# MRSEC-SUPPORTED PUBLICATIONS AND PATENTS
# MRSEC IV (PERIOD 5)
# †Denotes Publications with International Co-Authors

## IRG-1 Publications resulting from PRIMARY MRSEC Support

1. Walter, J.; Charlton, T.; Ambaye, H.; Fitzsimmons, M.R.; Orth, P.P.; **Fernandes, R.M.; Leighton, C.** *Giant electrostatic modification of magnetism via electrolyte-gate-induced cluster percolation in* $La_{1-x}Sr_xCoO_{3-\delta}$. Physical Review Materials, **2018,** *2 (11)*, 111406. DOI: 10.1103/PhysRevMaterials.2.111406 **DMR-1420013**
2. Ren, X.; **Frisbie, D.; Leighton, C.** *Anomalous Cooling-Rate-Dependent Charge Transport in Electrolyte-Gated Rubrene Crystals.* Journal of Physical Chemistry Letters, **2018,** *9 (17)*, 4828-4833. DOI: 10.1021/acs.jpclett.8b01751 **DMR-1420013****
3. †He, T.; Wu, Y.; D'Avino, G.; Schmidt, E.; Stolte, M.; Cornil, J.; Beljonne, D.; Ruden, P.P.; Wurthner, F.; **Frisbie, C.D.** *Crystal step edges can trap electrons on the surfaces of n-type organic semiconductors.* Nature Communications, **2018,** *9 (1)*, 2141. DOI: 10.1038/s41467-018-04479-z **DMR-1420013****
4. Yun, H.; Ganguly, K.; Postiglione, W.; **Jalan, B.; Leighton, C.; Mkhoyan, K.A.; Jeong, J.S.** *Microstructure characterization of* $BaSnO_3$ *thin films on* $LaAlO_3$ *and* $PrScO_3$ *substrates from transmission electron microscopy.* Scientific Reports, **2018,** *8 (1)*, 10245. DOI: 10.1038/s41598-018-28520-9 **Collaboration with IRG-2, SEED. DMR-1420013****
5. Thoutam, L.R.; Yue, J.; Prakash, A.; Wang, T.; Elangovan, K.E.; **Jalan, B.** *Electrostatic Control of Insulator-Metal Transition in La-doped* $SrSnO_3$ *Films.* ACS Applied Materials & Interfaces, **2019,** *11*, 7666-7670. DOI: 10.1021/acsami.8b22034 **DMR-1420013**
6. Yue, J.; Prakash, A.; Robbins, M.C.; **Koester, S.J.; Jalan, B.** *Depletion Mode MOSFET Using La-Doped* $BaSnO_3$ *as a Channel Material.* ACS Applied Materials and Interfaces, **2018,** *10 (25)*, 21061-21065. DOI: 10.1021/acsami.8b05229 **DMR-1420013**
7. **Leighton, C.** *Electrolyte-based ionic control of functional oxides.* Nature Materials, **2019,** *18 (1)*, 13-18. DOI: 10.1038/s41563-018-0246-7 **DMR-1420013**

## IRG-1 Publications resulting from PARTIAL MRSEC Support

8. †Wang, T.; Prakash, A.; Dong, Y.; Truttmann, T.; Bucsek, A.; James, R.; Fong, D.D.; Kim, J.W.; Ryan, P.J.; Zhou, H.; **Birol, T.; Jalan, B.** *Engineering* $SrSnO_3$ *Phases and Electron Mobility at Room Temperature Using Epitaxial Strain.* ACS Applied Materials and Interfaces, **2018,** *10 (50)*, 43802-43808. DOI: 10.1021/acsami.8b16592 **DMR-1420013**
9. Li, Y.; Tabis, W.; Tang, Y.; Yu, G.; Jaroszynski, J.; Barišić, N.; **Greven, M.** *Hole pocket-driven superconductivity and its universal features in the electron-doped cuprates.* Science Advances, **2019,** *5 (2)*, eaap7349. DOI: 10.1126/sciadv.aap7349 **DMR-1420013**
10. †da Silva Neto, E.H.; Minola, M.; Yu, B.; Tabis, W.; Bluschke, M.; Unruh, D.; Suzuki, H.; Li, Y.; Yu, G.; Betto, D.; Kummer, K.; Yakhou, F.; Brookes, N.B.; Le Tacon, M.; **Greven, M.;** Keimer, B.; Damascelli, A. *Coupling between dynamic magnetic and charge-order correlations in the cuprate superconductor* $Nd_{2-x}Ce_xCuO_4$. Physical Review B, **2018,** *98 (16)*, 161114. DOI: 10.1103/PhysRevB.98.161114 **DMR-1420013**

11. Chaganti, V.R.; Prakash, A.; Yue, J.; **Jalan, B.; Koester, S.J.** *Demonstration of a Depletion-Mode $SrSnO_3$ n-Channel MESFET.* IEEE Electron Device Letters, **2018,** *39 (9)*, 8423108, 1381-1384. DOI: 10.1109/LED.2018.2861320 **DMR-1420013**
12. †Nunn, W.; Prakash, A.; Bhowmik, A.; Haislmaier, R.; Yue, J.; Garcia Lastra, J.M.; **Jalan, B.** *Frequency- and temperature-dependent dielectric response in hybrid molecular beam epitaxy-grown $BaSnO_3$ films.* APL Materials, **2018,** *6 (6)*, 066107. DOI: 10.1063/1.5027567 **DMR-1420013**
13. **Jeong, J.S.;** Wu, W.; Topsakal, M.; Yu, G.; Sasagawa, T.; **Greven, M.; Mkhoyan, K.A.** *Decomposition of $La_{2-x}Sr_xCuO_4$ into several $La_2O_3$ phases at elevated temperatures in ultrahigh vacuum inside a transmission electron microscope.* Physical Review Materials, **2018,** *2 (5)*, 054801. DOI: 10.1103/PhysRevMaterials.2.054801 **Collaboration with IRG-2, SEED. DMR-1420013**
14. Haratipour, N.; Liu, Y.; Wu, R.J.; Namgung, S.; Ruden, P.P.; **Mkhoyan, K.A.; Oh, S.H.; Koester, S.J.** *Mobility Anisotropy in Black Phosphorus MOSFETs With $HfO_2$; Gate Dielectrics.* IEEE Transactions on Electron Devices, **2018,** *65 (10)*, 8454856, 4093-4101. DOI: 10.1109/TED.2018.2865440 **Collaboration with IRG-2, SEED. DMR-1420013**
15. †Chen, L.; Zhang, Y.; **Wang, X.; Jalan, B.;** Chen, S.; Hou, Y. *Roles of Point Defects in Thermal Transport in Perovskite Barium Stannate.* Journal of Physical Chemistry C, **2018,** *122 (21)*, 11482-11490. DOI: 10.1021/acs.jpcc.8b00653 **Collaboration with IRG-2, SEED. DMR-1420013**

## IRG-1 Publications resulting from the USE OF SHARED FACILITIES

16. Thomas, M.S.; White, S.P.; **Dorfman, K.D.; Frisbie, C.D.** *Interfacial Charge Contributions to Chemical Sensing by Electrolyte-Gated Transistors with Floating Gates.* Journal of Physical Chemistry Letters, **2018,** *9 (6)*, 1335-1339. DOI: 10.1021/acs.jpclett.8b00285 **Collaboration with IRG-3. DMR-1420013**
17. †Xie, Z.; Baldea, I.; **Haugstad, G.; Frisbie, D.** *Mechanical Deformation Distinguishes Tunneling Pathways in Molecular Junctions.* Journal of the American Chemical Society, **2019,** *141 (1)*, 497-504. DOI: 10.1021/jacs.8b11248 **MRSEC Program**
18. †Xie, Z.; Baldea, I.; **Frisbie, D.** *Determination of Energy-Level Alignment in Molecular Tunnel Junctions by Transport and Spectroscopy.* Journal of the American Chemical Society, **2019,** *141 (8)*, 3670-3681. DOI: 10.1021/jacs.8b13370 **DMR-1420013**
19. Song, D.; Zare Bidoky, F.; Secor, E.B.; Hersam, M.C.; **Frisbie, D.** *Freestanding Ion Gels for Flexible, Printed, Multifunctional Microsupercapacitors.* ACS Applied Materials and Interfaces, **2019,** *11 (10)*, 9947-9954. DOI: 10.1021/acsami.8b20766 **DMR-1420013**
20. Kim, C.H.; Wang, Y.; **Frisbie, D.** *Continuous and Reversible Tuning of Electrochemical Reaction Kinetics on Back-Gated 2D Semiconductor Electrodes.* analytical chemistry, **2019,** *91 (2)*, 1627-1635. DOI: 10.1021/acs.analchem.8b05216 **DMR-1420013**
21. Cao, M.; Jochem, K.; Hyun, W.J.; **Francis, L.F.; Frisbie, D.** *Self-aligned inkjet printing of resistors and low-pass resistor-capacitor filters on roll-to-roll imprinted plastics with resistances ranging from 10 to $10^6$ Ω.*. Flexible and Printed Electronics, **2018,** *3 (4)*, 045003. DOI: 10.1088/2058-8585/aaeb6c **Collaboration with IRG-2. MRSEC Program**
22. Jochem, K.S.; Suszynski, W.J.; **Frisbie, D.; Francis, L.F.** *High-Resolution, high-aspect-ratio printed and plated metal conductors utilizing roll-to-roll microscale uv imprinting with prototype imprinting stamps.* Industrial and Engineering Chemistry Research, **2018,** *57 (48)*, 16335-16346. DOI: 10.1021/acs.iecr.8b03619 **Collaboration with IRG-2. DMR-1420013**

23. †Walter, J.; Bose, S.; Cabero, M.; Yu, G.; **Greven, M.;** Varela, M.; **Leighton, C.** *Perpendicular magnetic anisotropy via strain-engineered oxygen vacancy ordering in epitaxial* $La_{1-x}Sr_xCo\ O_{3-\delta}$. Physical Review Materials, **2018,** *2 (11)*, 111404. DOI: 10.1103/PhysRevMaterials.2.111404 **MRSEC Program**
24. Xu, B.; Magli, A.; Anugrah, Y.; **Koester, S.J.;** Perlingeiro, R.C.; Shen, W. *Nanotopography-responsive myotube alignment and orientation as a sensitive phenotypic biomarker for Duchenne Muscular Dystrophy.* Biomaterials, **2018,** *183*, 54-66. DOI: 10.1016/j.biomaterials.2018.08.047 **DMR-1420013**
25. Namgung, S.; Mohr, D.A.; Yoo, D.; Bharadwaj, P.; **Koester, S.J.; Oh, S.H.** *Ultrasmall Plasmonic Single Nanoparticle Light Source Driven by a Graphene Tunnel Junction.* ACS Nano, **2018,** *12 (3)*, 2780-2788. DOI: 10.1021/acsnano.7b09163 **Collaboration with SEED. DMR-1420013**

## IRG-2 Publications resulting from PRIMARY MRSEC Support

26. Benton, B.T.; Greenberg, B.L.; **Aydil, E.; Kortshagen, U.R.; Campbell, S.A.** *Variable range hopping conduction in ZnO nanocrystal thin films.* Nanotechnology, **2018,** *29 (41)*, 415202. DOI: 10.1088/1361-6528/aad6ce **DMR-1420013****
27. Chen, X.; Ghosh, S.; Buckley, D.T.; Mohan Sankaran, R.; **Hogan, C.J.** *Characterization of the state of nanoparticle aggregation in non-equilibrium plasma synthesis systems.* Journal of Physics D: Applied Physics, **2018,** *51 (33)*, 335203. DOI: 10.1088/1361-6463/aad26f **DMR-1420013**
28. †**Jeong, J.S.**; Song, H.; Held, J.T.; **Mkhoyan, A.** *Subatomic Channeling and Helicon-Type Beams in* $SrTiO_3$. Physical Review Letters, **2019,** *122 (7)*, 075501. DOI: 10.1103/PhysRevLett.122.075501 **Collaboration with SEED. DMR-1420013****
29. †Chen, X.; Seto, T.; **Kortshagen, U.R.; Hogan, C.J.** *Determination of nanoparticle collision cross section distribution functions in low pressure plasma synthesis reactors via ion mobility spectrometry.* Nano Futures, **2019,** *3 (1)*, 015002. DOI: 10.1088/2399-1984/aaff97 **DMR-1420013**
30. Zhi, B.; Mishra, S.; Hudson-smith, N.V.; **Kortshagen, U.R.; Haynes, C.L.** *Toxicity Evaluation of Boron- and Phosphorus-Doped Silicon Nanocrystals toward Shewanella oneidensis MR-1.* ACS Applied Nano Materials, **2018,** *1 (9)*, 4884-4893. DOI: 10.1021/acsanm.8b01053 **DMR-1420013****
31. Staller, C.M.; Robinson, Z.L.; Agrawal, A.; Gibbs, S.L.; Greenberg, B.L.; Lounis, S.D.; **Kortshagen, U.R.;** Milliron, D.J. *Tuning Nanocrystal Surface Depletion by Controlling Dopant Distribution as a Route Toward Enhanced Film Conductivity.* Nano Letters, **2018,** *18 (5)*, 2870-2878. DOI: 10.1021/acs.nanolett.7b05484 **DMR-1420013**
32. Pramanik, S.; Hill, S.K.; Zhi, B.; Hudson-Smith, N.V.; Wu, J.J.; White, J.N.; McIntire, E.A.; Kondeti, V.S.K.; Lee, A.L.; Bruggeman, P.J.; **Kortshagen, U.R.; Haynes, C.L.** *Comparative toxicity assessment of novel Si quantum dots and their traditional Cd-based counterparts using bacteria models Shewanella oneidensis and Bacillus subtilis.* Environmental Science: Nano, **2018,** *5 (8)*, 1890-1901. DOI: 10.1039/c8en00332g **DMR-1420013**
33. Sammon, M.; Chen, T.; **Shklovskii, B.I.** *Excess electron screening of remote donors and mobility in modern GaAs/AlGaAs heterostructures.* Physical Review Materials, **2018,** *2 (10)*, 104001. DOI: 10.1103/PhysRevMaterials.2.104001 **DMR-1420013****
34. Sammon, M.; Zudov, M.A.; **Shklovskii, B.I.** *Mobility and quantum mobility of modern GaAs/AlGaAs heterostructures.* Physical Review Materials, **2018,** *2 (6)*, 064604. DOI: 10.1103/PhysRevMaterials.2.064604 **DMR-1420013****

35. Lattery, D.M.; Kim, M.; Choi, J.; Lee, B.J.; **Wang, X.** *Effective Radiative Properties of Tilted Metallic Nanorod Arrays Considering Polarization Coupling.* Scientific Reports, **2018,** *8 (1).* DOI: 10.1038/s41598-018-32265-w **DMR-1420013**

## IRG-2 Publications resulting from PARTIAL MRSEC Support

36. Johnson, F.; Pankow, J.; Teeter, G.; Benton, B.; **Campbell, S.A.** *High stability near-broken gap junction for multijunction photovoltaics.* Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, **2019,** *37 (1)*, 011201. DOI: 10.1116/1.5054401 **DMR-1420013**
37. Finkenstaedt-Quinn, S.A.; Hudson-Smith, N.V.; Styles, M.J.; Maudal, M.K.; Juelfs, A.R.; **Haynes, C.L.** *Expanding the Educational Toolset for Chemistry Outreach: Providing a Chemical View of Climate Change through Hands-On Activities and Demonstrations Supplemented with TED-Ed Videos.* Journal of Chemical Education, **2018,** *95 (6)*, 985-990. DOI: 10.1021/acs.jchemed.7b00948 **DMR-1420013**
38. Hill, S.K.; Connell, R.; Peterson, C.; Hollinger, J.; **Hillmyer, M.A.; Kortshagen, U.R.; Ferry, V.E.** *Silicon Quantum Dot-Poly(methyl methacrylate) Nanocomposites with Reduced Light Scattering for Luminescent Solar Concentrators.* ACS Photonics, **2018,** *6 (1)*, 170-180. DOI: 10.1021/acsphotonics.8b01346 **Collaboration with IRG-3, SEED. DMR-1420013**
39. Wang, Y.; Kim, J.C.; Wu, R.J.; Martinez, J.; Song, X.; Yang, J.; Zhao, F.; **Mkhoyan, A.;** Jeong, H.Y.; Chhowalla, M. *Van der Waals contacts between three-dimensional metals and two-dimensional semiconductors.* Nature, **2019,** *568 (7750)*, 70-74. DOI: 10.1038/s41586-019-1052-3 **DMR-1420013**
40. Schramke, K.S.; Qin, Y.; Held, J.T.; **Mkhoyan, K.A.; Kortshagen, U.R.** *Nonthermal Plasma Synthesis of Titanium Nitride Nanocrystals with Plasmon Resonances at Near-Infrared Wavelengths Relevant to Photothermal Therapy.* ACS Applied Nano Materials, **2018,** *1 (6)*, 2869-2876. DOI: 10.1021/acsanm.8b00505 **DMR-1420013**
41. †Zhu, J.; Feng, T.; Mills, S.; Wang, P.; Wu, X.; Zhang, L.; Pantelides, S.T.; Du, X.; **Wang, X.** *Record-Low and Anisotropic Thermal Conductivity of a Quasi-One-Dimensional Bulk $ZrTe_5$ Single Crystal.* ACS Applied Materials and Interfaces, **2018,** *10 (47)*, 40740-40747. DOI: 10.1021/acsami.8b12504 **DMR-1420013**

## IRG-2 Publications resulting from the USE OF SHARED FACILITIES

42. Lade, R.K.; Jochem, K.S.; Macosko, C.W.; **Francis, L.F.** *Capillary Coatings.* Langmuir, **2018,** *34 (26)*, 7624-7639. DOI: 10.1021/acs.langmuir.8b00811 **MRSEC Program**
43. Keller, E.L.; Kang, H.; **Haynes, C.L.;** Frontiera, R.R. *Effect of Silica Supports on Plasmonic Heating of Molecular Adsorbates as Measured by Ultrafast Surface-Enhanced Raman Thermometry.* ACS Applied Materials and Interfaces, **2018,** *10 (47)*, 40577-40584. DOI: 10.1021/acsami.8b14858 **DMR-1420013**
44. †Dominguez, G.A.; Torelli, M.D.; Buchman, J.T.; **Haynes, C.L.;** Hamers, R.J.; Klaper, R.D. *Size dependent oxidative stress response of the gut of Daphnia magna to functionalized nanodiamond particles.* Environmental Research, **2018,** *167*, 267-275. DOI: 10.1016/j.envres.2018.07.024 **DMR-1420013**
45. Xiong-Hang, K.; Kemnetz-Ness, K.; Krieger, A.C.; **Haynes, C.L.** *Insight into the Effects of Plasmodium chabaudi on Platelets Using Carbon-Fiber Microelectrode Amperometry.* ACS Infectious Diseases, **2019,** *5 (4)*, 592-597. DOI: 10.1021/acsinfecdis.8b00334 **MRSEC Program**
46. Zhi, B.; Cui, Y.; Wang, S.; Frank, B.P.; Williams, D.N.; Brown, R.P.; Melby, E.S.; Hamers, R.J.; Rosenzweig, Z.; Fairbrother, D.H.; Orr, G.; **Haynes, C.L.** *Malic Acid Carbon Dots.* ACS Nano,

**2018,** *12 (6)*, 5741-5752. DOI: 10.1021/acsnano.8b01619 **DMR-1420013**

47. Zhang, D.L.; Schliep, K.B.; Wu, R.J.; Quarterman, P.; Reifsnyder Hickey, D.; Lv, Y.; Chao, X.; Li, H.; Chen, J.Y.; Zhao, Z.; Jamali, M.; **Mkhoyan, K.A.;** Wang, J.P. *Enhancement of tunneling magnetoresistance by inserting a diffusion barrier in $L1_0$-FePd perpendicular magnetic tunnel junctions.* Applied Physics Letters, **2018,** *112 (15)*, 152401. DOI: 10.1063/1.5019193 **DMR-1420013**
48. Ma, X.; Kumar, P.; Mittal, N.; Khlyustova, A.; Daoutidis, P.; **Mkhoyan, A.;** Tsapatsis, M. *Zeolitic imidazolate framework membranes made by ligand-induced permselectivation.* Science, **2018,** *361 (6406)*, 1008-1011. DOI: 10.1126/science.aat4123 **MRSEC Program**
49. Dc, M.; Grassi, R.; Chen, J.; Jamali, M.; Reifsnyder Hickey, D.; Zhang, D.; Zhao, Z.; Li, H.; Quarterman, P.; Lv, Y.; Li, M.; Manchon, A.; **Mkhoyan, K.A.; Low, T.;** Wang, J. *Room-temperature high spin–orbit torque due to quantum confinement in sputtered $Bi_xSe_{(1-x)}$ films.* Nature Materials, **2018,** *17 (9)*, 800-807. DOI: 10.1038/s41563-018-0136-z **Collaboration with SEED. DMR-1420013**
50. Conrad, S.; Kumar, P.; Xue, F.; Ren, L.; Henning, S.; Xiao, C.; **Mkhoyan, A.;** Tsapatsis, M. *Controlling Dissolution and Transformation of Zeolitic Imidazolate Frameworks by using Electron-Beam-Induced Amorphization.* Angewandte Chemie - International Edition, **2018,** *57 (41)*, 13592-13597. DOI: 10.1002/anie.201809921 **MRSEC Program**
51. Lattery, D.M.; Zhang, D.; Zhu, J.; Hang, X.; Wang, J.P.; **Wang, X.** *Low Gilbert Damping Constant in Perpendicularly Magnetized W/CoFeB/MgO Films with High Thermal Stability.* Scientific reports, **2018,** *8 (1)*, 13395. DOI: 10.1038/s41598-018-31642-9 **DMR-1420013**

## IRG-3 Publications resulting from PRIMARY MRSEC Support

52. Yadav, M.; **Bates, F.S.; Morse, D.C.** *Network Model of the Disordered Phase in Symmetric Diblock Copolymer Melts.* Physical Review Letters, **2018,** *121 (12)*, 127802. DOI: 10.1103/PhysRevLett.121.127802 **DMR-1420013****
53. †Schmidt, P.W.; Morozova, S.; Owens, P.M.; Adden, R.; Li, Y.; **Bates, F.S.; Lodge, T.P.** *Molecular Weight Dependence of Methylcellulose Fibrillar Networks.* Macromolecules, **2018,** *51 (19)*, 7767-7775. DOI: 10.1021/acs.macromol.8b01292 **DMR-1420013****
54. Morozova, S.; Schmidt, P.W.; **Bates, F.S.; Lodge, T.P.** *Effect of Poly(ethylene glycol) Grafting Density on Methylcellulose Fibril Formation.* Macromolecules, **2018,** *51 (23)*, 9413-9421. DOI: 10.1021/acs.macromol.8b01899 **DMR-1420013****
55. Wilkinson, N.A.; **Dutcher, C.S.** *Axial mixing and vortex stability to in situ radial injection in Taylor-Couette laminar and turbulent flows.* Journal of Fluid Mechanics, **2018,** *854*, 324-347. DOI: 10.1017/jfm.2018.596 **DMR-1420013**
56. Chen, Q.P.; Barreda, L.; Oquendo, L.E.; **Hillmyer, M.A.; Lodge, T.P.; Siepmann, J.I.** *Computational Design of High-$\chi$ Block Oligomers for Accessing 1 nm Domains.* ACS Nano, **2018,** *12 (5)*, 4351-4361. DOI: 10.1021/acsnano.7b09122 **DMR-1420013****
57. †Sedlacek, O.; Jirak, D.; Galisova, A.; Jager, E.; Laaser, J.E.; **Lodge, T.P.;** Stepanek, P.; Hruby, M. *$^{19}$F Magnetic Resonance Imaging of Injectable Polymeric Implants with Multiresponsive Behavior.* Chemistry of Materials, **2018,** *30 (15)*, 4892-4896. DOI: 10.1021/acs.chemmater.8b02115 **DMR-1420013**
58. Jiang, Y.; **Lodge, T.P.; Reineke, T.M.** *Packaging pDNA by Polymeric ABC Micelles Simultaneously Achieves Colloidal Stability and Structural Control.* Journal of the American Chemical Society, **2018,** *140 (35)*, 11101-11111. DOI: 10.1021/jacs.8b06309 **DMR-1420013****
59. Chen, Q.P.; Xie, S.; Foudazi, R.; **Lodge, T.P.; Siepmann, J.I.** *Understanding the Molecular*

*Weight Dependence of and the Effect of Dispersity on Polymer Blend Phase Diagrams.* Macromolecules, **2018,** *51 (10)*, 3774-3787. DOI: 10.1021/acs.macromol.8b00604 **DMR-1420013****

## IRG-3 Publications resulting from PARTIAL MRSEC Support

60. Dewilde, J.F.; Rangnekar, E.P.; Ting, J.M.; Franek, J.E.; **Bates, F.S.; Hillmyer, M.A.; Blank, D.A.** *1Outreach Efficacy with a Consistent Theme.* ACS Omega, **2019,** *4 (2)*, 2661-2668. DOI: 10.1021/acsomega.8b03156 **DMR-1420013**
61. Metaxas, A.; Wilkinson, N.; Raethke, E.; **Dutcher, C.S.** *In situ polymer flocculation and growth in Taylor-Couette flows.* Soft Matter, **2018,** *14 (42)*, 8627-8635. DOI: 10.1039/c8sm01694a **DMR-1420013**
62. Crooke, S.N.; Zheng, J.; Ganewatta, M.S.; Guldberg, S.M.; **Reineke, T.M.;** Finn, M. *Immunological Properties of Protein-Polymer Nanoparticles.* ACS Applied Nano Materials, **2019,** *2 (1)*, 93-103. DOI: 10.1021/acsabm.8b00418 **DMR-1420013**

## IRG-3 Publications resulting from the USE OF SHARED FACILITIES

63. †Jordan, A.; Kim, K.; Soetrisno, D.; Hannah, J.; **Bates, F.S.;** Jaffer, S.A.; Lhost, O.; Macosko, C.W. *Role of Crystallization on Polyolefin Interfaces.* Macromolecules, **2018,** *51 (7)*, 2506-2516. DOI: 10.1021/acs.macromol.8b00206 **MRSEC Program**
64. Jin, K.; Kim, S.; Xu, J.; **Bates, F.S.; Ellison, C.J.** *Melt-Blown Cross-Linked Fibers from Thermally Reversible Diels-Alder Polymer Networks.* ACS Macro Letters, **2018,** *7 (11)*, 1339-1345. DOI: 10.1021/acsmacrolett.8b00685 **Collaboration with SEED. MRSEC Program**
65. Xu, J.; Eagan, J.M.; Kim, S.; Pan, S.; Lee, B.; Klimovica, K.; Jin, K.; Lin, T.W.; Howard, M.J.; **Ellison, C.J.;** Lapointe, A.M.; Coates, G.W.; **Bates, F.S.** *Compatibilization of Isotactic Polypropylene (iPP) and High-Density Polyethylene (HDPE) with iPP-PE Multiblock Copolymers.* Macromolecules, **2018,** *51 (21)*, 8585-8596. DOI: 10.1021/acs.macromol.8b01907 **Collaboration with SEED. DMR-1420013**
66. Altintas, O.; Speros, J.C.; Bates, F.S.; **Hillmyer, M.A.** *Straightforward synthesis of model polystyrene-block-poly(vinyl alcohol) diblock polymers.* Polymer Chemistry, **2018,** *9 (31)*, 4243-4250. DOI: 10.1039/c8py00937f **DMR-1420013**
67. Wang, C.; Chopade, S.A.; Guo, Y.; Early, J.T.; Tang, B.; Wang, E.; **Hillmyer, M.A.; Lodge, T.P.;** Sun, C.C. *Preparation, Characterization, and Formulation Development of Drug-Drug Protic Ionic Liquids of Diphenhydramine with Ibuprofen and Naproxen.* Molecular Pharmaceutics, **2018,** *15 (9)*, 4190-4201. DOI: 10.1021/acs.molpharmaceut.8b00569 **DMR-1420013**
68. Thurber, C.; Gu, L.; Myers, J.C.; **Lodge, T.P.;** Macosko, C. *Toughening polylactide with a catalyzed epoxy-acid interfacial reaction.* Polymer Engineering and Science, **2017,** *58 (1)*, 28-36. DOI: 10.1002/pen.24527 **DMR-1420013**
69. Lewis, R.M.; Arora, A.; Beech, H.K.; Lee, B.; Lindsay, A.P.; **Lodge, T.P.; Dorfman, K.; Bates, F.S.** *Role of Chain Length in the Formation of Frank-Kasper Phases in Diblock Copolymers.* Physical Review Letters, **2018,** *121 (20)*, 208002. DOI: 10.1103/PhysRevLett.121.208002 **MRSEC Program**
70. Boyle, W.S.; Chen, W.; Rodriguez, A.; Linn, S.; Tolar, J.; Lozano, K.; **Reineke, T.M.** *Ternary Composite Nanofibers Containing Chondroitin Sulfate Scavenge Inflammatory Chemokines from Solution and Prohibit Squamous Cell Carcinoma Migration.* ACS Applied Bio Materials, **2019,** *2 (2),* 619-624. DOI: 10.1021/acsabm.8b00690 **DMR-1420013**
71. Zhang, Q.; Phillips, H.R.; Purchel, A.; Hexum, J.K.; **Reineke, T.M.** *Sustainable and Degradable Epoxy Resins from Trehalose, Cyclodextrin, and Soybean Oil Yield Tunable Mechanical*

*Performance and Cell Adhesion.* ACS Sustainable Chemistry and Engineering, **2018,** *6 (11)*, 14967-14978. DOI: 10.1021/acssuschemeng.8b03460 **DMR-1420013**

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## MRSEC-supported Patents

2018-2019

## Patent Applications

None

## Patents Granted

None

## Patents Licensed

None