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Robert Manuel Stolz

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EDUCATION AND TRAINING

Stanford University, *Baker Postdoctoral Fellow* 2022–Date
Advisor: Hemamala Karundasa

Dartmouth College, *Postdoctoral Scholar* 2022
Advisor: Katherine A. Mirica

Dartmouth College, *Ph.D., Chemistry* 2015–2021
Advisor: Katherine A. Mirica
Thesis: *The Role of Surface Chemistry in Electroanalysis with Conductive Two-Dimensional Framework Materials*
Date awarded: 10/01/2021

Wesleyan University, *M.A., Chemistry* 2012–2013
Advisor: Brian H. Northrop
Thesis: *Synergy of Dynamic Covalent and Click Methodologies in Dendrimer Synthesis: A Study of Thiol-Ene Reactions in Material Science*

Wesleyan University, *B.A., Chemistry* 2008–2012
Advisor: Brian H. Northrop

PROFESSIONAL EXPERIENCE

DuPont Chemical Company, Crop Protection Division, Wilmington, DE 2015
Associate Scientist, Research Areas: aromatic functionalization, reaction scale-up

Dow Chemical Company, Advanced Materials Division, Collegetown, PA 2013–2015
Chemist, Research Areas: emulsion polymerization, coatings development

AWARDS AND HONORS

Baker Fellowship, *Stanford University* 2022–2023
Stanford PRISM Scholar, *Stanford University* 2022
NH-BioMade Seed Funding, *National Science Foundation EPSCOR* 2021–2022
Outstanding Research Mentor Award, *Dartmouth College* 2021
(Awarded by the Dartmouth Center for the Advancement of Learning)
Walter H. Stockmayer Graduate Fellowship, *Dartmouth College* 2020
(awarded by a vote of the Faculty of the Dept. of Chemistry for outstanding research performance)
German Exchange Delegate, *New England Section of the American Chemical Society* 2019–2021
Undergraduate Research Fellowship, *Howard Hughes Medical Institute* 2011–2012
Undergraduate Research Fellowship, *Andrew W. Mellon Foundation* 2010

TEACHING AND MENTORING EXPERIENCE

Teaching Assistant, CHEM 258: Organic Chemistry Laboratory (Wesleyan University, 2010)
Teaching Assistant, PHYS 102: Physics for Future Presidents (Wesleyan Univerity, 2009, 2010)

Laboratory Instructor, CHEM 5: General Chemistry Laboratory (Dartmouth College: 2015, 2018)
Laboratory Instructor, CHEM 6: General Chemistry Laboratory (Dartmouth College: 2016)
Teaching Assistant, CHEM 10: Honors General Chemistry (Dartmouth College: 2016)
Laboratory Instructor, CHEM 10: Honors General Chemistry Laboratory (Dartmouth College: 2016)
Mentored 5 undergraduate students in research chemistry at Dartmouth College

PEER-REVIEWED PUBLICATIONS

*denotes corresponding author(s), † denotes co-first authors, underlined authors indicate undergraduate scholars

1. Ambrogi, E. K.; Damacet, P.; **Stolz, R. M.**; Mirica, K. A.* "Mechanistic Insight into the Formation of Conductive, Layered Metal–Organic Framework Nanocrystals" *Manuscript in Preperation*
2. Meng, Z.; **Stolz, R. M.**; Jones, C. G.; Nelson, H. M.; Mirica, K. A.* "Gas-Triggered Electrical and Magnetic Modulation of Two-Dimensional Conductive Metal–Organic Frameworks" *Under Revision*
3. Eagleton A. E.†; Ko M.†; **Stolz, R. M.**; Vereshchuk, N.; Mendecki, L.; Levenson, A. M.; Huang, C.; MacVeigh, K. C.; Claude, I.; Meng, Z.; Peterson, G. W.; Mahdavi-Shakib, A.; Frederick, B. F.; Mirica, K. A.* "Fabrication of Multifunctional Electronic Textiles Using Oxidative Restructuring of Copper into a Cu-based Metal–Organic Framework" *J. Am. Chem. Soc.* **2022**, 144, 51, 23297–23312.
4. **Stolz, R. M.**†; Kolln, A. F.†; Rocha, B. C.; Brinks, A.; Eagleton, A. M.; Mendecki, L.; Vashisth, H.; Mirica, K. A.* "Epitaxial Self-Assembly of Interfaces of 2D Metal–Organic Frameworks for Electroanalytical Detection of Neurochemicals" *ACS Nano* **2022***,* 16, 9, 13869–13883.
5. Aykanat, A.; Meng, Z.; **Stolz R. M.**; Morrell, C. M.; Mirica, K. A.* "Bimetallic Two-Dimensional Metal–Organic Frameworks for the Chemiresistive Detection of Carbon Monoxide". *Angew. Chem. Int. Ed.* **2022***,* 60, 2–10.
6. Aykanat, A.; Jones, C. G.; Cline, E. L.; **Stolz, R. M.**; Nelson, H. M.*; Mirica, K. A.* "Conductive Stimuli-Responsive Coordination Network Linked with Bismuth for Chemiresistive Gas Sensing"*, ACS Appl. Mater. Interfaces* **2021**, 13, 60306–60318.
7. Ko, M.; Mendecki, L.; Eagleton, A.; Durbin, C. G.; **Stolz, R. M.**; Meng. Z.; Mirica, K. A.* "Employing Conductive Metal–Organic Frameworks for Voltammetric Detection of Neurochemicals" *J. Am. Chem. Soc.* **2020**, *142*, 11717–11733.
8. **Stolz, R. M.**; Mahdavi-Shakib, A.; Frederick, B. G.*; Mirica, K. A.* "Host–Guest Interactions and Redox Activity in Layered Conductive Metal–Organic Frameworks" *Chem. Mater.* **2020***, 32,* 7639–7652.
9. Meng, Z.; **Stolz, R. M.**; Mirica, K. A.* "Two-Dimensional Chemiresistive Covalent Organic Framework with High Intrinsic Conductivity" *J. Am. Chem. Soc.* **2019**, *141*, 11929–11937.
10. Meng, Z.†; **Stolz, R. M.**†; Mendecki, L.†; Mirica, K. A.* "Electrically-Transduced Chemical Sensors Based on Two-Dimensional Nanomaterials" *Chem. Rev.* **2019**, *119,* 478–598.
11. Frayne, S. H.; **Stolz, R. M.**; Northrop, B. H.* "Dendritic Architectures by Orthogonal Thiol–Maleimide "Click" and Furan–Maleimide Dynamic Covalent Chemistries" *Org. Biomol. Chem.* **2019**, 7878–7883.
12. **Stolz, R. M.**; Northrop, B. H.* "Experimental and Theoretical Studies of Selective Thiol–Ene and Thiol–Yne Click Reactions Involving N-Substituted Maleimides" *J. Org. Chem.* **2013**, 78, 8105–8116.

FILED PATENTS

1. "Conductive Metal–Organic Frameworks for Electrochemical Detection of Analytes" Mirica, K. A.; Mendecki, L.; Ko, M.; Meng, Z.; **Stolz, R. M.**; Eagleton, A. U.S. Patent Publication No. 20210262970, Application No. 16/855,819
2. "Two-dimensional Stimuli-Response Covalent Organic Frameworks with High Intrinsic Conductivity" Mirica, K. A.; Meng, Z.; **Stolz, R. M.**; US Patent 11,634,446, 2023

ORAL PRESENTATIONS

1. NSF EPSCOR NH-BioMade, Dartmouth College, Hanover, NH, USA, **2022**
2. *Pacifichem*, **2021**, Virtual
3. (*BOSSs*), **2021**, Virtual (https://www.bosssymposium.org/).

4. "*Organic pi-Electron Molecules and Materials Meetings (OPiEM3),* **2021**, Virtual (https://haleylab.uoregon.edu/opiem3-meetings/).
5. *Frühjahrssymposium*, **2021**, Leipzig, Germany (invited)
6. NSF EPSCOR NH-BioMade, University of New Hampshire, Durham, NH, **2021**,
7. American Chemical Society Spring National Meeting, San Fransisco, **2020**
8. Frontier Institute for Research in Sensor Technologies (FIRST), University of Maine, Orono, ME, **2022**

CONTRIBUTED POSTERS

1. *NSYCC (NESACS)*, **2021**, Boston, MA (virtual)
2. *Frühjahrssymposium*, **2021**, Leipzig, Germany (virtual)
3. NSF EPSCOR NH-BioMade, University of New Hampshire, **2020**, Durham, NH
4. *3D Printing 2019*, **2019**, Hanover, NH
5. *Gordon Research Conference: Self-Assembly and Supramolecular Chemistry*, **2019**, Les Diablerets, CH.
6. *2nd From Carbon-Rich Molecules to Carbon-Based Materials*, **2018**, Nassau, Bahamas

SERVICE

Committee Member, Graduate Student and Postdoctoral Advisory Committee (VPGE), *Stanford*, 2023–2024
Committee Member, Provostial Search Advisory Committee, *Stanford*, 2023
Guest Editor, Special Edition of *Sensors,* 2022
Committee Member, Scholastic Development Team for the State Science Olympiad, *New Hampshire*, 2018
Chemistry Department Representative, Graduate Student Council, *Dartmouth College*, 2015–2016
Peer Reviewer for *Science*, *Nature Chem.*, *Chem. Sci., Nature Commun., J. Am. Chem. Soc.*, *Chem. Mater.*, *ACS Appl. Mater. Int.*, *ACS Sensors, J. Mater. Chem. C., ACS Omega*

OUTREACH

Outreach Volunteer, Stanford Nano Shared Facilities, 2023–Date
Judge, Stanford Research Conference, Stanford University, 2023
Educator, "Research Scientist for a Day" outreach initiative, Dartmouth College, 2015–2021
Guest Lecturer, Undergraduate Research Recruitment Initiative 2015–2020
Judge, Lyme Middle School Science Fair, New Hampshire, 2016
Tutor and Organizer, Community Science Outreach Society, Dow Chemical Company 2013–2014
Tutor for Upward Bound Math Science, Wesleyan University, 2009–2012