

Natalia Shustova

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Professional Appointments and Education

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|----------------------------------------------------------------|--------------|
| Cottrell Scholar Selection Committee | 2022–present |
| Associate Editor, ACS Materials Letters | 2022–present |
| Professor | 2021–present |
| IAS Hans Fischer Fellow, Technical University of Munich | 2020–present |
| Peter and Bonnie McCausland Associate Professor | 2019–2020 |
| Associate Professor of Chemistry, University of South Carolina | 2018–2020 |
| Associate Editor, Materials Chemistry Frontiers | 2016–2019 |
| Assistant Professor of Chemistry, University of South Carolina | 2013–2017 |
| Postdoctoral Associate, Massachusetts Institute of Technology | 2010–2013 |
| Ph.D. in Inorganic Chemistry, Colorado State University | 2005–2010 |
| Ph.D. in Physical Chemistry, Moscow State University | 2004–2005 |

Awards and Honors

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| IAS Hans Fischer Fellowship | 2020 |
| Camille Dreyfus Teaching-Scholar Award | 2019 |
| McCausland Fellowship | 2019 |
| Distinguished Undergraduate Research Mentor Award | 2019 |
| Alfred P. Sloan Research Award | 2017 |
| Cottrell Scholar Award – Research Corporation for Science Advancement | 2017 |
| Breakthrough Award | 2017 |
| Scialog Fellow, Research Corporation for Science Advancement | 2017 |
| NSF CAREER Award | 2016 |
| MIT Infinite Kilometer Postdoctoral Award | 2013 |
| MIT/Bruker Symposium Poster Award | 2013 |
| Graduate Teaching Assistant Award, Colorado State University | 2009 |
| XIX International Symposium on Fluorine Chemistry Poster Award (first prize) | 2009 |
| German Academic Exchange Service (DAAD) Scholarship | 2009 |
| ECS Poster Award | 2009 |
| Herbert H. Uhlig ECS Summer Fellowship | 2008 |
| ECS Solid-State Science and Technology Poster Award | 2008 |
| AWIS Educational Foundation Citation of Merit | 2008 |
| International J. Soros Science Education Program Fellowship | 2002, 2005 |
| L. Euler Student Fellowship | 2003, 2004 |
| V. F. Luginin Research Award, Moscow State University | 2002, 2003 |
| International Student Conference (first prize), Moscow State University | 2002–2004 |

Publications (* denotes Shustova, N. as a corresponding author)

- Thaggard, G. C.; Haimerl, J.; Fischer, R. A.; Park, K. C.; **Shustova, N. B.*** "Traffic Lights for Catalysis: Stimuli-Responsive Molecular and Extended Catalytic Systems" *Angew. Chem. Int. Ed.* **2023**, DOI: 10.1002/anie.202302859 (accepted).
- Thaggard, G. C.; Haimerl, J.; Park, K. C.; Lim, J.; Fischer, R.; Maldeni Kankanamalage, B. K. P.; Yarbrough, B. J.; Wilson, G. R.; **Shustova, N. B.*** "Metal-Photoswitch Friendship: From Photochromic Complexes to Functional Materials" *J. Am. Chem. Soc.* **2022**, *51*, 23249–23263.
- Park, K. C.; Kittikhunnatham, P.; Lim, J.; Thaggard, G. C.; Liu, Y.; Martin, C. R.; Leith, G. A.; Toler, D. J.; Ta, A. T.; Birkner, N.; Lehman-Andino, I.; Hernandez-Jimenez, A.; Morrison, G.; Amoroso, J. W.; zur Loye, H.-C.; DiPrete, D. P.; Smith, M. D.; Brinkman, K. S.; Phillpot, S. R.; **Shustova, N. B.*** "f-block MOFs: A Pathway to Heterometallic Transuranics" *Angew. Chem. Int. Ed.* **2023**, *62*, e202216349.
- Park, K. C.; Martin, C. R.; Leith, G. A.; Thaggard, G. C.; Wilson, G. R.; Yarbrough, B. J.; Maldeni Kankanamalage, B. K. P.; Kittikhunnatham, P.; Mathur, A.; Jatoi, I.; Manzi, M. A.; Lim, J.; Lehman-Andino, I.; Hernandez-Jimenez, A.; Amoroso, J. W.; DiPrete, D. P.; Liu, Y.; Schaeperkoetter, J.; Misture, S. T.; Phillpot, S. R.; Hu, S.; Li, Y.; Leydier, A.; Proust, V.;

- Grandjean, A.; Smith, M. D.; **Shustova, N. B.*** “Capture Instead of Release: Defect-Modulated Radionuclide Leaching Kinetics in Metal-Organic Frameworks” *J. Am. Chem. Soc.* **2022**, *144*, 16139–16149.
103. Thaggard, G. C.; Leith, G. A.; Sosnin, D.; Martin, C. R.; Park, K. C.; McBride, M. K.; Lim, J.; Yarbrough, B. J.; Maldeni Kankanamalage, B. K. P.; Wilson, G. R.; Hill, A. R.; Smith, M. D.; Garashchuk, S.; Greytak, A. B.; Aprahamian, I.; **Shustova, N. B.*** “Confinement-Driven Photophysics in Hydrazone-based Hierarchical Materials” *Angew. Chem. Int. Ed.*, **2023**, *62*, e202211776 (VIP paper).
102. Stanley, P. M.; Haimerl, J.; **Shustova, N. B.**; Fischer, R. A.; Warnan, J. “Merging Molecular Catalysts and Metal–Organic Frameworks for Photocatalytic Fuel Production” *Nat. Chem.* **2022**, *14*, 1342–1356.
101. Leith, G. A.; **Shustova, N. B.*** “Keeping COFs in the loop” *Nat. Chem.* **2022**, *14*, 485–486.
100. Martin, C. R.; Park, K. C.; Leith, G. A.; Yu, J.; Mathur, A.; Wilson, G. R.; Gange, G. B.; Barth, E. L.; Ly, R. T.; Manley, O. M.; Forrester, K. L.; Karakalos, S. G.; Smith, M. D.; Makris, T. M.; Vannucci, A. K.; Peryshkov, D. V.; **Shustova, N. B.*** “Stimuli-Modulated Metal Oxidation States in Photochromic MOFs” *J. Am. Chem. Soc.* **2022**, *144*, 4457–4468 (highlighted on the cover).
90. Leith, G. A.; Martin, C. R.; Park, K. C.; **Shustova, N. B.*** “Playing “Jenga” with MOFs: De-interpenetration for Pore Opening” *Chem.* **2022**, *14*, 485–486.
98. Kittikhunnatham, P.; Leith, G. A.; Mathur, A.; Naglic, J. K.; Martin, C. R.; Park, K. C.; McCullough, K.; Jayaweera, C. H. D. A.; Corkill, R. E.; Lauterbach, J.; Karakalos, S. G.; Smith, M. D.; Garashchuk, S.; Chen, D. A.; **Shustova, N. B.*** “A MOF Multifunctional Cargo Vehicle for Reactive-Gas Delivery and Catalysis” *Angew. Chem. Int. Ed.* **2022**, *61*, e20211390.
97. Martin, C. R.; Leith, G. A.; Kittikhunnatham, P.; Park, K. C.; Ejegbavwo, O. A.; Mathur, A.; Callahan, C. R.; Desmond, S. L.; Keener, M. R.; Ahmed, F.; Pandey, S.; Smith, M. D.; Phillipot, S. R.; Greytak, A. B.; **Shustova, N. B.*** “Heterometallic Actinide-Containing Photoresponsive Metal-Organic Frameworks: Dynamic and Static Tuning of Electronic Properties” *Angew. Chem. Int. Ed.* **2021**, *60*, 8072–8080 (article featured as a frontispiece; Metal-Organic Frameworks: Special Collection).
96. Chen, D. A.; Jimenez, J. D.; Senanayake, S. D.; Stetzler, J. P.; Shakya, D. M.; Mcarver, G. A.; Rajeshkumar, T.; Vogiatzis, K. D.; Mathur, A.; **Shustova, N. B.**; Myrick, M. L.; Metavarayuth, K.; Royko, M. M.; Lauterbach, J.; Tate, G. L.; Monnier, J. R. “Mechanistic Investigations of Gas-Phase Catalytic Hydrogenation in Metal-Organic Frameworks: Cooperative Activity of the Metal and Linker Sites in $Cu_xRh_{3-x}(BTC)_2$ ” *J. Phys. Chem. C.* **2022**, *60*, 11553–11565.
95. Leith, G. A.; **Shustova, N. B.*** “Graphitic Supramolecular Architectures Based on Corannulene, Fullerene, and Beyond” *Chem. Comm.* **2021**, *57*, 10125–10138 (invited).
94. Stanley, P. M.; Haimerl, J.; Thomas, C.; Urstoeger, A.; Schuster, M.; **Shustova, N. B.**; Casini, A.; Rieger, B.; Warnan, J.; Fischer, R. A. “Host-Guest Interactions in Metal-Organic Framework Isorecticular Series for Molecular Photocatalytic CO₂ Reduction” *Angew. Chem. Int. Ed.* **2021**, *60*, 17854–17860 (highlighted on the cover).
93. Martin, C. R.; Leith, G. A.; **Shustova, N. B.*** “Beyond Structural Motifs: The Frontier of Actinide-Containing Metal-Organic Frameworks” *Chem. Sci.* **2021**, *12*, 7214–7230 (invited).
92. Leith, G. A.; Martin, C. R.; Mathur, A.; Kittikhunnatham, P.; Park, K. C.; **Shustova, N. B.*** “Dynamically-Controlled Electronic Behavior of Stimuli-Responsive Materials: Exploring Dimensionality and Connectivity” *Adv. Energy Mater.* **2022**, *12*, 2100441 (special Issue: “Dimensionality, Emerging Materials, and Energy”).
91. Martin, C. R.; Park, K. C.; Corkill, R. E.; Kittikhunnatham, P.; Leith, G. A.; Mathur, A.; Abiodun, S. L.; Greytak, A. B.; **Shustova, N. B.*** “Photoresponsive Frameworks: Energy Transfer in the Spotlight” *Faraday Discuss.*, **2021**, *231*, 266–280 (invited contribution as a part of a Faraday Discussion Series: “MOFs for Energy and the Environment”).
90. Leith, G. A.; Rice, A. M.; Yarbrough, B. J.; Kittikhunnatham, P.; Mathur, A.; Morris, N. A.; Francis, M. J.; Berseneva, A. A.; Dhull, P.; Adams, R. D.; Bobo, M. V.; Vannucci, A. A.; Smith, M. D.; Garashchuk, S.; **Shustova, N. B.*** “Broken-Hearted” Carbon Bowl via Electron Shuttle Reaction: Energetics and Electron Coupling” *Chem. Sci.* **2021**, *12*, 6600–6606.
89. Li, Y.; Hu, S.; Hilty, F. W.; Montgomery, R.; Park, K. C.; Martin, C. R.; **Shustova, N. B.**; Liu, Y.; Phillipot, S. R. “Leaching Model of Radionuclides in Metal-Organic Framework Particles” *Comput. Mater. Sci.* **2022**, *201*, 110886.
88. Leith, G. A.; Martin, C. R.; Mayers, J.; Kittikhunnatham, P.; Larsen, R.; **Shustova, N. B.*** “Confinement-Guided Photophysics in MOFs, COFs, and Cages” *Chem. Soc. Rev.* **2021**, *50*, 4382–4410. (themed collection of Chemical Society Reviews on “Nanocconfinement”)
87. **Shustova, N. B.*** “Natalia Shustova answers questions about 15 years of research on covalent organic frameworks” *Nat. Commun.* **2020**, *11*, 5329.
86. Dolgoplova, E. A.; Berseneva, A. A.; Faillace, M. S.; Ejegbavwo, O. A.; Leith, G. A.; Choi, S. W.; Gregory, H. N.; Rice, A. M.; Smith, M. D.; Chruszcz, M.; Garashchuk, S.; Myhre, K.; **Shustova, N. B.*** “Confinement-Driven Photophysics in Cages, Covalent–Organic Frameworks, Metal–Organic Frameworks, and DNA” *J. Am. Chem. Soc.* **2020**, *142*, 4769–4783.
85. Leith, G. A.; Rice, A. M.; Yarbrough, B. J.; Berseneva, A. A.; Ly, R. T.; Buck, C. N. III; Chusov, D.; Brandt, A. J.; Chen, D. A.; Lamm, B. W.; Stefik, M.; Stephenson, K. S.; Smith, M. D.; Vannucci, A. K.; Pellechia, P. J.; Garashchuk, S.;

- Shustova, N. B.*** “A Dual Threat: Redox-Activity and Electronic Structures of Well-Defined Donor-Acceptor Fullerene Covalent-Organic Materials” *Angew. Chem. Int. Ed.* **2020**, *59*, 6000–6009.
84. Ejegbavwo, O. E.; Berseneva, A. A.; Martin, C. R.; Leith, G. A.; Pandey, S.; Brandt, A. J.; Park, K. C.; Mathur, A.; Farzandh, S.; Klepov, V. V.; Heiser, B. J.; Chandrashekhara, Mvs.; Karakalos, S. G.; Smith, M. D.; Phillpot, S. R.; Garashchuk, S.; Chen, D. A.; **Shustova, N. B.*** “Heterometallic Multinuclear Nodes Directing MOF Electronic Behavior” *Chem. Sci.* **2020**, *11* 7379–7389.
83. Martin, C. R.; Kittikhunnatham, P.; Leith, G. A.; Berseneva, A. A.; Park, K. C.; Greytak, A. B.; **Shustova, N. B.*** “Let the Light be a Guide: Chromophore Communication in Metal-Organic Frameworks” *Nano Res.* **2021**, *14*, 338–354 (**special issue: Future Directions of Reticular Chemistry**).
82. Metavarayuth, K.; Ejegbavwo, O. A.; McCarver, G.; Myrick, M.; Makris, T.; Vogiatzis, K.; Senanayake, S.; Manley, O.; Ebrahim, A.; Frenkel, A.; Hwang, S.; Rajeshkumar, T.; Jimenez, J.; Chen, K.; **Shustova, N. B.***; Chen, D. A. “Direct Identification of Mixed-Metal Centers in Metal–Organic Frameworks: Cu₃(BTC)₂ Transmetalated with Rh²⁺ Ions” *Phys. Chem. Lett.* **2020**, *11*, 8138–8144.
81. Pandey, S.; Demaske, B.; Ejegbavwo, O. A.; Berseneva, A. A.; Setyawan, W.; Shustova, N. B.; Phillpot, S. “Electronic Structures and Magnetism of Zr-, Th-, and U-based Metal-Organic Frameworks (MOFs) by Density Functional Theory” *Comput. Mat. Sci.* **2020**, *184*, 109903.
80. Brandt, A. J.; Shakya, D.; Metavarayuth, K.; Dolgoplova, E.; Hensley, L.; Duke, A. S.; Farzandh, S.; Stefik, M.; **Shustova, N. B.***; Chen, D. A. “Growth of Crystalline Bimetallic Metal-Organic Framework Films via Transmetalation” *Langmuir* **2020**, *36*, 9900–9908.
79. Li, D.; Shustova, N. B.; Martin, C. R.; Taylor-Pashow, K.; Seaman, J. C.; Kaplan, D. I.; Amoroso, J. W.; Chernikov, R. J. Anion-Exchanged and Quaternary Ammonium Functionalized MIL-101-Cr Metal-Organic Framework (MOF) for ReO⁻/TcO⁻ Sequestration from Groundwater *Environ. Radioact.* **2020**, *222*, 106372.
78. Ejegbavwo, O. A.; Martin, C. R.; Oyindamola, A. O.; Leith, G. A.; Ly, R. T.; Rice, A. M.; Dolgoplova, E. A.; Smith, M. D.; Karakalos, S. G.; Birkner, N.; Powell, B. A.; Pandey, S.; Koch, R. J.; Mixture, S. T.; zur Loye, H.-C.; Phillpot, S. R.; Brinkman, K. S.; Shustova, N. B. “Thermodynamics and Electronic Properties of Heterometallic Multinuclear An-MOFs with “Structural Memory”” *J. Am. Chem. Soc.* **2019**, *141*, 11628–11640 (**highlighted on the cover**).
77. Leith, G. A.; Berseneva, A. A.; Mathur, A.; Park, K. C.; **Shustova, N. B.*** “A Multivariate Toolbox for Donor–Acceptor Alignment: MOFs and COFs” *Trends Chem.* **2020**, *2*, 367–382. (**highlighted in the special issue: First Anniversary–Laying Groundwork for the Future; the editor’s choice of Trends in Chemistry papers**).
76. Rice, A. M.; Martin, C. R.; Galitskiy, V. A.; Berseneva, A. A.; Leith, G. A.; **Shustova, N. B.*** “Photophysics Modulation in Photoswitchable Metal–Organic Frameworks” *Chem. Rev.* **2020**, *120*, 8790–8813.
75. Berseneva, A. A.; Martin, C. R.; Galitskiy, V. A.; Ejegbavwo, O. A.; Ly, R. T.; Rice, A. M.; Dolgoplova, E. A.; Smith, M. D.; zur Loye, H.-C.; DiPrete, D. P.; Amoroso, J. W.; **Shustova, N. B.*** “Boarding-up”: Radiation Damage and Radionuclide Leaching Kinetics in Linker-Capped Metal-Organic Frameworks” *Inorg. Chem.* **2020**, *59*, 179–183. (**highlighted in “Inorganic Chemistry Forum on Innovative f-Element Chelating Strategies”**).
74. Shakya, D. M.; Ejegbavwo, O. A.; Rajeshkumar, T.; Senanayake, S. D.; Brandt, A. J.; Farzandh, S.; Acharya, N.; Ebrahim, A. M.; Frenkel, A. I.; Rui, N.; Tate, G. L.; Monnier, J. R.; Vogiatzis, K. D.; **Shustova, N. B.***; Chen, D. A. “Selective Catalytic Chemistry at Rhodium (II) Nodes in Bimetallic Metal-Organic Frameworks” *Angew. Chem. Int. Ed.* **2019**, *131*, 58, 16533–16537.
73. Dolgoplova, E. A.; Galitskiy, V. A.; Martin, C. R.; Gregory, H. N.; Yarbrough, B. J.; Rice, A. M.; Berseneva, A. A.; Ejegbavwo, O. A.; Stephenson, K. S.; Kittikhunnatham, P.; Karakalos, S. G.; Smith, M. D.; Greytak, A. B.; Garashchuk, S.; **Shustova, N. B.*** “Connecting Wires: Photoinduced Electronic Structure Modulation in Metal-Organic Frameworks” *J. Am. Chem. Soc.*, **2019**, *141*, 5350–5355.
72. Rice, A. M.; Leith, G. A.; Ejegbavwo, O. A.; Dolgoplova, E. A.; **Shustova, N. B.*** “Heterometallic Metal-Organic Frameworks (MOFs): The Advent of Improving the Energy Landscape” *ACS Energy Lett.*, **2019**, *4*, 1938–1946 (**highlighted on the cover**).
71. Pandey, S.; Jia, Z.; Demaske, B.; Ejegbavwo, O. A.; Setyawan, W.; Henager, C. H.; Shustova, N. B.; Phillpot, S. R. “Sequestration of Radionuclides in Metal–Organic Frameworks from Density Functional Theory Calculations” *J. Phys. Chem. C* **2019**, *123*, 26842–26855.
70. Williams, D. E.; Martin, C. R.; Dolgoplova, E. A.; Swifton, A.; Godfrey, D. C.; Ejegbavwo, O. A.; Pellechia, P.; Smith, M. D.; **Shustova, N. B.*** “Flipping the Switch: Fast Photoisomerization in a Confined Environment” *J. Am. Chem. Soc.*, **2018**, *40*, 7611–7622 (**highlighted on the cover**).
69. Rice, E. A.; Dolgoplova, E. A.; Yarbrough, B. J.; Leith, G. A.; Martin, C. R.; Stephenson, K. S.; Heugh, R. A.; Brandt, A. J.; Chen, D. A.; Karakalos, S. G.; Smith, M. D.; Hatzell, K. B.; Pellechia, P. J.; Garashchuk, S.; Shustova, N. B. “Stack the Bowls: Tailoring the Electronic Structure of Corannulene-Integrated Crystalline Materials” *Angew. Chem. Int. Ed.* **2018**, *57*, 11310–11315.

68. Dolgoplova, E. A.; Rice, A. M.; **Shustova, N. B.*** "Photochemistry and Photophysics of MOFs: Steps Towards MOF-based Sensing Enhancements" *Chem. Soc. Rev.* **2018**, *47*, 4710–4728 (**highlighted on the cover**).
67. Dolgoplova, E. A.; Rice, A. M.; **Shustova, N. B.*** "Actinide-based MOFs: A Middle Ground in Solution and Solid-State Structural Motifs" *Chem. Commun. (Emerging Investigator Issue)* **2018**, *54*, 6472–6483 (**highlighted on the cover**).
66. zur Loye, H.-C.; Besmann, T.; Amoroso, J.; Brinkman, K.; Grandjean, A.; Henager, C. H.; Hu, S.; Mixture, S. T.; Phillpot, S. R.; **Shustova, N. B.**; Wang, H.; Koch, R. J.; Morrison, G.; Dolgoplova, E. "Hierarchical Materials as Tailored Nuclear Waste Forms: A Perspective" *Chem. Mater.* **2018**, *30*, 4475–4488.
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64. Dolgoplova, E. A.; Brandt, A. J.; Ejegbavwo, O. A.; Duke, A. S.; Maddumapatabandi, T. D.; Galhenage, R. P.; Larson, B. W.; Reid, O. G.; Ammal, S. C.; Heyden, A.; Chandrashekhar, Mvs; Stavila, V.; Chen, D. A.; **Shustova, N. B.*** "Electronic Properties of Bimetallic Metal–Organic Frameworks (MOFs): Tailoring the Density of Electronic States through MOF Modularity" *J. Am. Chem. Soc.*, **2017**, *139*, 5201–5209.
63. Dolgoplova, E. A.; Ejegbavwo, O. A.; Martin, C. R.; Smith, M. D.; Setyawan, W.; Karakalos, S. G.; Henager, C. H.; zur Loye, H.-C.; **Shustova, N. B.*** "Multifaceted Modularity: A Key for Stepwise Building of Hierarchical Complexity in Actinide Metal–Organic Frameworks" *J. Am. Chem. Soc.*, **2017**, *39*, 16852–16861.
62. Rice, A. M.; Fellows, W. B.; Dolgoplova, E. A.; Greytak, A. B.; Vannucci, A. K.; Smith, M. D.; Karakalos, S. G.; Krause, J. A.; Avdoshenko, S. M.; Popov, A. A.; **Shustova, N. B.*** "Hierarchical Corannulene-Based Materials: Energy Transfer and Solid-State Photophysics" *Angew. Chem. Int. Ed.* **2017**, *56*, 4525–4529.
61. Rice, A. M.; Dolgoplova, E. A.; **Shustova, N. B.*** "Fulleretic Materials: Buckyball- and Buckybowl-Based Crystalline Frameworks" *Chem. Mater.* **2017**, *29*, 7054–7061.
60. Dolgoplova, E. A.; Moore, T. C.; Ejegbavwo, O. A.; Pellechia, P.; Smith, M. D.; **Shustova, N. B.*** "A Metal–Organic Framework as a Flask: Photophysics of Confined Chromophores with a Benzylidene Imidazolinone Core" *Chem. Commun. (Emerging Investigator Issue)*, **2017**, *53*, 7361–7364.
59. Dolgoplova, E. A.; **Shustova, N. B.*** "Metal–Organic Framework Photophysics: Optoelectronic Devices, Photoswitches, Sensors, and Photocatalysts" *MRS Bulletin*, **2016**, *41*, 890–896 (**highlighted on the cover**).
58. Fellows, B. W.; Rice, A. M.; Williams, D. E.; Dolgoplova, E. A.; Vannucci, A. K.; Pellechia, P.J.; Smith, M. D.; Krause, J. A.; **Shustova, N. B.*** "Redox-Active Corannulene Buckybowls in a Crystalline Hybrid Scaffold" *Angew. Chem. Int. Ed.* **2016**, *55*, 2195–2199 (**highlighted on the cover**).
57. Williams, D. E.; Godfrey, D. C.; Ermolaeva, E. D. Pellechia, P. J.; Greytak, A. B.; Smith, M. D.; Avdoshenko, S. M.; Popov, A. A.; **Shustova, N. B.*** "Fulleretic Well-Defined Scaffolds: Donor-Fullerene Alignment Through Metal Coordination and Its Effect on Photophysics" *Angew. Chem. Int. Ed.* **2016**, *55*, 9070–9074.
56. Dolgoplova, E. A.; Rice, A. M.; Smith, M. D.; **Shustova, N. B.*** "Photophysics, Dynamics, and Energy Transfer in Rigid Mimics of GFP-based Systems" *Inorg. Chem.* **2016**, *55*, 7257–7264.
55. Dolgoplova, E. A.; Moore, T. M.; Fellows, W. B.; Smith, M. D.; **Shustova, N. B.*** "Photophysics of GFP-related Chromophores Imposed by a Scaffold Design", *Dalton Trans. (New Talents: Americas)*, **2016**, *45*, 9884–9891.
54. Dolgoplova, E. A.; Williams, D. E.; Greytak, A. B.; Rice, A. M.; Smith, M. D.; Krause, J. A.; **Shustova, N. B.*** "A Bio-inspired Approach for Chromophore Communication: Ligand-to-Ligand and Host-to-Guest Energy Transfer in Hybrid Crystalline Scaffolds" *Angew. Chem. Int. Ed.* **2015**, *54*, 13639–13643.
53. Williams, D. E.; Dolgoplova, E. A.; Pellechia, P.J.; Palukoshka, A.; Wilson, T. J.; Tan, R.; Maier, J. M.; Tan, R.; Greytak, A. B.; Smith, M. D.; Krause, J. A.; **Shustova, N. B.*** "A Mimic of the Green Fluorescent Protein β -barrel: Photophysics and Dynamics of Confined Chromophores Defined by a Rigid Porous Scaffold" *J. Am. Chem. Soc.* **2015**, *137*, 2223–2226.
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51. Williams, D. E.; **Shustova, N. B.*** "Metal–Organic Frameworks as a Versatile Tool to Study and Model Energy Transfer Processes" *Chem. Eur. J.* **2015**, *21*, 15474–15479.
50. Gardinier, J. R.*; Hewage, J. S.; Justin Hoffman, Lindeman, S. V.; Williams, D. E.; **Shustova, N. B.*** "Supramolecular Assembly of Metal–Organic Tubes Constructed from the Ditopic Heteroscorpionate Ligand (4-NH₂C₆H₄)CHp₂ (pz = Pyrazol-1-yl) and Silver(I)" *Eur. J. Inorg. Chem.* **2016**, 2615–2625.
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1. Aleshina, V. E.; Borschevskii, A. Ya.; Skokan, E. V.; Arhangel'skii, I. V.; Astahov, A. V.; **Shustova, N. B.** "Fluorination of the Cubic and Hexagonal C₆₀ Modifications by Crystalline Manganese Trifluoride" *Phys. Solid State* **2002**, *44*, 629–630.

Book Chapters

1. **Chapter 4:** Perfluoroalkylation of Fullerenes, *Handbook of Carbon Nano Materials* (Editors: D'Souza, F. and Kadish, K. M.), World Scientific, **2011**, pp. 102–135.
2. **Chapter 68:** High-Yield Synthesis of a Single Asymmetric Isomer of C₇₀(CF₃)₁₀ by High Temperature Radical Trifluoromethylation *Efficient Preparation of Fluorine Compounds*, (Editor: Roesky, H. W.), John Wiley and Sons, Inc., **2013**.

Selected Invited Talks

Northwestern University; Imperial College, London; ETH Zurich; MIT-Harvard; University of California, Berkeley; Cornell University; University of Pennsylvania; Texas A&M University, University of Utah, University of South California, Boston College, University of California, Riverside; University of Pittsburg; Vanderbilt University, Colorado State University, Emory University; Marquette University, Florida State University, Georgia Institute of Technology; Dartmouth College; Brandies University; University of North Carolina, Chapel Hill; University of Iowa; Gordon Conferences (2017, 2018, 2019); MOF (2016, 2018); euro-MOF (2019); ICC-2018.

Awarded Research Support

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|----------------------------------------------------------------------------------|------------------|
| DOE, Catalysis | 2021–2023 |
| NSF, DMR | 2021–2024 |
| DOE, Catalysis | 2021–2022 |
| IAS Hans Fisher Fellowship | 2021–2023 |
| DOE EFRC – Center for Hierarchical Waste Form Materials (leading PI) | 2020–2024 |
| NSF EPSCOR GEAR | 2021–2022 |
| Camille Dreyfus Teaching Scholar Award | 2019–2024 |
| NSF CAREER – Division of Materials Research, Solid State and Materials Chemistry | 2016–2022 |
| E-conversion Cluster Grant | 2021–2024 |
| USC ASPIRE-II Research Grant | 2020–2022 |
| McCausland Fellowship | 2019–2022 |
| NASA | 2020–2021 |
| DOE EFRC – Center for Hierarchical Waste Form Materials (leading PI) | 2017–2020 |
| DOE, Catalysis | 2018–2021 |
| USC ASPIRE-II Research Grant | 2018–2019 |
| Cottrell Scholar Research Grant | 2017–2019 |
| Alfred P. Sloan Research Fellowship | 2017–2019 |
| DOE/Savannah River National Laboratory | 2018–2019 |
| SC EPSCoR-SAN/SC | 2018–2019 |
| Savannah River National Laboratory/DOE | 2016–2017 |
| ACS PRF | 2014–2016 |
| USC ASPIRE-III Research Grant | 2014–2015 |
| USC ASPIRE-I Research Grant | 2014–2015 |
| EPSCoR IDeA NSF | 2015 |

Service and Outreach

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| International Organization Advisory Committee | 2022–present |
| Associate Editor of <i>ACS Materials Letters</i> | 2022–present |
| ACS Award Selection and Nomination Committee | 2019–present |
| Research Corporation Science and Advancement, Cottrell Selection Committee | 2022–present |
| Associate Editor of <i>Materials Frontiers</i> | 2016–2019 |
| Chair and Chair of Elect of the ACS Inorganic Subdivision | 2020, 2021 |
| Director of Women-in-Science (Wi-Sci) Educational Program for Carolinas University Senate | 2013–present 2019–2022 |
| Editorial Board Member of <i>ACS Applied Materials & Interfaces</i> , <i>Industrial & Engineering Chemistry Research</i> , <i>Reviews and Advances in Chemistry (ReACh)</i> | 2019–present |
| Organizer ACS Inorganic Chemistry Series Conference and Symposium Organizer: International Pacific Chem (2021), International NanoGe (2022), ACS SERMACs (2016, 2019), and National NC Photochem (2018–2022) | 2020 |
| Active Participant of Undergraduates from the SC-AMP Outreach Research Program for High School Students from the SPRI Summer Research Program | 2015–present |
| University Fulbright Committee for Undergraduate Students | 2019–present |
| External Thesis Committee for the Following Countries: Australia, Germany, and India | 2015–present |
| External Reviewers for the Following Countries (besides USA): Germany, France, Cyprus, and China | 2021–present |
| Undergraduate Research Advisor (more than 50 undergraduates) | 2013–present |
| Department of Chemistry Admission Committee | 2013–2019 |
| Freshman Advisor | 2014–present |
| Reviewer for Science, Nature Publishing Group, ACS, RSC, and Wiley-VCH journals | 2013–present |

Teaching Experience

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|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CHEM 111 | <i>General Chemistry</i> (Fall 2014, Spring 2015, Fall 2016, Spring 2016, Fall 2017, Spring 2018, Fall 2022) Introductory Chemistry Course for ~300 students |
| CHEM 711 | <i>Physical Methods in Inorganic Chemistry</i> (Spring 2019, 2020; Fall 2021) Principles of Group Theory as Applied to Electronic Structure in Inorganic Chemistry and Spectroscopy |
| CHEM 719 | <i>Materials for Renewable Energy Applications</i> (Fall 2013, Fall 2017) Introduction to fundamental concepts of energy conversion: photovoltaics, light emitting diodes, thermoelectric materials, alternative fuels, electrochemical energy storage, and batteries and capacitors. |
| CHEM 713 | <i>Chemistry of Representative Elements</i> (Fall 2019, Fall 2020) |