasticity evolution in nanoscale Cu/Nb single-crystal multilayers as revealed by synchrotron X-ray microdiffraction” *Materials Science and Engineering: A*: 635, 6 U2013B0018.
  95. Buitrago, C.F., Bolintineanu, D.S., Seitz, M.E., Opper, K.L., Wagener, K.B., Stevens, M.J., Frischknecht, A.L., Winey, K.I. (2015) “Direct comparisons of X-ray scattering and atomistic molecular dynamics simulations for precise acid copolymers and ionomers” *Macromolecules*: 48, 1210 C2014B0023
  96. Burghoff, D., Yang, Y., Hayton, D.J., Gao, J.R., Reno, J.L., Hu, Q. (2015) “Evaluating the coherence and time-domain profile of quantum cascade laser microcombs” *Optics Express*: 23, 1190 C2013B0004
  97. Campione, S., Brener, I., Marquier, F. (2015) “Theory of epsilon-near-zero modes in ultrathin films” *Physical Review B*: 91, 121408 U2014B0064



98. Cao, Z., Carrillo, J.M., Stevens, M.J., Dobrynin, A.V. (2015) "Adhesion and Wetting of soft nanoparticles on textured surfaces: Transition between Wenzel and Cassie-Baxter states" *Langmuir*: 31, 1693 C2013B0036
99. Catanzaro, M.J., Shi, T., Tretiak, S., Chernyak, V.Y. (2015) "Counting the Number of Excited States in Organic Semiconductors Systems Using Topology" *Journal of Chemical Physics*: 142, 084113 C2013A0054
100. Chakraborty, S., Babanova, S., Rocha, R.C., Desireddy, A., Artyushkova, K., Atanassov, P. \*, Martinez, J.S\*. (2015) "A DNA-Hosted Gold Nanocluster Enhances Enzymatic Reduction of Oxygen by Facilitating Efficient Electron Transfer" *Journal of the American Chemical Society*: 137(36), 11678-11687 RA2015A0006
101. Chason, E. Engwall, A.M., Miller, C.M., Chen, C-H., Bhandari, A. Soni, S.K., Hearne, S.J., Freund, L.B., Sheldon, B.W. (2015) "Stress evolution during growth of 1-D island arrays: Kinetics and length scaling" *Scripta Materialia* 97, 33-36.
102. Cheaito, R., Hattar, K., Gaskins, J.T., Yadav, A.K., Duda, J.C., Beechem, T.E., Ihlefeld, J.F., Piekos, E.S., Baldwin, J.K., Misra, A., Hopkins, P.E. (2015) "Thermal flux limited electron Kapitza conductance in copper-niobium multilayers" *Applied Physics Letters*: 093114 U2014B0058
103. Chen, H., Golder, M.R., Wang, F., Doorn, S.K., Jasti, R., Tretiak, S., Swan, A.K. (2015) "Raman- active modes of even-numbered cycloparaphenylenes: Comparisons between experiments and density functional theory (DFT) calculations with group theory arguments" *Journal of Physical Chemistry C*: 119, 2879-2887 U2011B69
104. Chen, L.Y., He, M., Shin, J., Richter, G., Gianola, D.S. (2015) "Measuring surface dislocation nucleation in defect-scarce nanostructures" *Nature Materials*: 10.1038 C2013A0009
105. Chen, R., Dayeh, S.A. (2015) "Size and orientation effects on the kinetics and structure of nickelide contacts to InGaAs fin structures" *Nano Letters*: 15, 6 U2013B0062
106. Chen, Y., Fu, E., Yu, K., Song, M., Liu, Y., Wang, Y., Wang, H., Zhang, X., (2015) "Enhanced radiation tolerance in immiscible Cu/Fe multilayers with coherent and incoherent layer interfaces." *Journal of Materials Research*: 30 (09), 1300-1309. C2015A0021.
107. Chen, Y., Liu, Y., Fu, E. G., Sun, C., Yu, K. Y., Song, M., Li, J., Wang, Y. Q., Wang, H., Zhang, X.,
108. (2015) "Unusual size-dependent strengthening mechanisms in helium ion-irradiated immiscible coherent Cu/Co nanolayers." *Acta Materialia* 84, 393-404. C2015A0021.
109. Chen, Y., Yu, K.Y., Liu, Y., Shao, S., Wang, H., Kirk, M.A., Wang, J., Zhang, X., (2015) "Damage- tolerant nanotwinned metals with nanovoids under radiation environments." *Nature Communications*: 6. C2015A0021.
110. Cheng, F., Gao, J., Luk, T.S., Yang, X. (2015) "Structural color printing based on

- plasmonic metasurfaces of perfect light absorption” Scientific Reports: 5, 11045  
C2014B0011
111. Chong, K.E., Staude, I., James, A., Dominguez, J., Liu, S., Campione, S., Subramania, G.S., Luk, T.S., Decker, M., Neshev, D.N., Brener, I., Kivshar, Y.S. (2015) “Polarization-independent silicon metadevices for efficient optical wavefront control” Nano Letters: 15, 5369 U2014A0030
112. Cole, W.T.S., Hlavacek, N.C., Lee, A.W.M., Kao, T.Y., Hu, Q., Reno, J.L., Saykally, R.J. (2015) “Terahertz Vrt spectrometer employing quantum cascade lasers” Chemical Physics Letters: 638, 144- 148 C2013B0004
113. Creange, N., Constantin, C., Zhu, J.X., Balatsky, A., Haraldsen, J. (2015) “Computational investigation of the electronic and optical properties of planar Ga-doped graphene” Advanced Condensation Matter: 635019 U2013B0009
114. Crook, C.B., Constantin, C., Ahmed, T., Zhu, J.X., Balatsky, A.V., Haraldsen, J.T. (2015) “Proximity-induced magnetism in transition-metal substituted graphene” Scientific Reports: 5, 12322 U2013B0009
115. De Haro, L.P., Karaulanov, T., Vreeland, E.C., Anderson, B., Hathaway, H.J., Huber, D.L., Matlashov, A.N., Nettles, C.P., Price, A.D., Monson, T.C., Flynn, E.R. (2015) “Magnetic relaxometry as applied to sensitive cancer detection and localization” Biomed Tech: 60, 5 C2014B0127
116. Decker, M., Staude, I., Falkner, M., Dominguez, J., Neshev, D.N., Brener, I., Pertsch, T., Kivshar, Y.S. (2015) “High-efficiency dielectric Huygens’ surfaces” Advanced Optical Materials: 3, 813
117. DeVore, M., Stich, D., Keller, A., Cleyrat, C., Phipps, M., Hollingsworth, J., Lidke, D., Wilson, B., Goodwin, P., Werner, J. (2015) “Time-gated 3D single quantum dot tracking with simultaneous spinning disk imaging” Review of Scientific Instruments: 86, 12 C2013A0111
118. DeVore, M., Stich, D.G., Keller, A.M., Ghosh, Y., Goodwin, P.M., Phipps, E., Stewart, M.H., Cleyrat, C., Wilson, B.S., Lidke, D.S., Hollingsworth, J., Werner, J. (2015) “Three dimensional time- gated tracking of non-blinking quantum dots in live cells” SPIE BiOS: 933812-933815 C2013A0111
119. Dhara, S., Mele, E., Agarwal, R. (2015) “Voltage-tunable circular photogalvanic effect in silicon nanowires” Scienceexpress: 10, 1126 U2013B0054
120. Dumont, E.L.P., Do, C., Hess, H. (2015) “Molecular wear of microtubules propelled by surface- adhered kinesins” Nature Nanotechnology: 10.1038 U2012A0018
121. Fagan, J.A., Haroz, E.H., Ihly, R., Gui, H., Blackburn, J.L., Simpson, J.R., Lam, S., Hight Walker, A.R., Doorn, S.K., Zheng, M. (2015) “Isolation of >1 nm diameter single-wall carbon nanotube species using aqueous two phas extraction” ACS Nano: 9, 5377 RA2015A0027

122. Fluegel, B., Mialitsin, A.V., Beaton, D.A., Reno, J.L., Mascarenhas, A. (2015) "Electronic Raman Scattering as an ultra-sensitive probe of strain effects in semiconductors" *Nature Communications*: 6 C2012B0045
123. Fluegel, B., Alberi, K., Reno, J., Mascarenhas, A. (2015) "Spectroscopic determination of the bandgap crossover composition in Mbe-grown Al<sub>x</sub>Ga<sub>1-x</sub>As" *Japanese Journal of Applied Physics*: 54, 4 C2012B0045
124. Frolova, L.V., Magedov, I.V., Harper, A., Jha, S.K., Ovezmyradov, M., Chandler, G., Garcia, J., Bethke, D., Shaner, E.A., Vasiliev, I., Kalugin, N.G. (2015) "Tetracyanoethylene oxide-functionalized graphene and graphite characterized by Raman and Auger spectroscopy" *Carbon*: 81, 216 C2013A0099
125. Galindo, J.F., Atas, E., Altan, A., Kuroda, D.G., Fernandez-Alberti, S., Tretiak, S., Kleiman, V., Roitberg, A.E. (2015) "Dynamics of energy transfer in a conjugated dendrimer driven by ultrafast localization of excitons" *Journal of the American Chemical Society*: 137, 11637-11644 C2013B0039
126. Ganguly, M., Bradsher, C., Goodwin, P., Petty, J.T. (2015) "DNA-directed fluorescence switching of silver clusters" *The Journal of Physical Chemistry C*: 119, 49 C2013B0066
127. Ghimire, N.J., Luo, Y., Williams, D.J., Bauer, E.D., Ronning, F. (2015) "Magnetotransport of single crystalline NbAs" *Journal of Physics: Condensed Matter*: 27, 152201 U2015A0081
128. Ghimire, N.J., Ronning, F., Williams, D.J., Scott, B.L., Luo, Y., Thompson, J.D., Bauer, E.D. (2015) "Investigation of the physical properties of the tetragonal CeMAl<sub>4</sub>Si<sub>2</sub> (M=Rh, Ir, Pt) compounds" *Journal of Physics: Condensed Matter*: 27, 025601 U2015A0081
129. Haroz, E.H., Duque, J.G., Simpson, J., Barros, E., Telg, H., Hight Walker, A.R., Tu, X., Zheng, M., Kono, J., Doorn, S.K. (2015) "Asymmetric excitation profiles in the resonance raman response of armchair carbon nanotubes" *Physical Review B*: 91, 205446 C2013A0029
130. Harper, J.C., Carson, B.D., Bachand, G.D., Arndt, W.D., Finley, M.R., Brinker, C.J., Edwards, T.L. (2015) "Laser machined plastic laminates: Towards portable diagnostic devices for use in low resource environments" *Electroanalysis*: 27, 11 C2013B0007
131. Henderson, I.M., Quintana, H.A., Martinez, J.A., Paxton, W.F. (2015) "Capable crosslinks: Polymersomes reinforced with catalytically active metal-ligand bonds" *Chemical Materials*: 27, 408 U2015A0062
132. Hollingsworth, J.A., Htoon, H., Piryatinski, A., Gotzinger, S., Sandoghdar, V. (2015) "When excitons and plasmons meet: Emerging function through synthesis and assembly" *MRS Bulletin*: 40, 768 C2014A0001
133. Hong, M., Ren, F., Wang, Y.Q., Zhang, H., Xiao, X., Fu, D., Yang, B., Jiang, C. (2015) "Size-dependent radiation tolerance and corrosion resistance in ion irradiated CrN/AlTiN nanofilms" *Nuclear Instruments and Methods in Physics Research B*: 342, 137 C2013B0011

134. Hong, Y.J., Lee, C.H., Yoo, J., Kim, Y.J., Jeong, J., Kim, M., Yi, G.C. (2015) "Emission color-tuned light-emitting diode microarrays of nonpolar  $\text{In}_x\text{Ga}_{1-x}\text{N}/\text{GaN}$  multishell nanotube heterostructures" *Scientific Reports*: 5, 18020 U2014B0041
135. Janish, M.T., Carter, C.B. (2015) "In-situ TEM observations of the lithiation of molybdenum disulfide" *Scripta Materialia*: 107, 22-25 U2013A0103
136. Janish, M.T., Mackay, D.T., Liu, Y., Jungjohann, K.L., Carter, C.B., Norton, M.G. (2015) "TEM in situ lithiation of tin nanoneedles for battery applications" *Journal of Material Sciences*: 10.1007 U2013A0103
137. Janish, M.T., Kotula, P.G., Boyce, B.L., Carter, C.B. (2015) "Observations of fcc and hcp tantalum" *Journal of Materials Science*: 50, 10 U2013A0103
138. Janish, M.T., Mook, W.M., Carter, C.B. (2015) "Nucleation of face-centered cubic Ta when heating thin films" *Scripta Materialia*: 96, 21-24 U2013A0103
139. Johnson, P.E., Muttli, P., Mackenzie, D., Carnes, E.C., Pelowitz, J., Mara, N.A., Mook, W.M., Jett, S.D., Dunphy, D.R., Timmins, G.S., Brinker, C.J. (2015) "Spray-dried multiscale nano-biocomposites containing living cells" *ACS Nano*: 9, 7 C2013B0007
140. Kalathi, J.T., Kumar, S.K., Rubinstein, M., Grest, G.S. (2015) "Rouse mode analysis of chain relaxation in polymer nanocomposites" *Soft Matter*: 11, 4123 U2014A0051
141. Karan, N. S., Keller, A. M., Sampat, S., Roslyak, O., Arefin, A., Hanson, C. J., Casson, J. L., Desiredy, A., Ghosh, Y., Piryatinski, A., Iyer, R. , Htoon, H., Malko, A. V. & Hollingsworth, J. A. (2015) "Plasmonic Giant Quantum Dots: Hybrid Semiconductor-Metal Nanostructures for Truly Simultaneous Optical Imaging, Photothermal Effect and Thermometry" *Chem. Sci*: 6, 2224-2236. U2013B0037, RA2012B0008, and U2013A0134
142. Keyan-Bennaceur, J., Schmidt, B.A., Gaucher, S., Laroche, D., Lilly, M.P., Reno, J.L., West, K.W., Pfeiffer, L.N., Gervais, G. (2015) "Mechanical flip-chip for ultra-high electron mobility devices" *Scientific Reports*: 5, 13494 U2014A0003
143. Khromova, I., Navarro-Cia, M., Brener, I., Reno, J.L., Ponomarev, A., Mitrofanov, O. (2015) "Dipolar resonances in conductive carbon micro-fibers probed by near-field terahertz spectroscopy" *Applied Physics Letters*: 107, 021102 C2012B0064
144. Kilina, S., Kilin, D., Tretiak, S. (2015) "Light-driven and phonon-assisted dynamics in organic and semiconductor nano-structures" *Chemistry Review*: 115, 5929-5978 C214B0092
145. Kim, H., Lee, J.T., Magasinski, A., Zhao, K., Liu, Y., Yushin, G. (2015) "In-situ TEM observation of electrochemical lithiation of sulfur confined within inner cylindrical pores of carbon nanotubes" *Advanced Energy Materials*: 10, 1002 C2013A0021
146. Koechner, M.C., Pande, J.H., Merkle, S., Henderson, S., Fullwood, D.T., Bowden, A. (2015) "Remote in situ strain sensing of carbon fiber structures using embedded conductive materials" *Composites Part B*: 69, 534 C2013A0091

147. Kraehnert, R., Ortel, E., Paul, B., Eckhardt, B., Kanis, M., Liu, R., Antoniou, A. (2015) "Electrochemically dealloyed platinum with hierarchical pore structure as highly active catalytic coating" *Catalysis Science and Technology*: 5, 206 U2014A0082
148. Lamoreux, L., Adams, P., Banisadr, A., Stromberg, Z., Graves, S., Montano, G., Moxley, R., Mukundan, H. (2015) "An optical biosensor for detection of pathogen biomarkers from Shiga toxin-producing *Escherichia coli* in ground beef samples" *Proceeding of SPIE*: 9310, 931004
149. Laroche, D., Huang, S.H., Nielsen, E., Chuang, Y., Li, J.Y., Liu, C.W., Lu, T.M. (2015) "Scattering mechanisms in shallow undoped Si/SiGe quantum wells" *AIP Advances*: 5, 107106 C2012B0019
150. Laroche, D., Huang, S.H., Nielsen, E., Liu, C.W., Li, J.Y., Lu, T.M. (2015) "Magneto-transport of an electron bilayer system in an undoped Si/SiGe double-quantum-well heterostructure" *Applied Physics Letters*: 106, 143503 C2012B0019
151. Lee, S., Zhang, W., Khatkhatay, F., Wang, H., Jia, Q.X., MacManus-Driscoll, J.L. (2015) "Ionic conductivity increased by two orders of magnitude in micrometer-thick vertical yttria-stabilized ZrO<sub>2</sub> nanocomposite films" *Nano Letters*: 15, 7362 C2013A0005
152. Lee, S., Zhang, W., Jia, Q.X., Wang, H., MacManus-Driscoll, J.L. (2015) "Strain tuning and strong enhancement of ionic conductivity in SrZrO<sub>3</sub>-RE<sub>2</sub>O<sub>3</sub> (RE=Sm, Eu, Gd, Dy, and Er) nanocomposite films" *Advanced Functional Materials*: 25, 4238 C2013A0005
153. Leonard, F., Song, E., Li, Q., Swartzentruber, B., Pan, W., Martinez, J., Wang, G. (2015) "Simultaneous thermoelectric and optoelectronic characterization of individual nanowires" *Nano Letters*: 15, 8129 C2013B0112
154. Li, B., Pan, L., Tai, Y., Graf, M., Zhu, J.X., Bassler, K., Ting, C.S. (2015) "Unified description of superconducting pairing symmetry in electron-doped Fe-based-122 compounds" *Physical Review B*: 91, 220509 U2015A0094
155. Li, C., Liu, S., Hurtado, A., Wright, J.B., Xu, H., Luk, T.S., Figiel, J.J., Brener, I., Brueck, S.R.J., Wang, G.T. (2015) "Annular-shaped emission from gallium nitride nanotube lasers" *ACS Photonics*: 10.1021 RA2014A0014
156. Li, J., Yu, K. Y., Chen, Y., Song, M., Wang, H., Kirk, M. A., Li, M., Zhang, X., (2015) "In Situ Study of Defect Migration Kinetics and Self-Healing of Twin Boundaries in Heavy Ion Irradiated Nanotwinned Metals. *Nano Letters*: 15 (5), 2922-2927. C2015A0021.
157. Li, N., Demkowicz, M., Mara, N., Wang, Y.Q., Misra, A. (2015) "Hardening due to interfacial He bubbles in nanolayered composites" *Materials Research Letters*: DOI: 10.1080/21663831.2015.1110730. U2013B0018
158. Li, N., Misra, A., Shao, S., Wang, J. (2015) "Experimental Quantification of Resolved Shear Stresses for Dislocation Motion in TiN" *Nano Letters*: 15, 4434 U2014A0085.
159. Li, N., Yadav, S., Liu, X.Y., Wang, J., Hoagland, R., Mara, N.A., Misra, A. (2015) "Growth and stress-induced transformation of zinc blended AlN layers in Al-AlN-TiN

- multilayers" Scientific Reports: 5, 18554 U2014B0058
160. Li, N., Yadav, S., Liu, X.Y., Wang, J., Hoagland, R., Mara, N.A., Misra, A. (2015) "Quantification of dislocation nucleation stress in TiN through high-resolution in situ indentation experiments and first principles calculations" Scientific Reports: 5, 15813 U2014B0058
  161. Li, Z., Tan, X., Kalisvaart, P., Janish, M.T., Mook, W.M., Jungjohann, K.L., Carter, C.B., Mitlin, D. (2015) "Coupling in-situ TEM and ex-situ analysis to understand heterogeneous sodiation of antimony" Nano Letters: 15, 10 U2013B0051
  162. Liu, J., Kilina, S., Tretiak, S., Prezhdov, O.V. (2015) "Ligands slow down pure-dephasing in semiconductor quantum dots" ACS Nano: 9, 9106-9116 C2014B0092
  163. Liu, S., Li, C., Figiel, J.J., Brueck, S.R.J., Brener, I., Wang, G.T. (2015) "Continuous and dynamic spectral tuning of single nanowire lasers with subnanometer resolution using hydrostatic pressure" Nanoscale: 7, 21 RA2014A0014
  164. Liu, Y., Vishniakou, S., Yoo, J., Dayeh, S.A. (2015) "Engineering heteromaterials to control lithium ion transport pathways" Scientific Reports: 5, 18482 U2013B0062
  165. Liu, Y., Wang, H., Zhang, X., (2015) "In Situ TEM Nanoindentation Studies on Stress-Induced Phase Transformations in Metallic Materials." JOM: the journal of the Minerals, Metals & Materials Society: 68 (1), 226-234. C2013B0013.
  166. Luk, T.S., de Ceglia, D., Liu, S., Keeler, G.A., Prasankumar, R.P., Vincenti, M.A., Scalora, M., Sinclair, M.B., Campione, S. (2015) "Enhanced third harmonic generation from the epsilon-near-zero modes of ultrathin films" Applied Physics Letters: 106, 151103 RA2014B0009
  167. Luo, Y., Li, H., Dai, Y.M., Miao, H., Shi, Y.G., Ding, H., Taylor, A.J., Yarotski, D.A., Prasankumar, R.P., Thompson, J.D. (2015) "Hall effect in the extremely large magnetoresistance material WTe<sub>2</sub>" Applied Physics Letters: 107, 182411 U2013B0125
  168. Ma, X., Hartmann, N.F., Baldwin, J.K.S., Doorn, S. K., Htoon, H. (2015) "Room-temperature single-photon generation from solitary dopants of carbon nanotubes" Nature Nanotechnology 10, 671-675
  169. MacManus-Driscoll, J.L., Suwardi, A., Kursumovic, A., Bi, Z., Tsai, C.F., Wang, H., Jia, Q.X., Lee, Q.J. (2015) "New strain states and radical property tuning of metal oxides using a nanocomposite thin film approach" APL Material: 3, 062507 U2012B0069
  170. Maksud, M., Yoo, J., Harris, C.T., Palapati, N.K.R., Subramanian, A. (2015) "Young's modulus of [111] germanium nanowires" APL Materials: 3, 116101 U2014A0084
  171. Mance, J.G., Felver, J.J., Dexheimer, S.L. (2015) "Observation of structural relaxation during exciton self-trapping via excited-state resonant impulsive stimulated Raman spectroscopy" Journal of Chemical Physics: 142, 084309 C2014A0088

172. Martin, E.J.J., Berube, N., Provencher, M.C., Silva, C., Doorn, S.K., Grey, J.K. (2015) "Resonance raman spectroscopy and imaging of push-pull conjugated polymer/fullerene solar cells" *Journal of Material Chemistry C*: 3, 6058 RA2011B0019
173. Mayer, C., Li, N., Mara, N.A., Chawla, N. (2015) "Micromechanical and in situ shear testing of Al- SiC nanolaminate composites in a transmission electron microscope (TEM)" *Materials Science and Engineering A*: 621, 229-235 C2014A0011
174. McFarland, H.L., Ahmed, T., Zhu, J.X., Balatsky, A.V., Haraldsen, J.T. (2015) "First-principles investigation of nanopore sequencing using variable voltage bias on graphene-based nanoribbons" *Journal of Physical Chemistry Letters*: 6, 2616 U2013B0009
175. Middleton, R.S., Carey, J.W., Currier, R.P., Hyman, J.D., Kang, Q., Karra, S., Jimenez-Martinez, J., Porter, M.L., Viswanathan, H.S. (2015) "Shale gas and non-aqueous fracturing fluids: Opportunities and challenges for supercritical CO<sub>2</sub>" *Applied Energy*: 147, 500 C2014A0054
176. Mitrofanov, O., Luk, T.S., Brener, I., Reno, J.L. (2015) "Plasmonic enhancement of sensitivity in terahertz (Thz) photo-conductive detectors" *Terahertz Emitters, Receivers, and Applications*: 9585 U2014A0072
177. Mitrofanov, O., Luk, T.S., Brener, I., Reno, J.L. (2015) "Photoconductive terahertz near-field detector with a hybrid nanoantenna array cavity" *ACS Photonics*: 2, 12 U2014A0072
178. Modine, N. A. and Hatcher, R. M. (2015) "Representing the Thermal State in Time-Dependent Density Functional Theory" *Journal of Chemical Physics*: 142, 204111 U2011A1097
179. Moon, J.S., Liang, Y., Stevens, T.E., Monson, T.C., Huber, D.L., Mahala, B.D., Winiarz, J.G. (2015) "Off-resonance photosensitization of a photorefractive polymer composite using PbS nanocrystals" *Journal of Physical Chemistry C*: 119, 24 C2008A151
180. Mukherjee, S., Bowman, D.N., Jakubikova, E. (2015) "Cyclometalated Fe(II) complexes as sensitizers in dye-sensitized solar cells" *Inorganic Chemistry*: 54, 2 C2012B0052
181. Myers, S. M., Wampler, W. R., and Modine, N. A. (2015) "Recombination by Band-to-Defect Tunneling near Heterojunctions in Irradiated Bipolar Devices: a Theoretical Model" *Sandia Report*: 2015-7650 U2015B0021
182. Nguyen, B.M., Swartzentruber, B.S., Ro, Y.G., Dayeh, S.A. (2015) "Facet-selective nucleation and conformal epitaxy of Ge shell on Si Nanowires" *Nano Letters*: 15, 11 U2013B0062
183. Orfield, N. J., McBride, J. R., Wang, F., Buck, M. R., Keene, J. D., Reid, K. R., Htoon, H., Hollingsworth, J. A. & Rosenthal, S. J. Quantum Yield Heterogeneity in Nonblinking Quantum Dots Revealed by Atomic Structure-Quantum Optics Correlation. *ACS Nano*, Under Revision, (2015).U2014B0001

184. Ovezmyradov, M., Magedov, I.V., Frolova, L.V., Chandler, G., Garcia, J., Bethke, D., Shaner, E.A., Kalugin, N.G. (2015) "Chemical vapor deposition of phosphorous- and boron-doped graphene using phenyl-containing molecules" *Nanoscience and Nanotechnology*: 15, 7 C2013A0099
185. Palapati, N.K.R., Pomerantseva, E., Subramanian, A. (2015) "Single nanowire manipulation within dielectrophoretic force fields in the sub-crossover frequency regime" *Nanoscale*: 7, 3109 C2014A0027
186. Parashar, V., Durand, C.P., Hap, B., Amorim, R.G., Pandey, R., Tiwari, B., Zhang, D., Liu, Y., Li, A.P., Yap, Y.K. (2015) "Switching behaviors of graphene-boron nitride nanotube heterojunctions" *Scientific Reports*: 5, 12238 U2014B0070
187. Pathak, S., Li, N., Mook, W.M., Hoagland, R.G., Baldwin, J.K., Misra, A., Wang, J., Mara, N.A. (2015) "On the origins of hardness in Cu-TiN nanolayered composites" *Scripta Materialia*: 109, 48- 51 U2014B0058
188. Park, Y., Zhugayevych, A., Postpuna, O., Kyu, S.W., Park, Y.S., Park, B., Martinez, J.S., Park, J., Tretiak, S., Wang, H.L. (2015) "A new pH sensitive fluorescent and white light emissive material through controlled intermolecular charge transfer" *Chemical Science*: 6, 789-797 U2015A0016
189. Perez del Pino, A., Gyorgy, E., Logofatu, C., Puigmarti-Luis, J., Gao, W. (2015) "Laser-induced chemical transformation of graphene oxide-iron oxide nanoparticles composites deposited on polymer substrates" *Carbon*: 10.1016 RA2012A0009
190. Porter, M.L., Jimenez-Martinez, J., Martinez, R., McCulloch, Q., Carey, J.W., Viswanathan, H.S. (2015) "Geo-material microfluidics at reservoir conditions for subsurface energy resource applications" *Lab on a Chip*: 10.1039 C2014A0054
191. Prasai, D., Klots, A.R., Newaz, A.K.M., Niezgodna, J.S., Orfield, N.J., Escobar, C.A., Wynn, A., Efimov, A., Jennings, G.K., Rosenthal, S.J., Bolotin, K.I. (2015) "Electrical control of near-field energy transfer between quantum dots and two-dimensional semiconductors" *Nano Letters*: 15, 4374 U2013A0080
192. Ramasamy, K., Gupta, R.K., Palchoudhury, et al. (2015) "Layer-Structured Copper Antimony Chalcogenides (CuSbSexS2-x): Stable Electrode Materials for Supercapacitors" *Chemical Materials*: 27, 379-386 (2015). U2014A0029
193. Ramasamy, K., Gupta, R.K., Sims, H., et al. (2015) "Layered Ternary Sulfide CuSbS2 Nanoplates for Flexible Solid-State Supercapacitors" *Journal of Material Chemistry A*: 3, 13263-13274 U2014A0029
194. Rishinaramangalam, A.K., Mishkat Ul Masabih, S., Fairchild, M.N., Wright, J.B., Shima, D.M., Balakrishnan, G., Brener, I., Brueck, S.R.J., Feezell, D.F. (2015) "Controlled growth of ordered III- nitride core-shell nanostructure arrays for visible optoelectronic devices" *Journal of Electronic Materials*: 44, 1255 C2014B0063
195. Sampat, S., Karan, N. S., Guo, T., Htoon, H., Hollingsworth, J. A. & Malko, A. V. Multistate blinking and scaling of the recombination rates in individual silica coated



- CdSe/CdS nanocrystals. ACS Photonics 2, 1505-1512, (2015). U2013A0134
196. Sampat, S., Mohite, A.D., Crone, B., Tretiak, S., Malko, A., Taylor, A.J., (2015) "Tunable charge transfer dynamics at Tetracene/LiF/C60 Interfaces" Journal of Physical Chemistry C: 119, 1286-1290 U2014B0093
197. Sautter, J., Staude, I., Decker, M., Rusak, E., Neshev, D.N., Brener, I., Kivshar, Y.S. (2015) "Active tuning of all-dielectric metasurfaces" ACS Nano: 9, 4308
198. Shcherbakov, M.R., Neshev, D.N., Hopkins, B., Shorokhov, A.S., Staude, I., Melik-Gaykazyan, E.V., Decker, M., Ezhov, A.A., Miroshnichenko, A.E., Brener, I., Fedyanin, A.A., Kivshar, Y.S. (2015) "Nonlinear properties of 'magneticlight'" Asia Pacific Physics Newsletter: 4, 57-58 U2014A0030
199. Shcherbakov, M.R., Neshev, D.N., Hopkins, B., Shorokhov, A.S., Staude, I., Melik-Gaykazyan, E.V., Decker, M., Ezhov, A.A., Miroshnichenko, A.E., Brener, I., Fedyanin, A.A., Kivshar, Y.S. (2015) "Enhanced third-harmonic generation in silicon nanoparticles driven by magnetic response" Nano Letters: 10.1021 U2014A0030
200. Shcherbakov, M.R., Shorokhov, A.S., Neshev, D.N., Hopkins, B., Staude, I., Melik-Gaykazyan, E.V., Ezhov, A.A., Miroshnichenko, A.E., Brener, I., Fedyanin, A.A., Kivshar, Y.S. (2015) "Nonlinear interference and tailorable third-harmonic generation from dielectric oligomers" ACS Photonics: 2, 578 U2014A0030
201. Schoepfner, R.L., Wheeler, J.M., Zechner, J., Michler, J., Zbib, H.M., Bahr, D.F. (2015) "Coherent interfaces increase strain-hardening behavior in tri-component nano-scale metallic multilayer thin films" Materials Research Letters: 3, 2 C2014B0081
202. Song, E., Li, Q., Swartzentruber, B.S., Pan, W., Wang, G.T., Martinez, J.A. (2015) "Enhanced thermoelectric transport in modulation-doped GaN/AlGaN Core/Shell nanowires" Nanotechnology: 27, 015204 C2013B0112
203. Staude, I., Khardikov, V., Fofang, N., Liu, S., Decker, M., Neshev, D., Luk, T.S., Brener, I., Kivshar, Y. (2015) "Shaping photoluminescence spectra with magnetoelectric resonances in all-dielectric nanoparticles" ACS Photonics: 2, 172 U2014A0030
204. Sukrittanon, S., Liu, R., Ro, Y.G., Pan, J.L., Jungjohann, K.L., Tu, C.W., Dayeh, S.A. (2015) "Enhanced conversion efficiency in wide-bandgap GaNP solar cells" Applied Physics Letters: 107, 153901 U2013B0062
205. Sun, C., Zheng, S., Wei, C. C., Wu, Y., Shao, L., Yang, Y., Hartwig, K. T., Maloy, S. A., Zinkle, S. J., Allen, T. R., Wang, H., Zhang, X., (2015) "Superior radiation-resistant nanoengineered austenitic 304L stainless steel for applications in extreme radiation environments." Scientific Reports: 5, 7801. C2015A0021.
206. Sun, L., Li, A., Luk, T.S., Yang, X., Gao, J. (2015) "Nonlocal effective medium analysis in symmetric metal-dielectric multilayer metamaterials" Physical Review B: 91, 195147 U2013A0035

207. Tai, Y.Y., Wang, C.C., Graf, M., Zhu, J.X., Ting, C.S. (2015) "Emergent topological mirror insulator in t<sub>2g</sub>-orbital systems" *Physical Review B*: 91, 041111 U2015A0094
208. Tanaka, A., Chen, R., Jungjohann, K., Dayeh, S. (2015) "Strong geometrical effects in submillimeter selective area growth and light extraction of GaN light emitting diodes on sapphire" *Scientific Reports*: 5, 17314 U2013B0062
209. Tian, M., Wang, W., Liu, Y., Jungjohann, K.L., Harris, C.T., Lee, Y.C., Yang, R. (2015) "A Three-dimensional carbon nano-network for high performance lithium ion batteries" *Nano Energy*: 11, 500- 509 C2013B0134
210. Upadhyaya, P.C., Martinez, J.A., Li, Q., Wang, G.T., Swartzentruber, B.S., Taylor, A.J., Prasankumar, R.P. (2015) "Space and time resolved spectroscopy of single GaN nanowires" *Applied Physics Letters*: 106, 263103 C2013B0093
211. Veith, G.M., Doucet, M., Baldwin, J. K., Sacchi, R.L., Fears, T. M., et al. (2015) "Direct Determination of Solid-Electrolyte Interphase Thickness and Composition as a Function of State of Charge on a Silicon Anode" *Journal of Physical Chemistry C* 119, 20339-20349
212. Viswanathan, H.S., Hyman, J.D., Karra, S., Carey, J.W., Porter, M.L., Rougier, E., Currier, R.P., Kang, Q., Zhou, L., Jimenez-Martinez, J., Makedonska, N., Chen, L., Middleton, R.S. (2015) "Using discovery science to increase efficiency of hydraulic fracturing while reducing water usage" *Hydraulic Fracturing: Environmental Issues*: Chapter 3 C2014A0054
213. Vreeland, E.C., Watt, J., Schober, G.B., Hance, B.G., Austin, M.J., Price, A.D., Fellows, B.D., Monson, T.C., Hudak, N.S., Maldonado-Camargo, L., Bohorquez, A.C., Rinaldi, C., Huber, D.L. (2015) "Enhanced nanoparticle size control by extending LaMer's mechanism" *Chemistry of Materials*: 27, 17 C2014B0127
214. Wang, G., Zhang, M., Liu, S., Xie, X.M., Ding, G.Q., Wang, Y.Q., Chu, P.K., Heng, G., Ren, W., Yuan, Q.H., Zhang, P.H., Wang, X., Di, Z.F. (2015) "Synthesis of layer-tunable graphene: A combined kinetic implantation and thermal ejection approach" *Advanced Functional Materials*: 25, 3666-3675 U2014A0013
215. Wang, X., Fan, F., Wang, J.W., Wang, H., Tao, S., Yang, A., Liu, Y., Chew, H.B., Mao, S.X., Zhu, T., Xia, S. (2015) "High damage tolerance of electrochemically lithiated silicon" *Nature Communications*: 6, 8417 C2012A0045
216. Wang, X., Pan, Z., Fan, F., Wang, J.W., Liu, Y., Mao, S.X., Zhu, T., Xia, S. (2015) "Nanoscale deformation measurement with high-resolution transmission electron microscopy and digital image correlation" *Journal of Applied Mechanics, Transactions ASME*: 82, 121001 C2012A0045
217. Wang, Z., Luk, T.S., Tan, Y., Ji, D., Zhou, M., Gan, Q., Yu, Z. (2015) "Tunneling-enabled spectrally selective thermal emitter based on flat metallic films" *Applied Physics Letters*: 106, 101104 U2013B0151

218. Xu, E.Z., Li, Z., Martinez, J.A., Sinitsyn, N., Htoon, H., Li, N., Swartzentruber, B., Hollingsworth, J.A., Wang, J., Zhang, S.X. (2015) "Diameter dependent thermoelectric properties of individual SnTe nanowires" *Nanoscale*: 7, 2869 C2013A0093
219. Xu, Y., Aguiar, J.A., Yadav, S.K., Anderoglu, O., Baldwin, J.K., Wang, Y.Q., Valdez, J.A., Misra, A., Luo, H.M., Uberuaga, B.P., Li, N. (2015) "Solute redistribution and phase stability at FeCr/TiO<sub>2</sub>-x interfaces under ion irradiation" *Acta Materialia*: 89, 364-373 U2014B0058
220. Xu, Y., Yadav, S.K., Aguiar, J.A., Anderoglu, O., Baldwin, J.K., Wang, Y.Q., Misra, A., Luo, H., Uberuaga, B.P., Li, N. (2015) "Irradiation-induced formation of a spinel phase at the FeCr/MgO interface" *Acta Materialia*: 93, 87 U2013B0018.
221. Xue, S., Fan, Z., Chen, Y., Li, J., Wang, H., Zhang, X., (2015) "The formation mechanisms of growth twins in polycrystalline Al with high stacking fault energy" *Acta Materialia*: 101, 62-70. C2015A0021
222. Yang, S.M., Lee, S., Jian, J., Zhang, W., Jia, Q.X., Wang, H., Noh, T.W., Kalinin, S.V., MacManus-Driscoll, J.L. (2015) "Strongly enhanced oxygen ion transport through Sm-doped CeO<sub>2</sub> nanopillars in nanocomposite films" *Nature Communications*: 6, 8588
223. Yan, H., Chuang, C., Zhugayevych, A., Tretiak, S., Dahlquist, F.W., Bazan, G.C. (2015) "Modeling inter-aromatic distances in *Geobacter sulfurreducens* pili relevant to biofilm charge transport" *Advanced Materials*: 27, 1908-1911 U2015A0016
224. Yoo, J., Nguyen, B.M., Campbell, I.H., Dayeh, S.A., Schuele, P., Evans, D., Picraux, S.T. (2015) "Si radial p-i-n junction arrays for photovoltaics with built-in light concentrators" *ACS Nano*: 9, 5 U2013B0062
225. Yu, K. Y., Fan, Z., Chen, Y., Song, M., Liu, Y., Wang, H., Kirk, M. A., Li, M., Zhang, X., (2015)  
 "In situ Observation of Defect Annihilation in Kr Ion-Irradiated Bulk Fe/Amorphous-Fe<sub>2</sub>Zr Nanocomposite Alloy." *Materials Research Letters*: 3 (1), 35-42. C2013B0013.
226. Zeng, J., Gao, J., Luk, T.S., Litchinitser, N.M., Yang, X. (2015) "Structuring light by concentric-ring patterned magnetic metamaterial cavities" *Nano Letters*: 10.1021 C2014B0011
227. Zhang, G.P., Si, M.S., Bai, Y.H., George, T.F. (2015) "Magnetic spin moment reduction in photoexcited ferromagnets through exchange interaction quenching: beyond the rigid band approximation" *Journal of Physics: Condensed Matter*: 27, 206003 U2014A0015
228. Zhang, G.P., Zhu, H.P., Bai, Y.H., Bonacum, J., Wu, X.S., George, T.F. (2015) "Imaging superatomic molecular orbitals in a C<sub>60</sub> molecule through four 800-nm photons" *World Scientific*: 29, 1550115 U2014A0015
229. Zhang, W., Fan, M., Li, L., Chen, A., Su, Q., Jia, Q.X., MacManus-Driscoll, J.L., Wang, H. (2015) "Heterointerface design and strain tuning in epitaxial BiFeO<sub>3</sub>:CoFe<sub>2</sub>O<sub>4</sub> nanocomposite films" *Applied Physics Letters*: 107, 21290 U2012B0069

230. Zhang, W., Li, L., Lu, P., Fan, M., Su, Q., Khatkhatay, F., Chen, A., Jia, Q.X., Zhang, X., MacManus-Driscoll, J.L., Wang, H. (2015) "Perpendicular exchange biased magnetotransport at the vertical La<sub>0.7</sub>Sr<sub>0.3</sub>MnO<sub>3</sub>-NiO heterointerface" *Nanoscale*: 7, 13808 U2012B0069
231. Zheng, S., Shao, S., Zhang, J., Wang, Y., Demkowicz, M., Beyerlein, I., Mara, N.A. (2015) "Adhesion of voids to interfaces with non-uniform energies" *Scientific Reports*: 5, 15428 U2008A119
232. Zheng, X., Shen, S., Ren, F., Cai, G., Xing, Z., Liu, Y., Liu, D., Zhang, G., Xiao, X., Wu, W., Jiang, C. (2015) "Irradiation-induced TiO<sub>2</sub> nanorods for photoelectrochemical hydrogen production" *International Journal of Hydrogen Energy*: 10.1016 C2013B0011
233. Zhou, M., Yi, S., Luk, T.S., Gan, Q., Fan, S., Yu, Z. (2015) "Analog of superradiant emission in thermal emitters" *Physical Review B*: 92 U2013B0151
234. Zhou, X.W., Ward, D.K., Doty, F.P., Zimmerman, J.A., Wong, B.M., Cruz-Campa, J.L., Nielson, G.N., Chavez, J.J., Zubia, D., McClure, J.C. (2015) "A prediction of dislocation-free CdTe/CdS photovoltaic multilayers via nano-patterning and composition grading" *Progress in Photovoltaics*: 10.1002 C2104A0050
235. Zhu, F., Men, L., Guo, Y., Zhu, Q., Bhattacharjee, U., Goodwin, P.M., Petrich, J.W., Smith, E.A., Vela, J. (2015) "Shape evolution and single particle luminescence of organometal halide perovskite nanocrystals" *ACS Nano*: 9, 3 U2012B0008
236. Zhugayevych, A., Tretiak, S. (2015) "Theoretical description of structural and electronic properties of organic photovoltaic materials" *Annual Review of Physical Chemistry*: 66, 305-330 U2015A0016