

Natalia Shustova

Department of Chemistry
University of South Carolina
631 Sumter street
GSRC-533
Columbia, SC, 29208

803-777-1903
shustova@sc.edu
<https://www.shustovalab.org>

Professional Appointments and Education

Peter and Bonnie McCausland Associate Professor	2019–present
Associate Professor of Chemistry, University of South Carolina	2018–present
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, Russia	2004–2005

Awards and Honors

IAS Hans Fischer Fellowship	2020–2023
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 corresponding author)

80. 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.; Mytheye, 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.
79. 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*, 2–19.
78. 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.; Phillipot, 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**, *10.1016/j.trechm.2020.01.009* (**highlighted in the special issue: First Anniversary – Laying Groundwork for the Future**).

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.* **2019**, DOI: 10.1021/acs.chemrev.9b00350.
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*, DOI: 10.1002/anie.201908761.
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*, 17310–17315.
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.
65. Baroni, N.; Turshatov, A.; Adams, M.; Dolgoplova, E. A.; Schliiske, S.; Hernandez-Sosa, G.; Wöll, C.; Shustova, N. B.; Richards, B. S.; Howard, I. A. “Inkjet-Printed Photoluminescent Patterns of Aggregation-Induced-Emission Chromophores on Surface-Anchored Metal–Organic Frameworks” *ACS Appl. Mater. Interfaces*, **2018**, *10*, 25754–25762.
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.; Chandrashekar, M.; 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.
52. Duke, A. S.; Dolgoplova, E. A.; Galhenage, R. P.; Ammal, S. C.; Heyden, A.; Smith, M. D.; Chen, D. A.*; **Shustova, N. B.*** "Active Sites in Copper-based Metal-Organic Frameworks: Understanding Substrate Dynamics, Redox Processes, and Valence-Band Structure" *J. Phys. Chem. C* **2015**, *119*, 27457–27466.
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)CHpz₂ (pz = Pyrazol-1-yl) and Silver(I)" *Eur. J. Inorg. Chem.* **2016**, 2615–2625.
49. Williams, D. E.; Rietman, J. A.; Maier, J. M., Tan, R.; Greytak, A. B.; Smith, M. D.; Krause, J. A.; **Shustova, N. B.*** "Energy Transfer on Demand: Photoswitch-Directed Behavior of Metal-Porphyrin Frameworks" *J. Am. Chem. Soc.* **2014**, *136*, 11886–11889.
48. Boltalina, O. V., Kuvychko, I. V.; Popov A. A.; **Shustova, N. B.**; Strauss, S. H. "Perfluoroalkylfullerenes" *Chem. Rev.* **2015**, *115*, 1051–1105.
47. Whitaker, J. B.; Kuvychko, I. V.; **Shustova, N. B.**; Chen, Y.-S.; Strauss, S. H. Boltalina, O. V. "An elusive fulvene 1,7,11,24-C₆₀(CF₃)₄ and its unusual reactivity" *Chem. Commun.* **2014**, *50*, 1205–1208.
46. **Shustova, N. B.**; Cozzolino, A. F.; Reineke, S.; Baldo, M.; Dincă, M. "Selective Turn-On Ammonia Sensing Enabled by High-Temperature Fluorescence in Metal-Organic Frameworks with Open Metal Sites" *J. Am. Chem. Soc.* **2013**, *135*, 13326–13329.
45. Clikeman, T. T.; Kuvychko, I. V.; **Shustova, N. B.**; Chen, Y.-S.; Popov, A. A.; Boltalina, O. V.; Strauss, S. H. "Regioselective Sequential Additions of Nucleophiles and Electrophiles to Perfluoroalkylfullerenes: Which Cage C Atoms Are the Most Reactive and Why?" *Chem. Eur. J.* **2013**, *19*, 5070–5080.
44. Whitaker, J. B.; **Shustova, N. B.**; Strauss, S. H; Boltalina, O. V. "Structure of 7,9,12,15,18,20,39,24,45,57-C₆₀(CF₃)₁₀(1,2:3,4-O₂) The First Regiospecific Diepoxidation of a Fullerene Derivative" *Acta Chim. Slov.* **2013**, *60*, 577–582 (a special issue in honor of Prof. Žemva).
43. **Shustova, N. B.**; Ong, T.-C.; Cozzolino, A. F.; Michaelis, V. K.; Griffin, R. G.; Dincă, M. "Phenyl Ring Dynamics in a Tetraphenylethylene-Bridged Metal-Organic Framework: Implications for the Mechanism of Aggregation-Induced Emission" *J. Am. Chem. Soc.* **2012**, *134*, 15061–15070.
42. **Shustova, N. B.**; Cozzolino, A. F.; Dincă, M. "High-Energy Conformational Locking and Fluorescence in an Ethynyl-Extended Tetraphenylethylene-Based Metal-Organic Framework" *J. Am. Chem. Soc.* **2012**, *134*, 19596–19599.
41. **Shustova, N. B.**; McCarthy, B. D.; Dincă, M. "Turn-On Fluorescence in Tetraphenylethylene-Based Metal-Organic Frameworks: an Alternative to Aggregation-Induced Emission" *J. Am. Chem. Soc.* **2011**, *133*, 20126–20129.
40. **Shustova, N. B.**; Peryshkov, D. V.; Kuvychko, I. V.; Chen, Y.-S.; Mackey, M. A.; Coumbe, C. E.; Heaps, D. T.; Confait, B. S.; Heine, T.; Phillips, J. P.; Stevenson, S.; Dunsch, L.; Popov, A. A.; Strauss, S. H.; Boltalina, O. V. "Poly(perfluoroalkylation) of Metallic Nitride Fullerenes Reveals Addition-Pattern Guidelines: Synthesis and Characterization of a Family of Sc₃N@C₈₀(CF₃)_n (n = 2–16) and Their Radical Anions" *J. Am. Chem. Soc.* **2011**, *133*, 2672–2690.

39. **Shustova, N. B.**; Kuvychko, I. V.; Popov, A. A.; Delius, M.; Dunsch, L.; Anderson, O. P.; Hirsch, A.; Strauss, S. H.; Boltalina, O. V. "Nitrogen Directs Multiple Radical Additions to 9,9'-Bi-1-aza(C₆₀-I_h)[5,6]fullerene. X-ray Structure of 6,9,12,15,18-C₅₉N(CF₃)₅" *Angew. Chem. Int. Ed.* **2011**, 5537–5540.
38. **Shustova, N. B.**; Kuvychko, I. V.; Peryshkov, D. V.; Whitaker, J. B.; Larson, B. W.; Chen, Y.-S.; Dunsch, L.; Seppelt, K.; Popov, A. A.; Strauss, S. H.; Boltalina, O. V. "Chemical Tailoring of Fullerene Acceptors: Synthesis, Structures and Electrochemical Properties of Perfluoroisopropylfullerenes" *Chem. Commun.* **2011**, 47, 875–877.
37. Kuvychko, I. V.; Whitaker, J. B.; Larson, B. W.; Folsom, T. C.; **Shustova, N. B.**; Avdoshenko, S. M.; Chen, Y.-S.; Wen, H.; Wang, X. B.; Dunsch, L.; Popov, A. A.; Boltalina, O. V.; Strauss, S. H. "Substituent Effects in a Series of 1,7-C₆₀(R-F)₂ Compounds (R-F = CF₃, C₂F₅, *n*-C₃F₇, *i*-C₃F₇, *n*-C₄F₉, *s*-C₄F₉, *n*-C₈F₁₇): Electron Affinities, Reduction Potentials and E(LUMO) Values Are Not Always Correlated" *Chem. Sci.* **2012**, 3, 1399–1407.
36. Kuvychko, I. V.; **Shustova, N. B.**; Avdoshenko, S. M.; Popov, A. A.; Strauss, S. H.; Boltalina, O. V. "In Search of Fullerene-Based Superacids: Synthesis, X-ray Structure, and DFT study of C₆₀(C₂F₅)H" *Chem. Eur. J.*, **2011**, 17, 8799–8802.
35. **Shustova, N. B.**; Mazej, Z.; Chen, Y.-S.; Popov, A. A.; Strauss, S. H.; Boltalina, O. V. "Saturnene Revealed : X-ray Crystal Structure of D_{5d}-C₆₀F₂₀ Formed in Reactions of C₆₀ with A_xMF_y Fluorinating Agents (A = Alkali Metal ; M = 3d Metal)" *Angew. Chem. Int. Ed.* **2010**, 49, 812–815.
34. **Shustova, N. B.**; Kareev, I. E.; Kuvychko, I. V.; Whitaker, J. B.; Lebedkin, S. F.; Popov, A. A.; Dunsch, L.; Chen, Y.-S.; Seppelt, K.; Strauss, S. H.; Boltalina O. V. "High-temperature and photochemical syntheses of C₆₀ and C₇₀ fullerene derivatives with linear perfluoroalkyl chains" *J. Fluorine Chem.* **2010**, 131, 1198–1212.
33. Kuvychko, I. V.; Streletskii, A. V.; **Shustova, N. B.**; Seppelt, K.; Drewello, Popov, A. A.; Strauss, S. H.; Boltalina, O. V. "Soluble Chlorofullerenes C₆₀Cl_{2,4,6,8,10}. Synthesis, Purification, Compositional Analysis, Stability, and Experimental/Theoretical Structure Elucidation, Including the X-ray Structure of C₁-C₆₀Cl₁₀" *J. Am. Chem. Soc.* **2010**, 132, 6443–6462.
32. Popov, A. A.; **Shustova, N. B.**; Svitova, A. L.; Mackey, M. A.; Coumbe, C. E.; Phillips, J. P.; Stevenson, S.; Strauss, S. H.; Boltalina, O. V.; Dunsch, L. "Redox-Tuning Endohedral Fullerene Spin States: From the Dication to the Trianion Radical of Sc₃N@C₈₀(CF₃)₂ in Five Reversible Single-Electron Steps" *Chem.-Eur. J.* **2010**, 16, 4721–4724.
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29. Kareev, I. E.; Kuvychko, I. V.; **Shustova, N. B.**, Lebedkin, S. F.; Bubnov, V. P.; Anderson, O. P.; Popov, A. A.; Boltalina, O. V.; Strauss, S. H. "C₁-(C₈₄-C₂(11))(CF₃)₁₂ : Trifluoromethylation Yields Structural Proof of a Minor C₈₄ Cage and Reveals a Principle of Higher Fullerene Reactivity" *Angew. Chem. Int. Ed.* **2008**, 120, 6204–6207.
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26. **Shustova, N. B.**; Kuvychko, I. V.; Boltalina, O. V.; Strauss, S. H. "1,7,16,30,36,47-Hexakis(perfluoroisopropyl)-1,7,16,30,36,47-hexahydro(C₆₀-I_h)[5,6]fullerene" *Acta Cryst.* **2007**, E63, o4575.
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23. **Shustova, N. B.**; Anderson, O. P.; Boltalina, O. V.; Strauss, S. H. "1,3,7,10,14,17,21,28,31,42,52,55-Dodecakis(trifluoromethyl)-1,3,7,10,14,17,21,28,31,42,52,55-dodecahydro(C₆₀-I_h)[5,6]fullerene" *Acta Cryst.* **2007**, E64, o159.
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16. **Shustova, N. B.**; Peryshkov, D. V.; Kareev, I. E.; Boltalina, O. V.; Strauss, S. H. "1,6,11,18,24,27,33,51,54,60-Octakis(trifluoromethyl)-1,6,11,18,24,27,33,-51,54,60-octahydro($C_{60}-I_h$)[5,6]fullerene deuteriochloroform solvate" *Acta Cryst.* **2007**, *E63*, o3398.
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5. Troyanov, S. I.; **Shustova, N. B.**; Popov, A. A.; Sidorov, L.N. "Synthesis and Structure of C_{60} Fullerene Chlorides" *Russ. Chem. Bull.* **2005**, *54*, 1656–1666.
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2. Alyoshina V. E., Borshchevsky A. Ya., Dorozhkin E. I., Goryunkov A. A., Astakhov A. V., **Shustova N. B.**, Ovchinnikova N. S. "Negative Ions of Trifluoromethyl Fullerene Derivatives: First Thermodynamic data" *Fullerenes, Nanotubes, and Carbon Nanostruct.* **2004**, *12*, 201–207.
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 C_{60} 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; University of Pennsylvania; Gordon Conferences (2017, 2018, 2019), MOF (2016, 2018), euro-MOF (2019), University of Utah, University of South California, Boston College, University of California, Riverside; University of Pittsburg; ICC-2018; Vanderbilt University, Emory University; Georgia Institute of Technology; Dartmouth College; Brandies University, University of North Carolina, Chapel Hill

Awarded Research Support

CCI NSF (Director)	<i>pending</i>
Camille Dreyfus Teaching Scholar Award	2019–2024
NSF CAREER – Division of Materials Research, Solid State and Materials Chemistry	2016–2021
DOE EFRC – Center for Hierarchical Waste Form Materials (leading PI)	2017–2020
DOE, Catalysis	2018–2020
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 Award	2014–2015
USC ASPIRE-I Award	2014–2015
EPSCoR IDeA NSF	2015

Service and Outreach

Associate Editor – <i>Materials Chemistry Frontiers</i>	2016–2019
ACS National Awards Selection Committee	since 2019
Symposium Organizer – American Chemical Society, Southeastern Regional Meeting	2019
Symposium Organizer – American Chemical Society, Southeastern Regional Meeting	2016
University Senate	since 2019
University Fulbright Committee for Undergraduate Students	since 2019
Department of Chemistry Admission Committee	since 2013
Department of Chemistry Instrumentation Facilities Steering Committee	since 2013
Director of Women-in-Science (Wi-Sci) Educational Program	since 2013
Freshman Advisor	since 2014
Undergraduate Research Advisor (more than 27 undergraduates)	since 2013
Host for Undergraduates from the SC-AMP Outreach Research Program	2018
Host for High School Students from the SPRI Summer Research Program	since 2015
Reviewer for Science, Nature Publishing Group, ACS, RSC, and Wiley-VCH journals	since 2013

Teaching Experience

CHEM 111	<i>General Chemistry</i> (Fall 2014 , Spring 2015 , Fall 2016 , Spring 2016 , Fall 2017 , Spring 2018) Introductory Chemistry Course for ~300 students
CHEM 711	<i>Physical Methods in Inorganic Chemistry</i> (Spring 2019 , 2020) 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)