

LIST OF MRSEC-SUPPORTED PUBLICATIONS

2018-2019 [138]

Mar. 1, 2018 – Feb. 28, 2019

IRG-1 [6]

a. Primary MRSEC Support that Acknowledge the MRSEC Award DMR-1720256 [5]

1. J.D. Bocarsly, C. Heikes, C.M. Brown, S.D. **Wilson**, R. **Seshadri**, Deciphering structural and magnetic disorder in the chiral skyrmion host materials $\text{Co}_x\text{Zn}_y\text{Mn}_z(x + y + z = 20)$, *Phys. Rev. Mater.* **3** (2019) 014402. DOI: 10.1103/PhysRevMaterials.3.014402
2. J.D. Bocarsly, R.F. Need, R. **Seshadri**, S.D. **Wilson**, Magnetoentropic signatures of skyrmionic phase behavior in FeGe, *Phys. Rev. B* **97** (2018) 100404. DOI: 10.1103/PhysRevB.97.100404
3. D.A. Kitchaev, I.J. **Beyerlein**, A. **Van der Ven**, Phenomenology of chiral Dzyaloshinskii-Moriya interactions in strained materials, *Phys. Rev. B* **98** (2018) 214414. DOI:10.1103/PhysRevB.98.214414
4. E.E. Levin, F. Long, J.E. Douglas, M.L.C. Buffon, L.K. Lamontagne, T.M. **Pollock**, R. **Seshadri**, Enhancing thermoelectric properties through control of nickel interstitials and phase separation in Heusler/Half-Heusler $\text{TiNi}_{1-x}\text{Sn}$ composites, *Materials* **11** (2018) 903. DOI: 10.3390/ma11060903
5. J. Shin, T.W. Cornelius, S. Labat, F. Lauraux, M.-I. Richard, G. Richter, N.P. Blanchard, D.S. **Gianola**, O. Thomas, *In situ* Bragg coherent X-ray diffraction during tensile testing of an individual Au nanowire, *J. Appl. Crystallogr.* **51** (2018) 781–788. DOI: 10.1107/S1600576718004910

b. Partial MRSEC Support that Acknowledge the MRSEC Award DMR-1720256 [1]

6. P. Callahan, J. Stinville, E. Yao, M. Echlin, J. Shin, F. Wang, M. De Graef, T.M. **Pollock**, D.S. **Gianola**, Defect characterization using transmission scanning electron microscopy, *Microsc. Microanal.* **24** (2018) 1836–1837. DOI: 10.1017/S1431927618009662

IRG-2 [13]

a. Primary MRSEC Support that Acknowledge the MRSEC Award DMR-1720256 [7]

7. E.H. Discekici, A. Anastasaki, J. **Read de Alaniz**, C.J. **Hawker**, Evolution and future directions of metal-free atom transfer radical polymerization, *Macromolecules* **51** (2018) 7421–7434. DOI: 10.1021/acs.macromol.8b01401
8. J.R. Hemmer, Z.A. Page, K.D. Clark, F. Stricker, N.D. Dolinski, C.J. **Hawker**, J. **Read de Alaniz**, Controlling dark equilibria and enhancing donor-acceptor Stenhouse adduct photoswitching properties through carbon acid design, *J. Am. Chem. Soc.* **140** (2018) 10425–10429. DOI: 10.1021/jacs.8b06067
9. G.E. Sanoja, N.S. Schauser, J.M. Bartels, C.M. Evans, M.E. **Helgeson**, R. **Seshadri**, R.A. **Segalman**, Ion transport in dynamic polymer networks based on metal–ligand coordination: Effect of cross-linker concentration, *Macromolecules* **51** (2018) 2017–2026. DOI: 10.1021/acs.macromol.7b02141
10. N.S. Schauser, G.E. Sanoja, J.M. Bartels, S.K. Jain, J.G. Hu, S. **Han**, L.M. Walker, M.E. **Helgeson**, R. **Seshadri**, R.A. **Segalman**, Decoupling bulk mechanics and mono- and multivalent ion transport in polymers based on metal–ligand coordination, *Chem. Mater.* **30** (2018) 5759–5769. DOI: 10.1021/acs.chemmater.8b02633
11. J.L. Self, N.D. Dolinski, M.S. Zayas, J. **Read de Alaniz**, C.M. **Bates**, Brønsted-acid-catalyzed exchange in polyester dynamic covalent networks, *ACS Macro Lett.* **7** (2018) 817–821. DOI: 10.1021/acsmacrolett.8b00370
12. E.H. Discekici, A.H. St. Amant, S.N. Nguyen, I-H. Lee, C.J. **Hawker**, J. **Read de Alaniz**, Endo and exo Diels–Alder adducts: Temperature-tunable building blocks for selective chemical functionalization, *J. Am. Chem. Soc.* **140** (2018) 5009–5013. DOI: 10.1021/jacs.8b01544
13. B. Narupai, Z.A. Page, N.J. Treat, A.J. McGrath, C.W. Pester, E.H. Discekici, N.D. Dolinski, G.F. Meyers, J. **Read de Alaniz**, C.J. **Hawker**, Simultaneous preparation of multiple polymer brushes under ambient conditions using microliter volumes, *Angew. Chem. Int. Ed.* **57** (2018) 13433–13438. DOI: 10.1002/anie.201805534

b. Partial MRSEC Support that Acknowledge the MRSEC Award DMR-1720256 [6]

14. N.D. Dolinski, Z.A. Page, E.H. Discekici, D. Meis, I-H. Lee, G.R. Jones, R. Whitfield, X. Pan, B.G. McCarthy, S. Shanmugam, V. Kottisch, B.P. Fors, C. Boyer, G.M. Miyake, K. Matyjaszewski, D.M. Haddleton, J. **Read de Alaniz**, A. Anastasaki, C.J. **Hawker**, What happens in the dark? Assessing the temporal control of photo-mediated controlled radical polymerizations, *J. Polym. Sci., Part A: Polym. Chem.* **57** (2019) 268–273. DOI: 10.1002/pola.29247

15. D.J. Grzetic, K.T. Delaney, G.H. **Fredrickson**, The effective χ parameter in polarizable polymeric systems: One-loop perturbation theory and field-theoretic simulations, *J. Chem. Phys.* **148** (2018) 204903. DOI: 10.1063/1.5025720
16. B. McDearmon, E. Lim, I.H. Lee, L.M. Kozycz, K. O'Hara, P.I. Robledo, N.R. Venkatesan, M.L. **Chabiny**, C.J. **Hawker**, Effects of side-chain topology on aggregation of conjugated polymers, *Macromolecules* **51** (2018) 2580–2590. DOI: 10.1021/acs.macromol.8b00176
17. B. McDearmon, Z.A. Page, M.L. **Chabiny**, C.J. **Hawker**, Organic electronics by design: The power of minor atomic and structural changes, *J. Mater. Chem. C* **6** (2018) 3564–3572. DOI: 10.1039/C7TC05052F
18. A.M. Schrader, J.I. Monroe, R. Sheil, H.A. Dobbs, T.J. Keller, Y. Li, S. Jain, M.S. Shell, J.N. Israelachvili, S. **Han**, Surface chemical heterogeneity modulates silica surface hydration, *PNAS* **115** (2018) 2890–2895. DOI: 10.1073/pnas.1722263115
19. A. Watanabe, J. Niu, D.J. Lunn, J. Lawrence, A.S. Knight, M. Zhang, C.J. **Hawker**, PET-RAFT as a facile strategy for preparing functional lipid–polymer conjugates, *J. Polym. Sci., Part A: Polym. Chem.* **56** (2018) 1259–1268. DOI: 10.1002/pola.29007

IRG-3 [11]

a. Primary MRSEC Support that Acknowledge the MRSEC Award DMR-1720256 [6]

20. S.M. Barbon, M. Rolland, A. Anastasaki, N.P. Truong, M.W. Schulze, C.M. **Bates**, C.J. **Hawker**, Macrocyclic side-chain monomers for photoinduced ATRP: Synthesis and properties versus long-chain linear isomers, *Macromolecules* **51** (2018) 6901–6910. DOI: 10.1021/acs.macromol.8b01509
21. N. Cohen, R.M. **McMeeking**, M.R. Begley, Modeling the non-linear elastic response of periodic lattice materials, *Mech. Mater.* **129** (2019) 159–168. DOI: 10.1016/j.mechmat.2018.11.010
22. J.M. Ren, A.S. Knight, B.G.P. van Ravensteijn, P. Kohl, R. Bou Zerdan, Y. Li, D.J. Lunn, A. Abdilla, G.G. Qiao, C.J. **Hawker**, DNA-inspired strand-exchange for switchable PMMA-based supramolecular morphologies, *J. Am. Chem. Soc.* **141** (2019) 2630–2635. DOI: 10.1021/jacs.8b12964
23. B.G.P. van Ravensteijn, R. Bou Zerdan, M.E. **Helgeson**, C.J. **Hawker**, Minimizing star–star coupling in Cu(0)-mediated controlled radical polymerizations, *Macromolecules* **52** (2019) 601–609. DOI: 10.1021/acs.macromol.8b02375

24. B.G.P. van Ravensteijn, R. Bou Zerdan, D. Seo, N. Cadirov, T. Watanabe, J.A. Gerbec, C.J. **Hawker**, J.N. Israelachvili, M.E. **Helgeson**, Triple function lubricant additives based on organic–inorganic hybrid star polymers: Friction reduction, wear protection, and viscosity modification, *ACS Appl. Mater. & Interfaces* **11** (2019) 1363–1375. DOI: 10.1021/acsami.8b16849
25. Z. Huang, B.B. Noble, N. Corrigan, Y. Chu, K. Satoh, D.S. Thomas, C.J. **Hawker**, G. Moad, M. Kamigaito, M.L. Coote, C. Boyer, J. Xu, Discrete and stereospecific oligomers prepared by sequential and alternating single unit monomer insertion, *J. Am. Chem. Soc.* **140** (2018) 13392–13406. DOI: 10.1021/jacs.8b08386

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26. J.A. Booth, M. Bacca, R.M. **McMeeking**, K.L. Foster, Benefit of backing-layer compliance in fibrillar adhesive patches—Resistance to peel propagation in the presence of interfacial misalignment, *Adv. Mater. Interfaces* **5** (2018) 1800272. DOI: 10.1002/admi.201800272
27. N.D. Dolinski, Z.A. Page, E.B. Callaway, F. Eisenreich, R.V. Garcia, R. Chavez, D.P. Bothman, S. Hecht, F.W. Zok, C.J. **Hawker**, Solution mask liquid lithography (SMaLL) for one-step, multimaterial 3D printing, *Adv. Mater.* **30** (2018) Article Number: 1800364. DOI: 10.1002/adma.201800364
28. T. Murakami, T. Kawamori, J.D. Gopez, A.J. McGrath, D. Klinger, K. Saito, Synthesis of PEO-based physical gels with tunable viscoelastic properties, *J. Polym. Sci., Part A: Polym. Chem.* **56** (2018) 1033–1038. DOI: 10.1002/pola.28992
29. J.M. Shin, Y.J. Lee, M. Kim, K.H. Ku, J. Lee, YJ. Kim, H. Yun, K. Liao, C.J. **Hawker**, B.J. Kim, Development of shape-tuned, monodisperse block copolymer particles through solvent-mediated particle restructuring, *Chem. Mater.* **31** (2019) 1066–1074. DOI: 10.1021/acs.chemmater.8b04777
30. C. Zhang, D.S. Kim, J. Lawrence, C.J. **Hawker**, A.K. Whittaker, Elucidating the impact of molecular structure on the ¹⁹F NMR dynamics and MRI performance of fluorinated oligomers, *ACS Macro Lett.* **7** (2018) 921–926. DOI: 10.1021/acsmacrolett.8b00433

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a. Primary MRSEC Support that Acknowledge the MRSEC Award DMR-1720256 [1]

31. P.G. Callahan, B.B. Haidet, D. Jung, G.G.E. Seward, K. **Mukherjee**, Direct observation of recombination-enhanced dislocation glide in heteroepitaxial GaAs on silicon, *Phys. Rev. Mater.* **2** (2018) 081601. DOI: 10.1103/PhysRevMaterials.2.081601

b. Partial MRSEC Support that Acknowledge the MRSEC Award DMR-1720256 [2]

32. L. Weston, D. Wickramaratne, M. Mackoite, A. Alkauskas, C.G. **Van de Walle**, Native point defects and impurities in hexagonal boron nitride, *Phys. Rev. B* **97** (2018) 214104. DOI: 10.1103/PhysRevB.97.214104
33. D. Wickramaratne, L. Weston, C.G. **Van de Walle**, Monolayer to bulk properties of hexagonal boron nitride, *J. Phys. Chem. C* **122** (2018) 25524–25529. DOI: 10.1021/acs.jpcc.8b09087

SHARED FACILITIES [105]

34. M. Abdelghany, A.A. Farid, U. Madhow, M.J.W. Rodwell, Towards all-digital mmWave massive MIMO: Designing around nonlinearities, *2018 52nd Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, USA, (2018) 1552–1557. DOI: 10.1109/ACSSC.2018.8645214
35. N.M. Abdul-Jabbar, D.L. Poerschke, C. Gabbett, C.G. Levi, Phase equilibria in the zirconia–yttria/gadolinia–silica systems, *J. Eur. Ceram. Soc.* **38** (2018) 3286–3296. DOI: 10.1016/j.jeurceramsoc.2018.03.020
36. N.L. Adamski, Z. Zhu, D. Wickramaratne, C.G. **Van de Walle**, Strategies for *p*-type doping of ZnGeN₂, *Appl. Phys. Lett.* **114** (2019) 032101. DOI: 10.1063/1.5063581
37. K. Ahadi, Z. Gui, Z. Porter, J.W. Lynn, Z. Xu, S.D. **Wilson**, A. Janotti, S. Stemmer, Carrier density control of magnetism and Berry phases in doped EuTiO₃, *APL Materials* **6** (2018) 056105. DOI: 10.1063/1.5025317
38. K. Ahadi, H. Kim, S. Stemmer, Spontaneous Hall effects in the electron system at the SmTiO₃/EuTiO₃ interface, *APL Materials* **6** (2018) 056102. DOI: 10.1063/1.5025169
39. M.A. Alreesh, P. Von Dollen, T.F. Malkowski, T. Mates, H. Albrithen, S. DenBaars, S. Nakamura, J.S. Speck, Investigation of oxygen and other impurities and their effect on the transparency of a Na flux grown GaN crystal, *J. Cryst. Growth* **508** (2019) 50–57. DOI: 10.1016/j.jcrysgro.2018.12.018
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- denaturation of proteins: Evidence of an orientation-dependent mechanism, *J. Phys. Chem. B* **122** (2018) 11390–11399. DOI: 10.1021/acs.jpcc.8b07368
41. M.K. Assefa, E.A. Pedrick, M.E. Wakefield, G. Wu, T.W. Hayton, Oxidation of the 14-membered macrocycle dibenzotetramethyltetraaza[14]annulene upon ligation to the uranyl ion, *Inorg. Chem.* **57** (2018) 8317–8324. DOI: 10.1021/acs.inorgchem.8b00966
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 47. T.L. Brown-Heft, J.A. Logan, A.P. McFadden, C. Guillemard, P. Le Fèvre, F. Bertran, S. Andrieu, C.J. Palmstrøm, Epitaxial Heusler superlattice Co₂MnAl/Fe₂MnAl with perpendicular magnetic anisotropy and termination-dependent half-metallicity, *Phys. Rev. Mater.* **2** (2018) 034402. DOI: 10.1103/PhysRevMaterials.2.034402
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 51. A.R. Chew, R. Ghosh, V. Pakhnyuk, J. Onorato, E.C. Davidson, R.A. **Segalman**, C.K. Luscombe, F.C. Spano, A. Salleo, Unraveling the effect of conformational and electronic disorder in the charge transport processes of semiconducting polymers, *Adv. Funct. Mater.* **28** (2018) 1804142. DOI: 10.1002/adfm.201804142

52. J.A. Clayton, K. Keller, M. Qi, J. Wegner, V. Koch, H. Hintz, A. Godt, S. **Han**, G. Jeschke, M.S. Sherwin, M. Yulikov, Quantitative analysis of zero-field splitting parameter distributions in Gd(III) complexes, *Phys. Chem. Chem. Phys.* **20** (2018) 10470–10492. DOI: 10.1039/C7CP08507A
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56. P. Cottingham, R.L. Brutchey, Depressed phase transitions and thermally persistent local distortions in CsPbBr_3 quantum dots, *Chem. Mater.* **30** (2018) 6711–6716. DOI: 10.1021/acs.chemmater.8b02295
57. R.L. Dally, R. Chisnell, L. Harriger, Y. Liu, J.W. Lynn, S.D. **Wilson**, Thermal evolution of quasi-one-dimensional spin correlations within the anisotropic triangular lattice of $\alpha\text{-NaMnO}_2$, *Phys. Rev. B* **98** (2018) 144444. DOI: 10.1103/PhysRevB.98.144444
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- Rodriguez, K.W. Chapman, J.T. Miller, X. Duan, R.B. Kaner, J.I. Zink, B.F. **Chmelka**, A.M. Spokoyny, A molecular cross-linking approach for hybrid metal oxides, *Nat. Mater.* **17** (2018) 341–348. DOI: 10.1038/s41563-018-0021-9
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