

2011 MRL PUBLICATIONS

IRG 1

a. Primary MRSEC Support

None

b. Partial MRSEC Support

None

IRG 2

a. Primary MRSEC Support

C.G. **Van de Walle**, A. Janotti, "Advances in electronic structure methods for defects and impurities in solids," *Phys. Status Solidi B* **248**, 19 (2011)

b. Partial MRSEC Support

A. Schleife, J.B. Varley, F. Fuchs, C. Rödl, F. Bechstedt, P. Rinke, A. Janotti, C.G. **Van de Walle**, "Tin dioxide from first principles: Quasiparticle electronic states and optical properties," *Phys. Rev. B* **83**, 035116 (2011)

J.R. Weber, A. Janotti, C.G. **Van de Walle**, "Native defects in Al₂O₃ and their impact on III-V/ Al₂O₃ metal-oxide-semiconductor-based devices," *J. Appl. Phys.* **109**, 033715 (2011)

Q. Yan, P. Rinke, M. Winkelkemper, A. Qteish, D. Bimberg, M. Scheffler, C.G. **Van de Walle**, "Band parameters and strain effects in ZnO and group-III nitrides," *Semicond. Sci. Technol.* **26**, 014037 (2011)

IRG 3

a. Primary MRSEC Support

J.M. Spruell, C.J. **Hawker**, "Triggered structural and property changes in polymeric nanomaterials," *Chem. Sci.* **2**, 18-26 (2011)

b. Partial MRSEC Support

N. Belman, J.N. **Israelachvili**, Y. Li, C.R. **Safinya**, V. Ezersky, A. Rabkin, O. Sima, Y. Golan, "Hierarchical superstructure of alkylamine-coated ZnS nanoparticle assemblies," *Phys. Chem. Chem. Phys.* **13**, 4974-4979 (2011)

IRG 4

a. Primary MRSEC Support

T.E. Buehl, C.J. **Palmstrøm**, A.C. **Gossard**, “Embedded ErAs nanorods on GaAs (n11) substrates by molecular beam epitaxy,” *J. Vac. Sci. Technol. B* **29**, 03C108 (2011)

Y.-I. Kim, J. Li, J.-P. Zhang, R. **Seshadri**, “GaN powders from ammonolysis: Preparation, structure, morphology, and optical properties,” *Solid State Sci.* **13**, 216-223 (2011)

b. Partial MRSEC Support

L.E. Cassels, T.E. Buehl, P.G. Burke, C.J. **Palmstrøm**, A.C. **Gossard**, G. Pernot, A. Shakouri, C.R. Haughn, M.F. Doty, J.M.O. Zide, “Growth and characterization of TbAs:GaAs nanocomposites,” *J. Vac. Sci. Technol. B* **29**, 03C114 (2011)

J.K. Kawasaki, R. Timm, T.E. Buehl, E. Lundgren, A. Mikkelsen, A.C. **Gossard**, C.J. **Palmstrøm**, “Cross-sectional scanning tunneling microscopy and spectroscopy of semimetallic ErAs nanostructures embedded in GaAs,” *J. Vac. Sci. Technol. B* **29**, 03C104 (2011)

SEEDS/Initiatives

a. Primary MRSEC Support

D.B. McIntosh, O.A. Saleh, “Salt species-dependent electrostatic effects on ssDNA elasticity,” *Macromolecules*, Article ASAP (2011)

b. Partial MRSEC Support

N.D. Treat, M.A. Brady, G. Smith, M.F. Toney, E.J. Kramer, C.J. Hawker, M.L. Chabiny, “Interdiffusion of PCBM and P3HT reveals miscibility in a photovoltaically active blend,” *Adv. Energy Mater.* **1**, 82-89 (2011)

SHARED FACILITIES

P.T. Barton, R. **Seshadri**, M.J. Rosseinsky, “Electrical and magnetic properties of the complete solid solution series between SrRuO₃ and LaRhO₃: Filling t_{2g} versus tilting,” *Phys. Rev. B* **83**, 064417(1-8) (2011)

J. Buschbeck, J. Kawasaki, T.E. Buehl, A.C. **Gossard**, C.J. **Palmstrøm**, “Growth of epitaxial NiTi shape memory alloy films on GaAs (001) and evidence of Martensitic transformation,” *J. Vac. Sci. Technol. B* **29**, 03C116 (2011)

Y. Huang, Q. Shi, C-K. Tsung, H.P. Gunawardena, L. Xie, Y. Yu, H. Liang, P. Yang, G.D. Stucky, X. Chen, “An optimized magnetite microparticle-based phosphopeptide enrichment strategy for identifying multiple phosphorylation sites in an immunoprecipitated protein,” *Analytical Biochemistry* **408**, 19-31 (2011)

J.M. LeBeau, A.J. D'Alfonso, N.J. Wright, L.J. Allen, S. **Stemmer**, "Determining ferroelectric polarity at the nanoscale," *App. Phys. Lett.* **98**, 052904 (2011)

R. Werlin, J.H. Priester, R.E. Mielke, S. Krämer, S. Jackson, P.K. Stoimenov, G.D. **Stucky**, G.N. Cherr, E. Orias, P.A. Holden, "Biomagnification of cadmium selenide quantum dots in a simple experimental microbial food chain," *Nature Nanotechnology* **6**, 65-71 (2011)

PATENTS

None