

2014 MRL PUBLICATIONS

IRG1

a. Primary MRSEC Support that Acknowledge the MRSEC Award

J.H. Ortony, S.H. Choi, J.M. Spruell, J.N. Hunt, N.A. Lynd, D.V. Krogstad, V.S. Urban, C.J. **Hawker**, E.J. Kramer, S. **Han**, "Fluidity and water in nanoscale domains define coacervate hydrogels," *Chem. Sci.* **5**, 58-67 (2014). DOI: 10.1039/C3SC52368C

b. Partial MRSEC Support that Acknowledge the MRSEC Award

M.D. Dimitriou, E.J. Kramer, C.J. **Hawker**, "Advanced techniques for the characterization of surface structure in polymer thin films and coatings," *Arabian J. Sci. Eng.* **39**, 1-13 (2014)

R. Groote, B.M. Szyja, F.A. Leibfarth, C.J. **Hawker**, N.L. Doltsinis, R.P. Sijbesma, "Strain-induced strengthening of the weakest link: The importance of intermediate geometry for the outcome of mechanochemical reactions," *Macromolecules* **47**, 1187-1192 (2014)

X. Man, K.T. Delaney, M.C. Villet, H. Orland, G.H. **Fredrickson**, "Coherent states formulation of polymer field theory," *J. Chem. Phys.* **140**, 024905 (2014). DOI 10.1063/1.4860978

S.P. Paradiso, K.T. Delaney, C.J. Garcia-Cervera, H.D. Ceniceros, G.H. **Fredrickson**, "Block copolymer self assembly during rapid solvent evaporation: Insights into cylinder growth and stability," *ACS Macro. Lett.* **3**, 16 (2014). DOI 10.1021/mz400572r

D. Yu, N.E. LaPointe, E. Guzman, V. Pessino, L. Wilson, S.C. Feinstein, M.T. **Valentine**, "Tau proteins harboring neurodegeneration-linked mutations impair kinesin translocation in vitro," *J. of Alzheimer's Disease* **39**, 301-314 (2014)

c. Publications Resulting from IRG Research, but do not Acknowledge the MRSEC Award

None

IRG2

a. Primary MRSEC Support that Acknowledge the MRSEC Award

J.B. Varley, A. Janotti, C.G. **Van de Walle**, "Hydrogenated vacancies and hidden hydrogen in SrTiO₃," *Phys. Rev. B* **89**, 075202 (2014)

b. Partial MRSEC Support that Acknowledge the MRSEC Award

L. Bjaalie, B. Himmetoglu, L. Weston, A. Janotti, C.G. **Van de Walle**, “Oxide interfaces for novel electronic applications,” *New J. Phys.* **16**, 025005 (2014)

C. Freysoldt, B. Grabowski, T. Hickel, J. Neugebauer, G. Kresse, A. Janotti, C.G. **Van de Walle**, “First-principles calculations for point defects in solids,” *Rev. Mod. Phys.* **86**, 253 (2014)

c. Publications Resulting from IRG Research, but do not Acknowledge the MRSEC Award

None

IRG3

a. Primary MRSEC Support that Acknowledge the MRSEC Award

V. Agarwal, B. **Peters**, “Nucleation near the eutectic point in a Potts-Lattice gas model,” *J. Chem. Phys.* **140**, 084111 (2014)

J.E. Douglas, C.S. Birkel, N.Verma, V.M. Miller, M. Miao, G.D. Stucky, T.M. **Pollock**, R. **Seshadri**, “Phase stability and property evolution of biphasic Ti-Ni-Sn alloys for use in thermoelectric applications,” *J. Appl. Phys.* **115**, 043720 (2014)

M.P. Echlin, A. Mottura, M. Wang, P.J. Mignone, D.P. Riley, G.V. Franks, T.M. **Pollock**, “Three-dimensional characterization of the permeability of W-Cu composites using a new ‘Tribeam’ technique,” *Acta Mater.* **64**, 307-315 (2014)

b. Partial MRSEC Support that Acknowledge the MRSEC Award

R.G. Mullen, J.E. **Shea**, B. **Peters**, “Transmission coefficients, committers, and solvent coordinates in ion-pair dissociation,” *J. Chem. Theory Comput.* **10**, 659-667 (2014)

c. Publications Resulting from IRG Research, but do not Acknowledge the MRSEC Award

None

SEEDS/INITIATIVES

a. Primary MRSEC Support that Acknowledge the MRSEC Award

None

b. Partial MRSEC Support that Acknowledge the MRSEC Award

N. Singh, S. Mubeen, J. Lee, H. Metiu, M. **Moskovits**, E.W. McFarland, "Stable electrocatalysts for autonomous photoelectrolysis of hydrobromic acid using single-junction solar cells," *Energy and Environ. Sci.* **7**, 978-981 (2014).

DOI: 10.1039/C3EE43709D

c. Publications Resulting from Seed Research, but do not Acknowledge the MRSEC Award

None

SHARED FACILITIES

A. Adeleye, A.A. Keller, "Long-term colloidal stability and metal leaching of single wall carbon nanotubes: Effect of temperature and extracellular polymeric substances," *Water Research* **49**(1), 236 (2014)

S. Artyukhin, K.T. Delaney, N.A. Spaldin, M. Mostovoy, "Landau theory of topological defects in multiferroic hexagonal manganites," *Nat. Mat.* **13**(1), 42 (2014)

A. Bezzola, B.B. Bales, L.R. Petzold, R.C. Alkire, "Numerical scaling studies of kinetically-limited electrochemical nucleation and growth with accelerated stochastic simulations," *J. Electrochem. Soc.* **161**(8), E3001-E3008 (2014)

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S.M. Copp, D. Schultz, S. Swasey, J. Pavlovich, M. Debord, A. Chiu, K. Olsson, E. Gwinn, "Magic numbers in DNA-stabilized fluorescent silver clusters lead to magic colors," *J. Phys. Chem. Lett.* **5**(6), 959 (2014)

A.R. Derk, G.M. Moore, S. Sharma, E.W. McFarland, H. Metiu, "Catalytic dry reforming of methane on ruthenium-doped ceria and ruthenium supported on ceria," *Topics in Catalysis* **57**(1-4), 118-124 (2014)

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L.M. Misch, A. Birkel, C.A. Figg, B.P. Fors, C.J. **Hawker**, G.D. Stucky, R. **Seshadri**, “Rapid microwave-assisted sol–gel preparation of Pd-substituted LnFeO_3 (Ln = Y, La): Phase formation and catalytic activity,” *Dalton Trans.* **43**, 2079-2087 (2014)

L.M. Misch, J.R. Brgoch, A. Birkel, T. Mates, G.D. Stucky, R. **Seshadri**, “Rapid microwave preparation, and *ab-initio* studies of the stable complex noble metal oxides $\text{La}_2\text{BaPdO}_5$ and $\text{La}_2\text{BaPtO}_5$,” *Inorg. Chem.* **53**, 2628-2634 (2014)

R.G. Mullen, J.-E. **Shea**, B. **Peters**, “An existence test for dividing surfaces without recrossing,” *J. Chem. Phys.* **140**, 041104 (2014)

M.A. Ojeda-Lopez, D.J. Needleman, C. Song, A. Ginsburg, P.A. Kohl, Y. Li, H.P. Miller, L. Wilson, U. Raviv, M.C. Choi, C.R. Safinya, “Transformation of taxol-stabilized microtubules into inverted tubulin tubules triggered by a tubulin conformation switch,” *Nature Mat.* **13**(2), 195-203 (2014)

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J. Song, J.M. Franck, P. Pincus, M.W. Kim, S. **Han**, “Specific ions modulate diffusion dynamics of hydration water on lipid membrane surfaces,” *J. Am. Chem. Soc.* **136**(6), 2642-2649 (2014)

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G.M. Su, T.V. Pho, N.D. Eisenmenger, C. Wang, F. Wudl, E.J. Kramer, M.L. **Chabinyc**, “Linking morphology and performance of organic solar cells based on decacyclene triimide acceptors,” *J. Mater. Chem. A* **2**, 1781–1789 (2014)

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Y. Zhang, J-H. Bahk, J. Lee, C.S. Birkel, M.L. Snedaker, D. Liu, H. Zeng, M. **Moskovits**, A. Shakouri, G.D. Stucky, “Hot carrier filtering in solution processed heterostructures: A paradigm for improving thermoelectric efficiency,” *Adv. Mater.* (published online January 28, 2014). DOI: 10.1002/adma.201304419

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PATENTS

a. Patents granted during the current period

None

b. Patent applications (excluding provisional applications) during the current period

None

c. Patents licensed during the current period

“Composition for controlled assembly and improved ordering of silicon-containing block copolymers”

G.H. **Fredrickson**, C.J. **Hawker**, E.J. Kramer, D. Montarnal

Applic. filed 1/13/14

Applic. # 14/153,355

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