

Curriculum Vitae
Morgan Stefik

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HIGHLIGHTS

≥90 Publications, ≥50 Invited Talks, H-index=35, >5,300 Citations, >\$4.7M Funding
Support from NSF-CAREER, NSF-MRI, DOE, ACS-PRF, SC-EPSCoR, Prisma Health
Hanse-Wissenschaftskolleg Fellow, ACS-PMSE Young Investigator, J. Mater. Chem. A Emerging
Investigator, Soft Matter Emerging Investigator, J. Mater. Res. Early Career Scholar,
Mungo UG Teaching Award, Garnet Apple Award, Council of the Int. Mesostruc. Mater. Assoc.
USC Breakthrough Star, Organizer of 2019 NSF Solid State Materials Chemistry Workshop

EDUCATION

Ph.D.	Materials Science and Engineering	Cornell University	2010
M.S.	Materials Science and Engineering	Cornell University	2009
B.E.	Materials Engineering	California Polytechnic State University	2005

summa cum laude, valedictorian

PROFESSIONAL APPOINTMENTS

2024-present	Full Professor , University of South Carolina, Chem. and Biochem.
2022-2023	Visiting Scientist , Fraunhofer IFAM, Bremen, Germany
2022-2023	Fellow , Hanse-Wissenschaftskolleg, Delmenhorst, Germany
2019-2023	Associate Professor , University of South Carolina, Chem. and Biochem.
2013-2019	Assistant Professor , University of South Carolina, Chem. and Biochem.
2011-2013	Postdoctoral Fellow , École Polytechnique Fédérale de Lausanne, Chem.
2004	Research Fellow , Center on Poly. Interfaces and Macro. Assem., Stanford University

PUBLICATIONS (USC, DOI Links at <http://www.stefikgroup.com/publications/>)

- 108) Zhang, M.; Li, X.; Tang, C.; **Stefik, M.*** Growth of Cylindrical Micelles and their Use to Prepare Porous Materials with Tailored Dimensions and Alignment. *Journal of Material Chemistry A* **2025**, ASAP. 10.1039/D5TA04040J
- 107) Kumar, M.; Muhit, Md. A. A.; Sturgill, CJ; Karimitari, N.; Barber, J. T.; Tisdale, H.; **Stefik, M.***; zur Loye, H.-C.*; Sutton, C*. Combined Experimental and Computational Analysis of Lithium Diffusion in Isostructural Pair VNb₉O₂₅ and VTa₉O₂₅. *ACS Applied Energy letters* **2025**. ASAP. 10.1021/acsaem.5c01738
- 106) Bare, Z. J. L.; Sturgill, CJ; Kumar, M. ; Milisavljevic, I; zur Loye, H.-C.; Mixture, S.; **Stefik, M.***; Sutton, C*. Computational screening and experimental validation of promising Wadsley-Roth Niobates. Under Review 2025. Preprint <https://arxiv.org/abs/2505.10549>
- 105) Li, X.; Hu, Z.; Zhang, M.; Stefik, M.; Scott, C.; Tang, C. Sustainable and Orthogonally Closed-loop Recyclable Acetal-based Long-Chain Polyesters. *Journal of the American Chemical Society* **2025**. 47(33), 30259-30267.

- 104) Collins, C. S.; Zhang, M.; Sturgill, C.; Ruff, C. X.; Melton, B.; **Stefik, M.*** Photo-crosslinked Persistent Micelle Templates with near Universal Solvent Compatibility. *Materials Advances*, **2025**, 6, 4881-4892.
- 103) Muhit, Md. A. A.; Maksimova, A.; Wechsler, S. C.; Kasem, H. B.; Panigrahi, G.; Morrison, G. ; **Stefik, M.;** zur Loye, H.-C. Crystal Growth, Thermal, Optical and Magnetic Properties of Mo₂Ta₂O₁₁. *Solid State Sciences* **2025**, 165, 107951.
- 102) Rahmati, Z.; Wu, N.; Collins, C.; Lu, J.; **Stefik, M.;** Huang, K. Synthesis and Characterization of Tethered Polymer for Hybrid Electrolytes in Solid Lithium Metal Batteries. *ACS Applied Energy Materials* **2025**, 8(9), 5800-5810.
- 101) Wechsler, S. C.; Gregg, A.; Collins, C. C.; Balijepalli, S. K. **Stefik, M.*** Nanostructure Retention to 1100°C in Soft-Templated Niobium Tungstates using Dual-carbon Strategy. *New Journal of Chemistry* **2025**, 49, 5716-5728.
- 100) Li, X.; Suhail, A.; Mahadas, N.; Zhang, M.; Hu, Z.; **Stefik, M.;** Kuksenok, O.; Tang, C. *Macromolecules* **2025**, 58(4), 2094-2105.
- 99) Sturgill, C.J.; Sutton, C.; Schwenzel, J.; **Stefik, M.*** Capacity-Weighted Figures-of-Merit for Battery Transport Metrics. *Journal of Materials Chemistry A* **2025**, 13, 6314-6324. (Invited Article, Special Edition)
- 98) Bension, Y.; Wijesekera, A.; Collins, C. S.; Zhang, S.; Zheng, J.; Zhao, H.; Cheng, S.; **Stefik, M. Ge, T.*; Tang, C.*** Transformation of Semicrystalline Polymer Mechanics by Cyclic Polymers. *Polymer Chemistry* **2025**, 16, 526.
- 97) Sturgill, C.J.; Milisavljevic, I.; Wechsler, S.; Muhit, M. A. Al; zur Loye, H.-C.; Misture, S.*; **Stefik, M.*** Tailored TiNb₂O₇ Particle Size, Defects, and Crystallinity Accelerate Lithiation. *Chemistry of Materials* **2025**, 37, 624-635.
- 96) Muhit, Md. A. A.; Wechsler, S.; Bare, Z.; Sturgill, C.; Keerthisinghe, N.; Grasser, M.; Morrison, G.; Sutton, C.*; **Stefik, M.*;** zur Loye, H.-C.* Comparison of Lithium Diffusion in Isostructural Ta₁₂MoO₃₃ and Nb₁₂MoO₃₃: Experimental and Computational Insights from Single Crystals. *Chemistry of Materials* **2024**, 36(21), 10626-10639.
- 95) Zhang, M.; Li, X.; Tang, C.; **Stefik, M.*** Two Nanoparticle Populations Simultaneously Directed Using Triptych Triblock Terpolymers. *Chemistry of Materials* **2024**, 36, 8792-8802. (Invited Article In Memory of Prof. Francis DiSalvo, Journal Cover)
- 94) Larison, T.; Williams, E. R.; Wright, M.; Tengco, J.; Boebinger, M. G.; Tang, C.; **Stefik, M.*** One-Pot Synthesis of Sequence-Controlled Mesoporous Heterostructures. *ACS Nano* **2024**, 18(31), 20133-20141. (Journal Cover)
- 93) Williams, E. R.; Ruff, C.; **Stefik, M.*** Unimer Suppression Enables Supersaturated Homopolymer Swollen Micelles with Long-Term Stability after Glassy Entrapment. *Soft Matter* **2024**, 20, 2288-2300. (Invited Article in celebration of Professor Ulli Steiner's 60th birthday)
- 92) Li, X.; Mahadas, N. A.; Zhang, M.; DePodesta, J.; **Stefik, M.;** Tang, C.* Sustainable High-Density Polyethylene via Chemical Recycling: Bridging from Modification to Polymerization Methods. *Polymer* **2024**, 295, 126698.
- 91) Wechsler, S. C.; Gregg, A.; **Stefik, M.*** Highly Reversible Lithiation of Additive Free T-Nb₂O₅ for a Quarter of a Million Cycles. *Advanced Functional Materials* **2024**, 34, 2312839. (Journal Cover)
- 90) Larison, T.; Williams, E.; Collins, C.; Pingali, S. V.; **Stefik, M.*** Bimodal Rates for Cavitation Induced Chain Exchange Between Micelles. *Macromolecules* **2023**, 56, 19, 7818-7826.
- 89) Larison, T.; Pingali, S. V., **Stefik, M.*** New Approach for SANS Measurement of Micelle Chain Mixing During Size and Morphology Transitions. *Soft Matter* **2023**, 19, 3487-3495.
- 88) Jara Fornerod, M. J.; Alvarez-Fernandez, A.; Williams, E. R.; Skoda, M. W. A.; Prieto-Simon, B.; Voelcker, N. H.; **Stefik, M.;** Coppens, M. O.; Guldin, S. Enhanced Structural Control of Soft-Templated Mesoporous Inorganic Thin Films by Inert Processing Conditions. *ACS Applied Materials & Interfaces* **2022**, 14(50), 56143-56155.
- 87) Islam, M. F.; Adame-Ramirez, E.; Williams, E. R.; Kittikhunnatham, P.; Wijesekera, A.; Zhang, S.; Ge, T.; **Stefik, M.;** Smith, M. D.; Pellechia, P. J.; Greytak, A. B.; Shimizu, L. S. Inclusion Polymerization of Pyrrole and Ethylenedioxythiophene in Assembled TriphenylamineBisUrea Macrocycles. *Macromolecules* **2022**, 55(24), 11013-11022.

- 86) Zhang, M.; Larison, T.; Tu, S.; Kuksenok, O.; **Stefik, M.*** Effect of Fluorophobic Character upon Switching Nanoparticles in Polymer Films from Aggregated to Dispersed States using Immersion Annealing. *ACS Applied Polymer Materials* **2022**, 4(10), 7042–7053.
- 85) Williams, E. R.; van den Bergh, W.; **Stefik, M.*** High- χ , low-N Micelles from Partially Perfluorinated Block Polymers. *Soft Matter* **2022**, 18, 7917 - 7930.
(Journal Cover, Emerging Investigator)
- 84) Jayaweera, N.; Dunlap, J.; Ahmed, F.; Larison, T.; Buzoglu Kurnaz, L; **Stefik, M.**; Pellechia, P.; Fountain, A.; Greytak, A. Coordination of Quantum Dots in Polar Solvent by Small-Molecule Imidazole Ligands. *Inorganic Chemistry* **2022**, 61(28), 10942-10949.
- 83) van den Bergh, W.; **Stefik, M.*** Understanding Rapid Intercalation Materials One Parameter at a Time. *Advanced Functional Materials* **2022**, 32, 2204126, 1-19. (Invited)
- 82) Passerotti, M. S.; Reichert, M. J. M.; Robertory, B.; Marsh, Z.; **Stefik, M.**; Quattro, J. M. *Marine & Freshwater Research* **2022**, 73, 846-865.
- 81) van den Bergh, W.; Larison, T.; Jesus Jara Fornerod, M.; Guldin, S.; **Stefik, M.*** Faster Intercalation Pseudocapacitance Enabled by Adjustable Amorphous Titania where Tunable Isomorphic Architectures Reveal Accelerated Lithium Diffusivity. *Batteries & Supercaps* **2022**, 5(7), e202200122, 1-13. (Journal Cover, Editors' Choice Spotlights)
- 80) van den Bergh, W.; Wechsler, S.; Lokupitiya, H. N.; Jarocho, L.; Heald, S. **Stefik, M.*** Amorphization of Pseudocapacitive T-Nb₂O₅ Accelerates Lithium Diffusivity as Revealed Using Tunable Isomorphic Architecture. *Batteries & Supercaps* **2022**, 5(6), e202200056, 1-17. (Journal Cover)
- 79) **Stefik, M.*** Single-Variable Porous Nanomaterial Series from Polymer Structure Directing Agents. *Journal of Materials Research* **2022**, 37, 25-42. (Invited, Early Career Scholars)
- 78) van den Bergh, W.; Williams, E.; Vest, N.; Chiang, P.-H.; **Stefik, M.*** Mesoporous TiO₂ Microparticles with Tailored Surface, Pore, Wall, and Particle Dimensions using Persistent Micelle Templates. *Langmuir* **2021**, 37(44), 12874–12886. (Journal Cover)
- 77) Larison, T.; **Stefik, M.*** Persistent Micelle Corona Chemistry Enables Constant Micelle Core Size with Independent Control of Functionality and Polyelectrolyte Response. *Langmuir* **2021**, 37(32), 9817-9825.
- 76) Zhu, K.; Wu, T.; Van Den Bergh, W.; **Stefik, M.**; Huang, K. Reversible Molecular and Ionic Storage Mechanisms in High-Performance Zn_{0.1}V₂O₅·nH₂O Xerogel Cathode for Aqueous Zn-Ion Batteries. *ACS Nano* **2021**, 15, 6, 10678–10688.
- 75) Zheng, Y.; Irizarry Colón, L. N.; Ul Hassan, N.; Williams, E. R.; Stefik, M.; LaManna, J. M.; Hussey, D. S.; Mustain, W. E. Effect of Membrane Properties on the Carbonation of Anion Exchange Membrane Fuel Cells. *Membranes* **2021**, 11(2), 102.
- 74) Williams, E. R.; McMahon, P. L.; Reynolds, J. E. III; Snider, J. L.; Stavila, V.; Allendorf, M. D.; **Stefik, M.*** Tailored Porous Carbons Enabled by Persistent Micelles with Glassy Cores. *Materials Advances* **2021**, 2, 5381-5395. (Journal Cover, 2021 Popular Advances collection)
- 73) van den Bergh, W.; Lokupitiya, H.; Vest, N.; Reid, B.; Guldin, S.; **Stefik, M.*** Tunable Isomorphic Architectures of T-Nb₂O₅ Quantify Nanostructure Dependence of Intercalation Pseudocapacitance upon Diffusive Processes. *Advanced Functional Materials* **2021**, 31, 2007826, 1-11. (Frontispiece)
- 72) Guiton, B. S.; **Stefik, M.**; Augustyn, V.; Banerjee, S.; Bardeen, C. J.; Bartlett, B. M.; Li, J.; López-Mejías, V.; MacGillivray, L. R.; Morris, A.; Rodriguez, E. E.; Samia, A. C. S.; Sun, H.; Sutter, P.; Talham, D. R. Frontiers in Hybrid and Interfacial Materials Chemistry Research. *MRS Bulletin* **2020**, 45(11), 951-964. (Invited)
- 71) Madathil, K.; Lantz, K. A.; **Stefik, M.***; Stein, G. E.* Effects of Trace Water on Self-Assembly of Sulfonated Block Copolymers During Solution Processing. *ACS Applied Polymer Materials* **2020**, 2(11), 4893-4901.
- 70) Brandt, A.; Shakya, D.; Metavarayuth, K.; Dolgoplova, E.; Hensley, L.; Duke, A.; Farzandh, S.; **Stefik, M.**; Shustova, N.; Chen, D. Growth of Crystalline Bimetallic Metal-Organic Framework Films via Transmetalation. *Langmuir* **2020**, 36(33), 9900-9908.

- 69) Lu, Y.; Zhu, T.; van den Bergh, W.; **Stefik, M.**; Huang, K. A High Performing Zn-ion Battery Cathode Enabled by in-situ Transformation of V₂O₅ Atomic Layers. *Angewandte Chemie International Edition* **2020**, 59(39), 17004-17011.
- 68) Zhu, K.; Wu, T.; Sun, S.; van den Bergh, W.; **Stefik, M.**; Huang, K. Synergistic H⁺/Zn²⁺ Dual Ion Insertion Mechanism in High-Capacity and Ultra-Stable Hydrated VO₂ Cathode for Aqueous Zn-Ion Batteries. *Energy Storage Materials* **2020**, 29, 60-70.
- 67) Leith, G. A.; Rice, A. M.; Yarbrough, B. J.; Berseneva, A. A.; Ly, R. T.; Buck, C. N.; Brandy, A. J.; Chen, D. A.; Lamm, B. W.; **Stefik, M.**; Stephenson, K. S.; Smith, M. D.; Vannucci, A. K.; Pellechia, P. J.; Garashcuk, S.; Shustova, N. B.; A Dual Threat: Redox-Activity and Electronic Structures of Well-Defined Donor-Acceptor Fulleretic Covalent-Organic Materials. *Angewandte Chemie* **2020**, 132(15), 6056-6062.
- 66) Sutton, P.; Bennington, P.; Patel, S. N.; **Stefik, M.**; Wiesner, U. B.; Nealey, P. F.; Steiner, U.; Gunkel, I. Surface Reconstruction Limited Conductivity in Block-Copolymer Li Battery Electrolytes. *Advanced Functional Materials* **2019**, 29(48), 1905977.
- 65) Marsh, Z. M.; Blom, D. A.; **Stefik, M.*** Tunable Fluorophobic Effect Determines Nanoparticle Dispersion in Homopolymers and Block Polymers. *Advanced Materials Interfaces* **2019**, 1901691 1-8. (Invited Article, Journal Cover)
- 64) Abbas, Z. M.; Khani, M. M.; Tawfilas, M.; Marsh, Z. M.; **Stefik, M.**; Benicewicz, B. Surface-Initiated RAFT Polymerization of 2,3-Dimethyl-1,3-butadiene on Silica Nanoparticles for Matrix-free Methyl Rubber Nanocomposites. *Journal of Polymer Science* **2020**, 58, 417-427.
- 63) Armas, J. A.; Reynolds, K. J.; Marsh, Z. M.; Fernández-Blázquez, J. P.; Ayala, D.; Cronin, A. D.; Del Aguila, J.; Fideldy, R.; Abdou, J. P.; Bilger, D. W.; Vilatela, J. J.; **Stefik, M.**; Scott, G. E.; Zhang, S. Supramolecular Assembly of Oriented Spherulitic Crystals of Conjugated Polymers Surrounding Carbon Nanotube Fibers. *Macromolecular Rapid Communications* **2019**, 1900098.
- 62) Sarkar, A.; Thyagarajan, A.; Cole, A.; **Stefik, M.*** Widely Tunable Persistent Micelle Templates via Homopolymer Swelling. *Soft Matter* **2019**, 15, 5193-5203. (Journal Cover)
- 61) Abbas, Z. M.; Tawfilas, M.; Khani, M. M.; Golian, K.; Marsh, Z. M.; Jhalaria, M.; Simonutti, R.; **Stefik, M.**; Kumar, S. K.; Benicewicz, B. C. Reinforcement of polychloroprene by grafted silica nanoparticles. *Polymer* **2019**, 171, 96-105.
- 60) Lantz, K. A.; Clamp, N. B.; v. d. Bergh, W.; Sarkar, A.; **Stefik, M.*** Full Gamut Wall Tunability from Persistent Micelle Templates via Ex Situ Hydrolysis. *Small* **2019**, 15(18), 1900393. (Journal Cover)
- 59) Lamm, B.; Zhou, L. Rao, P.; **Stefik, M.*** ALD of Space-Efficient SnO₂ Underlayers for BiVO₄ Host-Guest Architectures for Photoassisted Water Splitting. *ChemSusChem* **2019**, 12(9), 1916-1924. (Invited Article, Journal Cover)
- 58) Marsh, Z.; Lantz, K.; **Stefik, M.*** QCM Detection of Molecule-Nanoparticle Interactions for Ligand Shells of Varying Morphology. *Nanoscale* **2018**, 10, 19107-19116.
- 57) Dolan, J.; Korzeb, K.; Dehmel, R.; Wilts, B. D.; Godel, K. C.; **Stefik, M.**; Wiesner, U.; Wilkinson, T. D.; Baumberg, J. J.; Steiner, U.; Gunkel, I. In situ GISAXS of Robust Gyroid Morphology in Triblock Terpolymer Films During Solvent Vapor Annealing. *Small* **2018**, 1802401, 1-13.
- 56) Armas, J. A.; Reynolds, K. J.; Marsh, Z. M.; **Stefik, M.**; Scott, G. E.; Zhang, S. Ring-Banded Spherulitic Crystals of Poly(3-butylthiophene) via Controlled Solvent Evaporation. *Macromolecular Chemistry and Physics* **2018**, 1800204, 1-5.
- 55) Lantz, K.; Sarkar, A.; Littrell, K.; Li, T.; Hong, K.; **Stefik, M.*** Cavitation Enables Switchable and Rapid Block Polymer Exchange under High- χ N Conditions. *Macromolecules* **2018**, 51(17), 6967-6975.
- 54) Kasprzak, C. R.; Scherzinger, E. T.; Sarkar, A.; Parkinson, J. W.; Miao, M.; Porcincula, D.; Madriz, A.; Pennewell, Z. M.; Chau, S. S.; Thai, R. B.; Fernando, R.; **Stefik, M.**; Zhang, S. Ordered Nanostructures of Carbon Nanotube-Polymer Composites from Lyotropic Liquid Crystal Templating. *Macromolecular Chemistry and Physics* **2018**, 1800197, 1-8. (Journal Cover, Most Accessed)
- 53) Haware, R. V.; Vinjamuri, B. P.; Sarkar, A.; **Stefik, M.**; Stagner, W. C. Deciphering Magnesium Stearate Differential Scanning Calorimetry Thermotropic Behavior. *International Journal of Pharmaceutics* **2018**, 548(1), 314-324.

- 52) Sarkar, A.; Evans, L.; **Stefik, M.*** Expanded Kinetic Control for Persistent Micelle Templates with Solvent Selection. *Langmuir* **2018**, 34(20), 5738-5749.
- 51) Xu, J.; Voznyy, O.; Liu, M.; Kirmani, A.; Walters, G.; Munir, R.; Proppe, A.; Wei, M.; Sun, B.; Liu, M.; Pelayo Garcia de Arquer, F.; Quintero-Bermudez, R.; Li, J.; Fan, J.; Quan, L.; Todorovic, P.; Tan, H.; Sarkar, A.; Hoogland, S.; **Stefik, M.**; Amassian, A.; Sargent, E. H. 2D Matrix Engineering for Homogeneous Quantum Dot Coupling in Photovoltaic Solids. *Nature Nanotech* **2018**, 13, 456-642.
- 50) Fellows, B. D.; Sandler, S.; Livingston, J.; Fuller, K.; Nwandu, L.; Bigner, J.; Timmins, S.; Lantz, K. A.; **Stefik, M.**; Suanders, M.; Mefford, O. T. Extended LaMer Synthesis of Cobalt Doped Ferrites for Use in MagMED. *IEEE Magnetics Letters* **2018**, 9, 1-5.
- 49) Zheng, Y.; Abbas, Z.; Sarkar, A.; Marsh, Z.; **Stefik, M.**; Benicewicz, B. Surface-initiated reversible addition-fragmentation chain transfer polymerization of chloroprene and mechanical properties of matrix-free polychloroprene nanocomposites. *Polymer* **2018**, 135, 193-199.
- 48) Lamm, B.; Trześniewski, B.; Döschner, H.; Smith, W.*; **Stefik, M.*** Emerging Post-synthetic Improvements of BiVO₄ Photoanodes for Solar Water Splitting. *ACS Energy Letters* **2018**, 3, 112-124. (Invited, Highlighted as one of the most read ACS Energy Letters articles Jan-2018)
- 47) Bilger, D.; Figueroa, J.; Redeker, N.; Sarkar, A.; Stefik, M.; Zhang, S. Hydrogen Bonding Directed Ordered Assembly of Carboxylated Poly(3-Alkylthiophene)s. *ACS Omega* **2017**, 2(11), 8526-8535.
- 46) Huang, Y.; Zheng, Y.; Sarkar, A.; Xu, Y.; **Stefik, M.**; Benicewicz, B. C. Matrix-Free Polymer Nanocomposite Thermoplastic Elastomers. *Macromolecules* **2017**, 50(12), 4742-4753.
- 45) Sarkar, A.; **Stefik, M.*** How to Make Persistent Micelle Templates in 24 Hours and Know It using X-ray Scattering. *Journal of Materials Chemistry A* **2017**, 5, 11840-11853. (Invited article, Emerging Investigator)
- 44) Rahman, M. A.; Lokupitiya, H. N.; Ganewatta, M.; Yuan, L.; **Stefik, M.**; Tang, C. Designing Block Copolymer Architectures toward Tough Bioplastics from Natural Rosin. *Macromolecules* **2017**, 50 (5), 2069-2077.
- 43) Sarkar, A.; **Stefik, M.*** Robust Porous Polymers Enabled by Fast Trifluoroacetic Acid Etch with Improved Selectivity for Polylactide. *Material Chemistry Frontiers* **2017**, 1, 1526 – 1533.
- 42) Lamm, B.; Sarkar, A. **Stefik, M.*** Surface Functionalized Atomic Layer Deposition of Bismuth Vanadate for Single-Phase Scheelite. *Journal of Materials Chemistry A* **2017**, 5, 6060 – 6069. (Journal Cover)
- 41) Bilger, D.; Sarkar, A.; Danesh, C.; Gopinadhan, M.; Braggin, G.; Figueroa, J.; Pham, T.; Chun, D.; Rao, Y.; Osuji, C.; **Stefik, M.**; Zhang, S. Multi-Scale Assembly of Polythiophene-Surfactant Supramolecular Complexes for Charge Transport Anisotropy. *Macromolecules* **2017**, 50(3), 1047-1055.
- 40) Wahab, Z.; Marsh, Z. M.; Tessema, A.; Kidane, A.; **Stefik, M.**; Anneaux, B. L.; Ploehn, H. J. Effect of Nanodiamond Surface Functionalization on the Properties of Nanodiamond/PEEK Composites. *IEEE TCPMT* **2017**, 7(2), 165-177.
- 39) Lokupitiya, H. N.; **Stefik, M.*** Cavitation-Enabled Rapid and Tunable Evolution of High- χ N Micelles as Templates for Ordered Mesoporous Oxides. *Nanoscale* **2017**, 9, 1393-1397. (Journal Cover)
- 38) Peters, K.; Lokupitiya, H. N.; Sarauli, D.; Labs, M.; Pribil, M.; Rathousky, J.; Kuhn, A.; Leister, D.*; **Stefik, M.***; Fattakhova-Rohfling, D.* Nanostructured Antimony-Doped Tin Oxide Layers with Tunable Pore Architectures as Versatile Transparent Current Collectors for Biophotovoltaics. *Advanced Functional Materials* **2016**, 26, 6682-6692. (Journal Cover)
- 37) **Stefik, M.*** Atomic Layer Deposition of Bismuth Vanadates for Solar Energy Materials. *ChemSusChem* **2016**, 9, 1727-1735.
- 36) Lokupitiya, H. N.; Jones, A.; Reid, B.; Guldin, S.; **Stefik, M.*** Ordered Mesoporous to Macroporous Oxides with Tunable Isomorphic Architectures – Solution Criteria for Persistent Micelle Templates. *Chemistry of Materials* **2016**, 28(6), 1653-1667.
- 35) Wang, Z.; Yuan, L.; Trenor, N. M.; Vlamincik, L.; Billiet, S.; Sarkar, A.; Du Prez, F. E.; **Stefik, M.**; Tang, C. Sustainable Thermoplastic Elastomers Derived from Plant Oil and Their “Click-Coupling” via TAD Chemistry. *Green Chemistry* **2015**, 7, 3806-3818.

- 34) Azevedo, J.; Tilley, S. D.; Schreier, M.; **Stefik, M.**; Sousa, C.; Araújo, J. P.; Mendes, A.; Grätzel, M.; Mayer, M. T., Tin oxide as stable protective layer for composite cuprous oxide water-splitting photocathodes. *Nano Energy* **2016**, *24*, 10-16.
- 33) **Stefik, M.***; Song, J.; Sai, H.; Guldin, S.; Boldrighini, P.; Orilall, M. C.; Steiner, U.; Gruner, S. M.; Wiesner, U.* Ordered Mesoporous Titania from Highly Amphiphilic Block Copolymers: Tuned Solution Conditions Enable Highly Ordered Morphologies and Ultra-Large Mesopores. *Journal of Materials Chemistry A* **2015**, *3*, 11478-11492.
- 32) **Stefik, M.***; Guldin, S.*; Vignolini, S.; Wiesner, U.; Steiner, U. Block Copolymer Self-Assembly for Nanophotonics. *Chemical Society Reviews* **2015**, *44*, 5076-5091. (Invited, Journal Cover)
- 31) Guldin, S.; **Stefik, M.**; Sai, H.; Wiesner, U.; Steiner, U. Controlling the Coassembly of Highly Amphiphilic Block Copolymers with a Hydrolytic Sol by Solvent Exchange. *RSC Advances* **2015**, *5*, 22499-22502.
- 30) Lee, Y.H.; **Stefik, M.**; Heiniger, L.-P.; Gao, P.; Seok, S. I.; Grätzel, M.; Nazeeruddin, M. K. Power from the Sun: Perovskite Solar Cells. *IEEE* **2014**, 6925068, 0943-0948.
- 29) Salvatore, S.; Vignolini, S.; Philipott, J.; **Stefik, M.**; Wiesner, U.; Baumberg, J.; Steiner, U. A Higher Transmission Wave-Guide Wire Network Made by Self-Assembly. *Nanoscale* **2014**, *25*, 2713-2716.
- 28) Farah, P.; Demetriadou, A.; Salvatore, S.; Vignolini, S.; **Stefik, M.**; Wiesner, U.; Hess, O.; Steiner, U.; Valev, V. K.; Baumberg, J. J. Ultrafast Nonlinear Response of Gold Gyroid Three-Dimensional Metamaterials. *Physical Review Applied* **2014**, *2*, 044002.
- 27) Azevedo, J.; Steier, L.; Dias, P.; **Stefik, M.**; Sousa, C. T.; Araujo, J. P.; Mendes, A.; Grätzel, M.; Tilley, D. On the Stability Enhancement of Cuprous Oxide Water Splitting Photocathodes by Low Temperature Steam Annealing. *Energy & Environmental Science* **2014**, *7*, 4044-4052.
- 26) Hu, Y.; Yella, A.; Guldin, S.; Schreier, M.; Stellacci, F.; Grätzel, M.; **Stefik, M.***, High-Surface-Area Porous Platinum Electrodes for Enhanced Charge Transfer., *Advanced Energy Materials* **2014**, *4*(14), 1400510.
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 - 10) Guldin, S.; Kolle, M.; **Stefik, M.**; Langford, R.; Eder, D.; Wiesner, U.; Steiner, U., Tunable Mesoporous Bragg Reflectors Based on Block-Copolymer Self-Assembly. *Advanced Materials* **2011**, 23 (32), 3664-3668.
 - 9) Guldin, S.; Huettner, S.; Tiwana, P.; Orilall, M. C.; Uelguet, B.; **Stefik, M.**; Docampo, P.; Kolle, M.; Divitini, G.; Ducati, C.; Redfern, S. A. T.; Snaith, H. J.; Wiesner, U.; Eder, D.; Steiner, U., Improved Conductivity in Dye-Sensitized Solar Cells through Block Copolymer Confined TiO₂ Crystallisation. *Energy & Environmental Science* **2011**, 4 (1), 225-233.
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 - 3) **Stefik, M.**; Lee, J.; Wiesner, U., Nanostructured Carbon-Crystalline Titania Composites from Microphase Separation of Poly(ethylene oxide-*b*-acrylonitrile) and Titania Sols. *Chemical Communications* **2009**, (18), 2532-2534.
 - 2) **Stefik, M.**; DiSalvo, F. J.; Wiesner, U., Block Copolymer Derived Nanocomposites towards Designer Electrode Materials. *Prepr. Symp. Am. Chem. Soc., Div. Fuel Chem.* **2009**, 54 (2), 673.
 - 1) Wu, K. S.; **Stefik, M.**; Ananthapadmanabhan, K. P.; Dauskardt, R. H., Graded Delamination Behavior of Human Stratum Corneum. *Biomaterials* **2006**, 27 (34), 5861-5870.

PATENTS

- 6) Structure Directing Agents. 2023 Pending.
- 5) Persistent Micelle Corona Chemistry. 2021 Pending.
- 4) Detection of Molecule-Nanoparticle Interactions with Ligand Shells. US Patent 11,555,815.
- 3) Cavitation Enabled Tuning of Persistent Micelles. US Patent 11,083,692
- 2) Tunable nanomaterials by templating from kinetically trapped polymer micelles. US Patent 10,954,393
- 1) Etchant for Use in Rapid Formation of Robust Porous Polymers. US Patent 10,723,856.

AWARDS and HONORS

- 2024 **George H. Bunch Sr. Professor of Science**
- 2023 **Michael J. Mungo Undergraduate Teaching Award**
- 2022 **Inaugural Lecture**, Helmholtz-Zentrum Berlin, Chemical Energy
- 2022 **Emerging Investigator**, Royal Society of Chemistry, Soft Matter
- 2022 **Garnet Apple Award for Teaching Innovation**, University of South Carolina
- 2022 **Hanse-Wissenschaftskolleg Fellow**, Delmenhorst and Fraunhofer IFAM
- 2022 **Early Career Scholar**, Springer, Journal of Materials Research
- 2020 **Young Investigator Symposium**, American Chemical Society,
Polymeric Materials: Science and Engineering Division(ACS-PMSE)
- 2018 **NSF CAREER Award**
- 2018 Elected **Council Member** of the International Mesosstructured Materials Association
- 2018 **Breakthrough Star Award**, University of South Carolina
- 2017 **Inaugural lecture** for SAXS colloquium at University College London
- 2017 **Emerging Investigator** and “rising star of materials chemistry,” Royal Society of Chemistry,
Journal of Materials Chemistry A
- 2014 Cottrell Scholars Collaborative **New Faculty Workshop**

GRANTS

- 2024-2025 **SC Department of Commerce \$636,474** as coPI
“Fraunhofer: High Fidelity Digital Twins for Large Scale Energy Storage Batteries”
- 2022-2026 **DOE-BES \$2,550,000** as PI
“Understanding the Role of Defects to Accelerate Wadsley-Roth Niobates for Long-Duration Energy Storage” DE-SC0023377
- 2021 **Prisma Health \$25,000** as coPI
“Reducing Intravascular Stent Thrombogenicity by Hyaluronic Acid Coating”
- 2021 **SC EPSCoR RET Program \$2,000** as PI
“MADE in SC Research Experience for Teachers Program” 22-RT03
- 2020-2022 **USC ASPIRE II \$100,000** as coPI
Spider Mite Silk Fibers as a Renewable Super-Material
- 2020 **SC EPSCoR GEAR \$60,000** as PI
“Fluorophobic Response of Nanoparticle-Polymer Assemblies to Solvent Vapors”
20-GE02
- 2020-2023 **PRF-ND \$110,000** as PI
“Fluorophobic Interactions for Multimodal Nanoparticle-Polymer Assemblies”
PRF# 60855-ND7
- 2019-2020 **NSF-DMR-SSMC Workshop \$49,999** as PI
“Interdisciplinary Workshop on Hybrids and Interfaces” DMR-1940540

2018-2024 **NSF-DMR-SSMC CAREER \$533,370+\$106,673 supplement +53,849 AGEP supplement +53,496 AGEP supplement** as PI
 “CAREER: Tunable Isomorphic Architectures” DMR-1752615

2017-2019 **NSF-Electric Power Research Institute Collaboration \$109,923** as coPI
 “NSF-EPRI Innovative and Ultra-Efficient Evaporators to Realize Cost-effective Desalination” NSF-EPRI 10007094

2017-2018 **USC ASPIRE II Integration \$100,000** as coPI
 “ALD-Enabled AlGaIn based MOS Devices for Next Generation High-Voltage and High-Temperature Power Electronics”

2016 **ACS-Analytical Chemistry Division \$1000** as PI
 “SERMACS Symposium: Scattering Measurements of Polymers & Nanomaterials”

2016-2017 **ORNL-CNMS \$57,800 (support costs)** as PI
 “Thermodynamics and Kinetics of high-XN Block Copolymer Systems” CNMS2016-225

2014-2017 **NSF - Major Research Infrastructure \$584,229 (NSF), \$834,614 (TPC)** as PI
 “MRI: Acquisition of a Small-angle X-ray Scattering Instrument” DMR-1428620

INVITED UNIVERSITY PRESENTATIONS

1. 2024 **Polymer Self-Assembly of Porous Materials for Energy Applications.** M. Stefik. California Polytechnic State University, Chemistry and Materials Engineering, San Luis Obispo, CA. October 08.
2. 2024 **Direct Self-Assembly of Mesoporous Heterostructures with Block Polymers.** M. Stefik. University of Fribourg, Adolphe Merkle Institute, Fribourg, Switzerland. July 23.
3. 2024 **Single-Variable Nanomaterial Series for the Study of Electrochemical Mechanisms.** M. Stefik. University of Bern, Department of Chemistry and Biochemistry, Bern, Switzerland. July 22.
4. 2024 **Persistent Micelle Templates for Single-Variable Series of Porous Nanomaterials.** M. Stefik. Augusta University, Department of Chemistry and Biochemistry and Department of Physics, Augusta, GA. April 19.
5. 2024 **Persistent Micelle Templates Reveal Nanoscale Cause-and-Effect.** M Stefik. University of Central Florida, Department of Materials Science and Engineering, Orlando, FL. March 11.
6. 2024 **Persistent Micelle Templates Reveal Nanoscale Cause-and-Effect.** M Stefik. Texas State University, Department of Chemistry and Biochemistry, San Marcos, TX. February 07.
7. 2024 **Persistent Micelle Templates Reveal Nanoscale Cause-and-Effect.** M Stefik. University at Buffalo, Department of Chemistry, Buffalo, NY. January 29.
8. 2023 **Tailored Nanoscale Ceramics.** M. Stefik. Alfred University, Ceramics Engineering, Alfred, NY. December 08.
9. 2023 **Persistent Micelle Templates for Single-Variable Series of Porous Nanomaterials.** M. Stefik. Kennesaw State University, Department of Chemistry and Biochemistry, Kennesaw, GA. April 04.
10. 2023 **Persistent Micelle Templates for Single-Variable Series of Porous Nanomaterials.** M. Stefik. East Tennessee State University, Chemistry Department, Johnson City, TE. March 03.
11. 2022 **Persistent Micelle Templates Reveal Nanoscale Cause-and-Effect One Variable at a Time.** M. Stefik. Technical University of Munich, Department of Physics, Munich, Germany. December 14.
12. 2022 **Using Block Polymer Templates to Understand Ultrafast Energy Storage One Parameter at a Time.** M. Stefik. Helmholtz-Zentrum Berlin, Chemical Energy, Berlin, Germany. December 05. (Inaugural Seminar)

13. 2022 **Using Block Polymer Templates to Understand Ultrafast Energy Storage One Parameter at a Time.** M. Stefik. University College London, Department of Chemical Engineering, London, UK. November 23.
14. 2022 **Using Block Polymer Templates to Understand Ultrafast Energy Storage One Parameter at a Time.** M. Stefik. University of Glasgow, School of Chemistry, Glasgow, Scotland. November 21.
15. 2022 **Self-Assembly of Precision Nanomaterials for Energy Applications.** M. Stefik. Fraunhofer IFAM, Electrical Energy Storage, Bremen, Germany. November 17.
16. 2022 **Towards Better Batteries.** M. Stefik. Hanse-Wissenschaftskolleg, Delmenhorst, Germany. October 26.
17. 2021 **Persistent Micelle Templates Reveal Nanoscale Cause-and-Effect One Variable at a Time.** M Stefik. Institute for Microelectronics and Microsystems, Agrate, Italy. October 01. ([Inaugural Seminar](#))
18. 2021 **Tailored Nanomaterials from the Kinetic Control of Micelle Templates.** M Stefik. Wake Forest University, Chemistry, Winston-Salem, NC. February 24.
19. 2021 **Tailored Nanomaterials from the Kinetic Control of Micelle Templates.** M Stefik. Clemson University, Chemistry, Clemson, SC. February 18.
20. 2019 **Kinetic Control of Micelle Templates.** M Stefik. Shanghai Jiao Tong University, School of Chemistry and Chemical Engineering, Shanghai, China. July 12.
21. 2019 **Kinetic Control of Micelle Templates.** M Stefik. Chinese Academy of Forestry, Nanjing, China. July 11.
22. 2019 **Kinetic Control of Micelle Templates.** M Stefik. Sichuan University, College of Chemistry, Chengdu, China. July 08.
23. 2018 **Precision Nanomaterials from Micelle Templates via Kinetic Control.** M Stefik. University of Wyoming, Department of Chemistry, Laramie, WY. October 08.
24. 2018 **Kinetic-Control of Micelle Templates for Precision Nanomaterials.** M Stefik. University of California at Santa Barbara, Materials Research Laboratory, Santa Barbara, CA. May 25.
25. 2018 **Kinetic-Control of Micelle Templates for Precision Nanomaterials.** M Stefik. University of Tennessee Knoxville, Department of Chemistry, Knoxville, TN. April 5.
26. 2017 **Self-Assembly of Precision Nanomaterials for Energy Applications.** M Stefik. Florida State University, Department of Chemistry, Tallahassee, FL. November 2.
27. 2017 **The Self-Assembly of Next Generation Energy Devices.** M Stefik. California Polytechnic State University, Chemistry & Biochemistry Department, San Luis Obispo, CA. October 27.
28. 2017 **Block Copolymer Self-Assembly for Precision Nanomaterials.** M Stefik. Mississippi State University, Department of Chemistry, Starkville, MS. October 13.
29. 2017 **Block Copolymer Self-Assembly for Precision Nanomaterials.** M Stefik. University of Mississippi, Department of Chemistry and Biochemistry, Oxford, MS. October 12.
30. 2017 **Self-Assembly of Precision Nanomaterials for Energy Applications.** M Stefik. Delft University of Technology, Chemical Engineering, Delft, Netherlands. September 11.
31. 2017 **Self-Assembly of Precision Nanomaterials for Energy Applications.** M Stefik. Wageningen University & Research, Physical Chemistry and Soft Matter, Wageningen, Netherlands. September 8.
32. 2017 **Self-Assembly of Precision Nanomaterials for Energy Applications.** M Stefik. Jaume I University, Physics, Castellon, Spain. September 7.
33. 2017 **Self-Assembly and Deposition of Precision Nanomaterials for Energy Applications.** M Stefik. École Polytechnique Fédérale de Lausanne, Institute of Chemical Sciences and Engineering, Lausanne, Switzerland. August 4.

34. 2017 **Precise and Tunable Self-Assembly of Nanomaterials for Energy Applications.** M Stefik. University College London, Inaugural CNIE SAXS Seminar, London, UK. July 24. (Inaugural Seminar)
35. 2017 **Precise and Tunable Self-Assembly of Nanomaterials for Energy Applications.** M Stefik. Imperial College London, Department of Physics, London, UK. July 20.
36. 2017 **Self-assembly and Deposition of Precision Nanomaterials for Energy Applications.** M Stefik. Oxford University, Department of Physics, Oxford, UK. July 17.
37. 2017 **Precision Nanomaterials for Energy Applications.** M Stefik. Winthrop College, Department of Chemistry, Winthrop, SC. April 20.
38. 2017 **Precision Nanomaterials for Energy Applications.** M Stefik. University of Oregon, Department of Chemistry, Eugene, OR. March 31.
39. 2017 **Precision Nanomaterials for Energy Applications.** M Stefik. Oregon State University, Department of Chemistry, Corvallis, OR. March 30.
40. 2017 **Precision Nanomaterials for Energy Applications.** M Stefik. Pacific Northwest National Lab, Energy and Environment Directorate, Richland, WA. March 29.
41. 2016 **Persistent Micelles as Versatile Nanomaterial Templates.** M Stefik. University of Akron, Department of Polymer Science, Akron, OH. November 2.
42. 2016 **Design and Fabrication of Precision Nanomaterials for Energy Applications.** M Stefik. Worcester Polytechnic University, Mechanical Engineering, Worcester, MA. October 5.
43. 2016 **The Materials Chemistry of Precision Nanomaterials.** M Stefik. University of California at Santa Cruz, Chemistry & Biochemistry, Santa Cruz, CA. July 5.
44. 2016 **Physics of Block Copolymer Solutions for Precision Nanomaterials.** M Stefik. Howard University, Physics, Washington DC. May 4.
45. 2016 **Precision Nanomaterials from Block Copolymers.** M Stefik. University of Connecticut, Mechanical Engineering, Storrs, CT. March 25.
46. 2015 **The Materials Chemistry of Self-Assembly to Enable the Next Generation of Alternative Energy Devices.** M Stefik. California Polytechnic State University, Chemistry & Biochemistry Department, San Luis Obispo, CA. November 19.
47. 2015 **Self-Assembly Methods for Nano-Enabled Materials.** M Stefik. Ludwig Maximilian University of Munich, Physical Chemistry and Nanoscience, Munich, Germany. May 6.

INVITED CONFERENCE PRESENTATIONS

1. 2024 **Fluorophobicity as a Novel Handle for Polymer Structure Directing Agents.** M. Stefik. American Chemical Society, POLY: Advances in Fluorine Containing Polymers and Composites, Denver, CO. August 18.
2. 2024 **Direct Self-Assembly of Mesoporous Heterostructures with Block Polymers.** M. Stefik. American Association for Crystal Growth and Epitaxy Western Section, Fallen Leaf Lake, CA. June 09.
3. 2024 **Direct Self-Assembly of Mesoporous Heterostructures with Block Polymers.** M. Stefik. International Mesoporous Materials Symposium, Montpellier, France. July 08.
4. 2023 **Fluorophobic based Self-Assembly with Nanoparticles and Polymers.** M. Stefik. ACS Fluoropolymer 2023, Denver, CO. June 19.
5. 2023 **Persistent Micelle Templates for Single-Variable Series of Porous Nanomaterials.** M. Stefik. Golden Gate Polymer Forum, San Francisco, CA (online). February 16.

6. 2022 **Ultrafast Energy Storage using Nanoscale Oxides Spanning from Amorphous to Crystalline**. M. Stefik. American Association for Crystal Growth and Epitaxy Western Section, Fallen Leaf Lake, CA. June 12.
7. 2021 **Persistent Micelle Templates Reveal Nanoscale Cause-and-Effect One Variable at a Time**. M. Stefik. European Materials Research Society, Organized nanostructures and nano-objects: fabrication, characterization and applications, Online. September 23.
8. 2020 **Micelle Trap and Release: New Modalities and Applications Towards Nanomaterials**. M. Stefik. American Chemical Society, PMSE Young Investigator Symposium, San Francisco, CA. August 16.
9. 2019 **Emergent Electrochemical Behavior via Kinetic-Controlled Micelle Templates**. M. Stefik. 5th International Symposium on Energy Chemistry and Materials, Fudan University, Shanghai China. October 21. (Keynote)
10. 2018 **Precision Environmental Nanomaterials from Kinetic-Controlled Block Copolymers**. M. Stefik. South Eastern Regional ACS Meeting, Complex Systems and Polymers for the Environment, Augusta, GA. November 1.
11. 2018 **Precision Nanomaterials from Persistent Micelle Templates**. M. Stefik. International Mesosstructured Materials Symposium, UCLA, Los Angeles, CA. September 10.
12. 2018 **Precision Nanomaterials from Kinetic-Controlled Block Copolymers**. M. Stefik. American Chemical Society, POLY - Block Polymer Synthesis & Nanoscale Self-Assembly, Boston, MA. August 19.
13. 2017 **Nanoscale Templating with Persistent Micelles**. M. Stefik. Nanomaterials and Nanochemistry 2017, Atlanta, GA. November 30. (Keynote)
14. 2016 **Precision Functional Materials Derived from Block Copolymers**. M. Stefik. South Eastern Regional ACS Meeting, New Chemistry Toward Functional Polymeric Materials, Columbia, SC. October 22.
15. 2016 **Design of Novel Block Copolymers for Solution Processing of Advanced Nanomaterials**. M. Stefik. Organic Chemistry 2016, Las Vegas, NV. August 11.

CONTRIBUTED CONFERENCE PRESENTATIONS

1. 2024 **Coumarin Dimerization Enables Robust Persistence in Block Polymer Micelles**. Poster. C. S. Collins (presenting), M. Zhang, C. X. Ruff, B. Melton, and M. Stefik. AGEP National Research Conference. Arlington, VA, October 08.
2. 2024 **Concomitant Optimization of Lithium Diffusion and Conductivity during Crystallization of TiNb_2O_7 Mesoporous Microparticles**. Poster. CJ Sturgill (presenting), I. Milisavljevic, S. C. Wechsler, S. Misture, M. Stefik. Electrochemical Society, Lithium-Ion Batteries for Electric Vehicles. Honolulu, HI, October 06.
3. 2024 **Extreme Cycling Longevity in Additive Free $\text{T-Nb}_2\text{O}_5$ over a Quarter Million Lithiation Cycles**. Poster. S. Wechsler (presenting), A. Gregg, M. Stefik. Electrochemical Society, Z01 - General Student Poster Session. San Francisco, CA, May 28.
4. 2024 **Spatial control of dual nanoparticle populations orthogonally governed by Triptych block polymer templates**. Talk. M. Zhang (presenting), X. Li, C. Tang, M. Stefik. American Chemical Society, PMSE. New Orleans, LA, March 18.

5. 2023 **Effects of Charging Conditions on the Cycling Stability of T-Nb₂O₅ Electrodes.** Poster. S. Wechsler, A. Gregg (presenting), M. Stefik. Frontiers of MSE Undergraduate Symposium. Raleigh, NC, October 06.
6. 2023 **Switchable Fluorophobic Control of Nanoparticle-Polymer Mixtures.** Talk. M. Zhang (presenting), T. Larison, M. Stefik. American Chemical Society, PMSE. San Francisco, CA, August 14.
7. 2023 **Diverse Micelle Templates for Porous Materials via Bulk Phases.** Poster. Mason Wright (presenting), T. Larison, M. Stefik. Discovery USC. Columbia, SC, April 21.
8. 2023 **Multimodal Nanoparticle-Polymer Assemblies Enabled by Fluorophobic Effect Under Spatial Control.** Poster. Mengxue Zhang (presenting), M. Stefik. Discovery USC. Columbia, SC, April 21.
9. 2023 **Form-factor-agnostic model to measure micelle chain exchange during morphological transitions.** Talk. T. Larison (presenting), M. Stefik. American Chemical Society, POLY. Indianapolis, IN, March 29.
10. 2023 **Phosphonic acid based polymers; a new class of structure directing agents for nanocomposites with controlled interfaces via self-assembly.** Talk. T. Larison (presenting), E. Williams, M. Stefik. American Chemical Society, COLL. Indianapolis, IN, March 27.
11. 2023 **High- χ , low-N micelles from partially perfluorinated block polymers.** Talk. E. Williams (presenting), W. v.d. Bergh. M. Stefik. American Chemical Society, PMSE. Indianapolis, IN, March 26.
12. 2023 **New Mechanistic Perspectives of Intercalation Pseudocapacitance.** Talk. M. Stefik. American Chemical Society, ENFL. Indianapolis, IN, March 26.
13. 2022 **Persistent Micelle Corona Chemistry a Decoupled Approach to Independently Control Micelle Size and Functionalization.** Poster. T. Larison (presenting), M. Stefik. SRNL poster session. Savannah River Site, SC, November 10.
14. 2022 **Workshop on Combined Compact Neutron and X-ray Experiments.** M. Stefik. San Jose, CA, June 02.
15. 2022 **Translating cutting-edge Li-ion nanomaterials research to a 9-12th year classroom setting.** Poster. Lakshmi Sunitha Arava (presenting), Wessel van den Bergh, Eric Williams, Morgan Stefik. 2022 EPSCoR State Conference. Columbia, SC, April 22.
16. 2022 **Persistent Micelle Corona Chemistry a Decoupled Approach to Independently Control Micelle Size and Functionalization.** Poster. T. Larison (presenting), M. Stefik. 2022 EPSCoR State Conference. Columbia, SC, April 22.
17. 2022 **Tunable Phosphonic Acid Content of Block Polymer Micelles While Maintaining a Constant Core Size.** Poster. T. Larison (presenting), M. Stefik. American Chemical Society, POLY Excellence in Graduate Polymer Research Symposium. San Diego, CA, March 20.
18. 2022 **Polymer Derived Nanomaterials for Energy Devices.** Talk. Arava, L. A. (presenting); van dan Bergh, W.; Williams, E.; Stefik, M.. SC INBRE Science Symposium 2021. Online, January 23.
19. 2021 **Persistent Micelle Templates for Tunable Isomophic Architectures to Probe Nanostructure Dependence of Pseudocapacitive T-Nb₂O₅.** Talk. W. van dan Bergh (presenting), H. Lokupitiya, N. Vest, B. Reid, S. Guldin, M. Stefik. Virginia Tech National Graduate Research Polymer Conference 2021. Online, April 26.
20. 2021 **Tailored Porous Carbons Enabled by Glassy Persistent Micelles.** Poster. E. Williams (presenting), P. L. McMahon, J. E. Reynolds III, J. L. Snider,
21. V. Stavila, M. D. Allendorf and M. Stefik. American Chemical Society, PMSE. Online, April 05.

22. 2021 **Tunable isomorphic architectures reveal the nanostructure dependence of Nb₂O₅ intercalation pseudocapacitance.** Talk. W. van dan Bergh (presenting), H. Lokupitiya, N. Vest, B. Reid, S. Guldin, M. Stefik. American Chemical Society, Division of Energy and Fuels. Online, April 09.
23. 2021 **Functionalization of kinetically trapped micelles to enable constant core size.** Talk. T. Larison (presenting), M. Stefik. American Chemical Society, POLY. Online, April 12.
24. 2020 **Making Persistent Micelles Play Musical Chairs.** Talk. M. Stefik. American Chemical Society, POLY Polymer Colloids: Synthesis, Analysis, Modeling & Application. Philadelphia, PA, March 22.
25. 2020 **Polymer-Derived Tunable Isomorphic Architectures for Energy Applications.** Talk. M. Stefik. American Chemical Society, PMSE Designing Polymers for Electrochemical Energy Conversion & Storage. Philadelphia, PA, March 22.
26. 2019 **Systematic Series of Porous Nanomaterials Revealing Unexpected Confinement Trends for Electrochemical Lithiation.** Poster. K. Lantz, A. Sarkar, W. van den Bergh (presenting), N. B. Clamp, M. Stefik. International School for Materials for Energy and Sustainability. Pasadena, CA, July 22.
27. 2019 **Kinetically Controlled Block Polymer Micelles: Cavitation Induced Exchange and Templates for Nanomaterials.** Talk. K. Lantz (presenting), W. v.d. Bergh, M. Stefik. SC EPSCoR Annual Meeting, MADE in SC: Experimental. Columbia, SC, April 12.
28. 2019 **Kinetic control of block polymer micelles: Cavitation induced exchange and templates for nanomaterials.** Talk. K. A. Lantz (presenting), A. Sarkar, K. C. Littrell, T. Li, K. Hong, W. v.d. Bergh, N. B. Clamp, M. Stefik. American Chemical Society, POLY Excellence in Graduate Polymer Research Symposium. Orlando, FL, March 31.
29. 2018 **Mixed ligand nanoparticles for the uptake of fluorinated molecules.** Talk. Z. M. Marsh (presenting), K. A. Lantz, M. Stefik. South Eastern Regional Meeting of the American Chemical Society, Materials Chemistry. Augusta, GA, October 31.
30. 2018 **Kinetic-Control of Micelles for Precision Nanomaterials.** Talk. M. Stefik. European Materials Research Society, Block-copolymer self-assembly. Strasbourg, France, June 18.
31. 2018 **Designer Porous Solids from Kinetic-Controlled Templates.** Talk. M. Stefik. European Materials Research Society, Solution processing and properties of functional oxide thin films and nanostructures. Strasbourg, France, June 18.
32. 2018 **Extending Kinetic-Controlled Polymer Templates Towards 5-10 nm Pores.** Poster. A. Sarkar (presenting), M. Stefik. SC EPSCoR/IDeA State Conference. Columbia, SC, April 07.
33. 2018 **Thermoplastic elastomers from one-component block copolymer grafted nanoparticles via surface-initiated RAFT polymerization.** Talk. Y. Huang (presenting), Y. Zheng, A. Sarkar, Y. Xu, M. Stefik, B. Benicewicz. American Chemical Society, POLY General Topics: New Synthesis & Characterization of Polymers. New Orleans, LA, March 18."
34. 2017 **Bismuth Vanadate : SF-ALD and Remarkable Post-Synthetic Treatments.** Talk. M. Stefik. NanoGE, SolarFuel17. Barcelona, Spain, September 04.
35. 2017 **Persistent Micelle Templating of Diverse Metal Oxides.** Talk. A. Sarkar (presenting), M. Stefik. American Chemical Society, POLY General Topics: New Synthesis & Characterization of Polymers. Washington DC, August 20.
36. 2017 **BiVO₄ for solar water oxidation via SF-ALD.** Talk. B. Lamm (presenting), M. Stefik. American Chemical Society, ENFL, Solar Energy & Solar Cells. Washington DC, August 20.
37. 2017 **Persistent micelle templating of diverse metal oxides.** Talk. K. Lantz (presenting), A. Sarkar, M. Stefik. American Chemical Society, PMSE General Papers/New Concepts in Polymeric Materials. Washington DC, August 20.

38. 2017 **Precision Tunable Nanomaterials from Persistent Micelle Templates**. Poster. M. Stefik. Royal Society of Chemistry, 13th International Conference on Materials Chemistry, Nanomaterials. Liverpool, UK, July 10.
39. 2017 **Atomic Layer Deposition of Phase-Pure Multinary Oxides for Solar Water Splitting**. Talk. M. Stefik. Royal Society of Chemistry, 13th International Conference on Materials Chemistry, Energy & Environment. Liverpool, UK, July 10.
40. 2017 **Precision Tunable Nanomaterials from Persistent Micelle Templates**. Talk. M. Stefik. American Chemical Society, COLL Basic Research in Colloids, Surfactants & Nanomaterials. San Francisco, CA, April 06.
41. 2017 **Phase-pure and Photoactive Scheelite from Atomic Layer Deposition**. Talk. M. Stefik. American Chemical Society, ENFL Advanced Materials & Technologies for Solar Energy Conversion & Storage. San Francisco, CA, April 06.
42. 2017 **Renewable Energy to the Next Level with Fast Energy Storage**. Poster. N. Lokupitiya (presenting), M. Stefik. SC EPSCoR/IDeA State Conference. Columbia, SC, April 04.
43. 2017 **Robust porous polymers enabled by rapid TFA-etch with improved selectivity for polylactide**. Talk. A. Sarkar (presenting), M. Stefik. American Chemical Society, POLY Polymeric Materials for Performance & Sustainability. San Francisco, CA, April 02."
44. 2017 **Synthesis and fabrication of Persistent Micelle Templates (PMT) in a single day**. Talk. A. Sarkar (presenting), M. Stefik. American Chemical Society, POLY General Topics: New Synthesis & Characterization of Polymers. San Francisco, CA, April 02.
45. 2017 **Multi-scale assembly of polythiophene-surfactant supramolecular complexes**. Talk. D. Bilger (presenting), C. Osuji, M. Stefik, S. Zhang, A. Sarkar, C. Danesh, M. Gopinadhan, G. Braggin, J. Figueroa, T. V. Pham, D. Chun, Y. Rao. American Chemical Society, POLY Undergraduate Research in Polymer Science. San Francisco, CA, April 02.
46. 2016 **Atomic Layer Deposition of Bismuth Vanadate**. Talk. M. Stefik. Materials Research Society, Catalytic Materials for Energy and Sustainability. Boston, MA, December 01.
47. 2016 **Bismuth Vanadate by Atomic Layer Deposition**. Talk. M. Stefik. NanoGE, SolarFuel16. Berlin, Germany, September 03.
48. 2016 **Micelle Entrapment for Precision Nanomaterials from Block Copolymers**. Poster. M. Stefik. Gordon Conference on Polymer Physics. Holyoke, MA, July 24.
49. 2016 **Atomic Layer Deposition of Bismuth Vanadates for Solar Energy Materials**. Poster. M. Stefik. International Conference on Metalorganic Vapor Phase Epitaxy. San Diego, CA, July 10.
50. 2016 **Robust and tunable inorganic nanostructures from PEO-*b*-PHA structure-directing agent**. Talk. H. Lokupitiya (presenting), M. Stefik. American Chemical Society, PMSE Hybrid Polymers & Nanocomposites. San Diego, CA, March 13.
51. 2015 **Design of Novel Block Copolymer Assembly Systems**. Talk. M. Stefik. European Materials Research Society, Block-copolymer self-assembly for nanotechnology applications. Lille, France, May 15.
52. 2015 **Molecule to Morphology Chirality Transfer in ABC Triblock Terpolymer**. Poster. A. Sarkar (presenting), M. Stefik. American Chemical Society, POLY Excellence in Graduate Polymer Research Symposium. Denver, CO, March 22.
53. 2014 **High Performance Porous Platinum Counter Electrodes for Co(II/III) based Dye-Sensitized Solar Cells**. Talk. M. Stefik. Electrochemical Society, Charge Transfer: Electrons, Protons, and Other Ions. Orlando, FL, May 12.

54. 2014 **Anhydrous Oxide Nanoparticle Synthesis for Tunable Optoelectronic Properties**. Talk. M. Stefik. Materials Research Society, Solution Synthesis of Inorganic Functional Materials. San Francisco, CA, April 25.

INVITED PRESENTATIONS AT USC

1. 2023 **Mechanistic Perspectives on Intercalation Pseudocapacitance**. Battery Group. Feb 21.
2. 2023 **Persistent Micelle Templates Reveal Nanoscale Cause-and-Effect One Variable at a Time**. Chem. and Biochem. Jan 27.
3. 2018 **Precision Nanomaterials via Kinetic-Control**. Chem. and Biochem. Feb 19.
4. 2016 **Precision Nanomaterials from Block Copolymers**. Chem. and Biochem. Feb 19.
5. 2015 **Life as a University Researcher**. McNair student meeting. June 22.

UNDERGRADUATE TEACHING EXPERIENCE

General Chemistry (2025F, 2024S, 2023F, 2021F, 2021S, 2020F, 2019S, 2019F, 2018S, 2017F, 2016F, 2015F, 2014F, 2013F)

Nanoscale Behavior and Characterization of Block Polymers (cross-listed with graduate version)

Undergraduate Research/Independent Study/Senior Thesis (largely continuous)

GRADUATE TEACHING EXPERIENCE

Nanoscale Behavior and Characterization of Block Polymers

(2025S, 2023S, 2022S, 2020S, 2017S, 2016S, 2015S)

Introduction to Research (largely continuous)

Research in Chemistry II (largely continuous)

Dissertation Preparation (largely continuous)

SERVICE TO PROFESSION

2020 **Judge for PMSE**, San Francisco, CA. August 16.

2019 **Co-Organized Workshop** NSF-SSMC Workshop on Hybrids and Interfaces, Washington DC, Oct 17-18, 2019

2018-2024 **Elected Council Member** of the International Mesosstructured Materials Association

2018 **Co-Organized Symposium** "Block-copolymer self-assembly: fundamentals and applications" as part of the European Materials Research Society Spring meeting

2016 **Organized Symposium** "Scattering Measurements of Polymers and Nanomaterials" as part of the South East Regional Meeting of the American Chemical Society

2014 **Founded the South Carolina SAXS Collaborative** (SCSC), bringing the first publicly available SAXS facility to the state

2015-present **Reviewer** for the Petroleum Research Foundation

2014-present **Reviewer** for the National Science Foundation

2014-present **Reviewer** for the Department of Energy

SERVICE TO USC DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

2024 **Hosted** the Prospective Graduate Student Social Dinner, Mar 2.
2023-2024 **Search Committee** for Polymer Faculty
2023-present Chair of **Web and Communications**
2023-present **Industrial Advisory Board**
2023-present **Graduate Education and Research**
2022 **Hosted** the Prospective Graduate Student Social Dinner, Mar 5.
2020 **Hosted** the Prospective Graduate Student Social Dinner, Mar 7.
2018 **Hosted** the Prospective Graduate Student Social Dinner, Mar 10.
2017 **Recruitment** trips to Winthrop U., Cal Poly, and U. Akron,
2016 **Recruitment** trip to U. Akron
2015-present **Director of South Carolina SAXS Collaborative**
2015-2023 **Web Committee**
2014-present **X-ray Policy Committee**
2013-present **Library Committee**
2013 **Recruitment** at Cal Poly and the Western Regional ACS

SERVICE TO USC COLLEGE OF ARTS AND SCIENCES

2019-present **Faculty Senator**
2015 **Judge** for USC WiSci Event

SERVICE TO UNIVERSITY OF SOUTH CAROLINA

2024 **Reviewer** for Garnet Apple Selection Committee
2023, 2024 **Search Committee** for Vice Provost of Undergraduate Affairs
2020-present **Co-Webmaster** for The University Women's Club of the University of South Carolina
2021 **Referee** for ASPIRE panel
2021-2023 **Member** of Carolina Judicial Council
2020 **Referee** for SPARC Proposals
2019 **Co-Host** for the UWCSC Halloween Event for USC Families
2019 **Panel Discussion**, Workshop on NSF CAREER
2015, 2016, 2017, 2019 **SCSC Summer Outreach Program**.
2016 **Judge** for USC Discovery Day, Apr. 22.
2016 **Judge** for ASBMB Science Fair, March 1.
2016 **Judge** for Graduate Students Awards Competition, Feb. 19.
2015 **Judge** for USC Discovery Day, Apr. 24.
2015-present **Director of operations** for the SCSC, a widely used facility
2015 **Judge** for USC Wi-Sci, Women in Science Poster Competition, Apr. 23.
2015 **Judge** for USC Science and Engineering Fair, Mar. 13.
2015 **Judge** for Society for Applied Spectroscopy Poster Competition, Feb 20.
2014 **Judge** for USC Science and Engineering Fair, Mar.
2013-present **Research Advisor** for Undergraduate Students

MEDIA COVERAGE

2024 "Hard Rewards" featured in USC News and Events, Fall
2022 "The Formula for Success" featured in USC News and Events, Fall
2019 "The CAREER changer: Coveted NSF award for junior faculty requires rigorous proposals" featured in USC Times. Spring.
2017 "Professor hopes to enable ultrafast charging with nanomaterial research" featured in the Daily Gamecock. Apr 20.

2016 “Transcending Space-Time with SAXS” featured in USC Today. June 10.

PROFESSIONAL AFFILIATIONS

2020 **South Carolina Academy of Sciences**

2018 **International Mesostructured Materials Association**

2017 **American Association for the Advancement of Science**

2014 **Materials Research Society**

2014 **American Chemical Society - PMSE and POLY**

2004 **Alpha Sigma Mu** Materials Science and Engineering Honor Society

2004 **Tau Beta Pi** Engineering Honor Society