

En-Chih Liu

Assistant Professor
Department of Chemistry
Missouri University of Science and Technology
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PROFESSIONAL EXPERIENCE

2025 – <i>present</i>	Assistant Professor , Department of Chemistry Missouri University of Science and Technology
2024 – 2025	Postdoctoral Fellow , Texas A&M University Advisor: Professor Quentin Michaudel
2021 – 2024	Postdoctoral Fellow , University of Michigan Advisor: Professor Melanie S. Sanford

EDUCATIONAL HISTORY

2016 – 2021	Ph.D., Organic Chemistry , University of Minnesota Dissertation: Allylic Azides: Versatile Building Blocks to Heterocycles Ph.D. Advisor: Professor Joseph J. Topczewski
2012 – 2014	M.S., Chemistry , National Cheng Kung University, Tainan, Taiwan Thesis: Palladium-Catalyzed Pentannulation of Aryl Halides with Alkynes: Synthesis of Acephenanthrylene Derivatives M.S. Advisor: Professor Yao-Ting Wu
2008 – 2012	B.S., Chemistry , National Cheng Kung University, Tainan, Taiwan Research Topic: Electrodeposition of Zinc Oxide Undergraduate Advisor: Professor Thou-Jen Whang

TEACHING EXPERIENCE

2018 – Spring	T.A. , Organic Lab, University of Minnesota
2017 – Fall	T.A. , Organic Lab, University of Minnesota
2017 – Spring	T.A. , Organic Lab, University of Minnesota
2016 – Fall	T.A. , Organic Lab, University of Minnesota
2013.09 – 2014.01	T.A. , General Chemistry Lab, National Chen Kung University, Tainan, Taiwan
2013.02 – 2013.07	T.A. , General Chemistry Lab, National Chen Kung University, Tainan, Taiwan
2012.09 – 2013.01	T.A. , Organic Chemistry Lab, National Chen Kung University, Tainan, Taiwan

AWARDS AND HONORS

2020 *Doctoral Dissertation Fellowship*
2019 *Wayland E. Noland Fellowship*
2019 *Paul and Gerda Gassman award at the Graduate Student Research Symposium*
2018 *Honorable Mention in teaching chemistry for the 2017-2018 Academic Year*
2015 *Tien Ming-Peng Academic Research Foundation*

PUBLICATIONS

- 14) Brandes, D.; Lasky, M.; Lisboa, A. V. R.; **Liu, E.-C.**; Ramy, M.; Sanford, M. "Photoactivation of Electron Donor-Acceptor Complexes for C(sp²)-H Amination of Arenes Using an Organocatalytic Acceptor" *submitted*.
- 13) Chattapadhyay, D.; **Liu, E.-C.**, Diaz; M. J., Maity, A.; Bratten, B. A.; Michaudel, Q. "Radical Sorting as a General Framework for Deaminative C(sp³)-C(sp²) Cross-Coupling" *Chem*, **2026**, *in press*. (DOI: 10.1016/j.chempr.2025.102716)
- 12) **Liu, E.-C.**; Reich, S. M.; Tanwar, M.; Neurock, M.; Luo, L.; Sanford, M. S. "Electrooxidative Deoxyfluorination of Arenes with NEt₃•HF." *J. Org. Chem.* **2025**, *90*, 1889–1894. (DOI: 10.1021/acs.joc.4c02540)
- 11) Lasky, M. R.; **Liu, E.-C.**; Remy, M. S.; Sanford, M. S. "Visible-Light Photocatalytic C–H Amination of Arenes Utilizing Acridine–Lewis Acid Complexes." *J. Am. Chem. Soc.* **2024**, *146*, 14799–14806. (DOI: 10.1021/jacs.4c02991)
- 10) Aguilera, E. Y.; **Liu, E.-C.**; Thullen, S. M.; Sanford, M. S. "Transannular Functionalization of Multiple C(sp³)-H Bonds of Tropane via an Alkene-Bridged Palladium(I) Dimer" *Organometallics* **2023**, *42*, 627. (DOI: 10.1021/acs.organomet.3c00086)
- 9) **Liu, E.-C.**; Topczewski, J. J. "Enantioselective Nickel-Catalyzed Alkyne–Azide Cycloaddition by Dynamic Kinetic Resolution" *J. Am. Chem. Soc.* **2021**, *143*, 5308. (DOI: 10.1021/jacs.1c01354.)
- 8) Carlson, A. S.*; **Liu, E.-C.***; Topczewski, J. J. "A Cascade Reaction of Cinnamyl Azides with Acrylates Directly Generates Fused Pyrrolidine-Dihydropyrazole Heterocycles" *J. Org. Chem.* **2020**, *85*, 6044. (DOI: 10.1021/acs.joc.0c00535)
- 7) **Liu, E.-C.**; Topczewski, J. J. "Gram-Scale Synthesis of 2,5-Difluoro-7,7,8,8-tetracyanoquinodimethane (F₂-TCNQ)" *J. Org. Chem.* **2020**, *85*, 4560. (DOI: 10.1021/acs.joc.0c00053)
- 6) Topczewski, J. J.*; **Liu, E.-C.** "Double-Click Enables Synthesis of Chemical Libraries for Drug Discovery" *Nature* **2019**, *574*, 42. (DOI: 10.1038/d41586-019-02905-w)
- 5) Daley, R. A.; **Liu, E.-C.**; Topczewski, J. J. "Additive-Free Palladium-Catalyzed Decarboxylative Cross-Coupling of Aryl Chlorides" *Org. Lett.* **2019**, *21*, 4734. (DOI: 10.1021/acs.orglett.9b01620)
- 4) Alexander, J. R.; Ott, A. A.; **Liu, E.-C.**; Topczewski, J. J. "Kinetic Resolution of Cyclic Secondary Azides, Using an Enantioselective Copper-Catalyzed Azide–Alkyne Cycloaddition" *Org. Lett.* **2019**, *21*, 4355. (DOI: 10.1021/acs.orglett.9b01556)
- 3) **Liu, E.-C.**; Topczewski, J. J. "Enantioselective Copper Catalyzed Alkyne–Azide Cycloaddition by Dynamic Kinetic Resolution" *J. Am. Chem. Soc.* **2019**, *141*, 5135. (DOI: 10.1021/jacs.9b01091)

2) Lee, C.-W.; **Liu, E.-C.**; Wu, Y.-T. "Palladium-Catalyzed Reaction of Haloarenes with Diarylethynes: Synthesis, Structural Analysis, and Properties of Methylene-Bridged Arenes" *J. Org. Chem.* **2015**, *80*, 10446. (DOI: 10.1021/acs.joc.5b02111)

1) **Liu, E.-C.**; Chen, M.-K.; Li, J.-Y.; Wu, Y.-T. "Palladium-Catalyzed Annulation of 9-Halophenanthrenes with Alkynes: Synthesis, Structural Analysis, and Properties of Acephenanthrylene-Based Derivatives" *Chem. Eur. J.* **2015**, *21*, 4755. (DOI: 10.1002/chem.201405763)

Meeting Presentations

7) Liu, E.-C.; Sanford, M. S. "Electrochemical S_NAr Fluorination" Center for Synthetic Organic Electrochemistry 2023 All-Hands Meeting, Detroit, MI, August 22-24, 2023.

6) Liu, E.-C.; Sanford, M. S. "Electrochemical Arene Fluorination via S_NAr" Center for Synthetic Organic Electrochemistry 2022 All-Hands Meeting, Salt Lake City, UT, November 16-18, 2022.

5) Liu, E.-C.; Sanford, M. S. "Hypervalent Iodine Catalyzed C–H Functionalization of Arenes" Gordon Research Conference – Organic Reactions and Processes, Bryant University, Smithfield, RI, July 17-22, 2022.

4) Liu, E.-C.; Alexander, J. R.; Ott, A. A.; Topczewski, J. J. "Enantioselective Copper Catalyzed Alkyne-Azide Cycloaddition by Kinetic and Dynamic Kinetic Resolution" National Organic Symposium, Indiana University, Bloomington, IN, June 23-27, 2019.

3) Liu, E.-C.; Topczewski, J. J. "Enantioselective Copper(I) Catalyzed Alkyne-Azide Cycloaddition by Dynamic Kinetic Resolution" Graduate Student Research Symposium, University of Minnesota, Minneapolis, MN, June 4, 2019.

2) Liu, E.-C.; Topczewski, J. J. "Enantioselective Copper Catalyzed Alkyne-Azide Cycloaddition by Dynamic Kinetic Resolution" Midwest Regional Meeting of the American Chemical Society, Iowa State University, Ames IA, October 21-23, 2018.

1) Liu, E.-C.; Wu, T.-C.; Hsin, H.-J.; Chen, M.-K.; Kuo, M.-Y.; Wu, Y.-T. "Attempts towards Synthesis of Smallest Carbon Nanotube C₄₀H₁₀" 15th International Symposium on Novel Aromatic Compounds (ISNA-15), Taipei, Taiwan, July 28-August 2, 2013.