

Hyunho Noh, Ph.D.

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University of Oklahoma, Department of Chemistry and Biochemistry, Norman, OK

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PROFESSIONAL APPOINTMENTS

Assistant Professor in Chemistry, University of Oklahoma	Norman, OK Aug. 2023-Present
Postdoctoral Associate, Yale University Advisor: James M. Mayer	New Haven, CT Dec. 2019 – Aug. 2023
Graduate Research Assistant, Northwestern University Co-Advisors: Joseph T. Hupp and Omar K. Farha	Evanston, IL Aug. 2015 – Dec. 2019
Visiting Graduate Research Assistant, Argonne National Laboratory Advisor: Alex B. F. Martinson	Argonne, IL Aug. 2018 – Nov. 2019
Undergraduate Research Assistant, University of Illinois Urbana-Champaign Advisor: Mei Shen	Champaign, IL Nov. 2013 – June 2015

EDUCATION

Ph.D. in Chemistry, Northwestern University Thesis Title: Towards Structurally Well-Defined, Metal Chalcogenide/Pnictide-Based Heterogeneous Catalysts for Energy-Relevant Transformations	Evanston, IL Dec. 2019 GPA: 3.9/4.0
B.S. in Chemistry, University of Illinois Urbana-Champaign Thesis Title: Potential Enhancement in the Efficiencies of Dye-Sensitized Solar Cell through the Application of Graphene Quantum Dots and Donor-Acceptor Organic Dyes	Champaign, IL Dec. 2014 GPA: 3.8/4.0

FELLOWSHIPS AND AWARDS

Presidential International Travel Fellowship	Norman, OK 2023
Ryan Fellowship	Evanston, IL 2017- 2019
Highest Departmental Distinction in Chemistry	Champaign, IL 2014
Cum Laude	Champaign, IL 2014
Dean's List	Champaign, IL 2011- 2014
Dow Undergraduate Scholarship Award	Champaign, IL 2014

PUBLICATIONS

(Total Number of Citations: 2282, h-index: 22)

Independent Career:

- Altınçekiç, N. G.; Lander, C. W.; Roslend, A.; Yu, J.; Shao, Y.; **Noh, H.** Electrochemically Determined and Structurally Justified Thermochemistry of H atom Transfer on Ti-Oxo Nodes of the Colloidal Metal–Organic Framework Ti-MIL-125. *J. Am. Chem. Soc.* **2024** Accepted
- Ghuffar, H. A.; **Noh, H.** Lithium-Coupled Electron Transfer Reactions of Nano-Confined WO_x within Zr-Based Metal–Organic Framework, MOF-808, *Front. Chem.* **2024**, 12, 1427536.
- Ingram, Z.J.; Lander, C. W.; Oliver, M. C.; Altınçekiç, N. G.; Huang, L.; Shao, Y.; **Noh, H.** Hydrogen-Atom Binding Energy of Structurally Well-defined Cerium Oxide Nodes at the Metal–Organic Framework-Liquid Interfaces. *J. Phys. Chem. C* **2024**, 128, 9556-9565.

Prior to Independent Career:

- Nedzbala, H. S.; Westbroek, D.; Yang, H.; **Noh, H.**; Magpantay, S. V.; Donley, C. L.; Kumbhar, A. S.; Parsons, G. N.; Mayer, J. M. Photoelectrochemical Proton-Coupled Electron Transfer to TiO₂ Thin Films on Silicon. *J. Am. Chem. Soc.* **2024**, *146*, 10559-10572.
- Noh, H.**; Mayer, J. M. Medium-Independent Hydrogen Atom Binding Isotherms of Nickel Oxide Electrodes. *Chem* **2022**, *8*, 3324-3345.
- Agarwal, R. G.; Coste, S. C.; Groff, B. D.; Heuer, A. M.; **Noh, H.**; Parada, G. A.; Wise, C. F.; Nichols, E. M.; Warren, J. J.; Mayer, J. M. Free Energies of Proton-Coupled Electron Transfer Reagents and Their Applications. *Chem. Rev.* **2021**, *122*, 1-49.
- Turetsky, D., Alzate-Sánchez, D., Wasson, M. C., Yang, A.; **Noh, H.**; Atligan, A.; Islamoglu, T.; Farha, O. K.; Dichtel, W. R. Hot Press Synthesis of MOF/Textile Composites for Nerve Agent Detoxification. *ACS Mater. Lett.* **2022**, *4*, 1511-1515.
- Zhang, K.; Goswami, S.; **Noh, H.**; Lu, Z.; Sheridan, T.; Duan, J.; Dong, W.; Hupp, J. T. An iron-porphyrin grafted metal-organic framework as a heterogeneous catalyst for the photochemical reduction of CO₂. *J. Photochem. Photobio.* **2022**, *10*, 100111.
- Yang, Y.; **Noh, H.**; Ma, Q.; Wang, R.; Chen, Z.; Schweitzer, N. M.; Liu, J.; Chapman, K.; Hupp, J. T. Engineering Dendrimer-Templated, Metal-Organic Framework-Confined Zero-Valent, Transition-Metal Catalysts. *ACS Appl. Mater. Interfaces* **2021**, *13*, 36232-36239.
- Yang, Y.; Zhang, X.; Kanchanakungwankul, S.; Lu, Z.; **Noh, H.**; Syed, Z. H.; Farha, O. K.; Truhlar, D. G.; Hupp, J. T. Unexpected "Spontaneous" Evolution of Catalytic, MOF-Supported Single Cu(II) Cations to Catalytic, MOF-Supported Cu(0) Nanoparticles. *J. Am. Chem. Soc.* **2020**, *142*, 21169-21177.
- Noh, H.**; Jeon, N.; Martinson, A. B. F.; Hupp, J. T. Stabilization of Low Valent Zirconium Nitrides in Titanium Nitride via Plasma-Enhanced Atomic Layer Deposition and Assessment of Electrochemical Properties. *ACS Appl. Energy Mater.* **2020**, *3*, 5095-5100.
- Noh, H.***; Yang, Y.*; Zhang, X.; Goetjen, T. A.; Syed, Z. H.; Lu, Z.; Ahn, S.; Farha, O. K.; Hupp, J. T. Single-Site, Single-Metal-Atom, Heterogeneous Electrocatalyst: Metal-Organic-Framework Supported Molybdenum Sulfide Within for Redox Mediator-Assisted Hydrogen Evolution Reaction. *ChemElectroChem* **2020**, *7*, 509-516. *Authors contributed equally
- Zhang, K.; Lee, T. H.; **Noh, H.**; Farha, O. K.; Jang, H. W.; Choi, J.-W.; Mohammadreza, S. Tailorable Topologies for Selectively Controlling Crystals of Expanded Prussian Blue Analogs. *Cryst. Growth Des.* **2019**, *19*, 7385-7395.
- Cheng, E.; McCullough, L.; **Noh, H.**; Farha, O. K.; Hupp, J. T.; Notestein, J. M. Isobutane Dehydrogenation over Bulk and Supported Molybdenum Sulfide Catalysts. *Ind. Eng. Chem. Res.* **2019**, *59*, 1113-1122.
- Choi, H.; Peters, A. W.; **Noh, H.**; Gallington, L. C.; Platero-Prats, A. E.; Destefano, M. R.; Rimoldi, M.; Chapman, K. W.; Farha, O. K.; Hupp, J. T. Vapor-Phase Fabrication and Condensed-Phase Application of a MOF-Node-Supported Iron-Thiolate Photocatalyst for Nitrate Conversion to Ammonium. *ACS Appl. Energy Mater.* **2019**, *2*, 8695-8700.
- Zhang, K.; Lee, T. H.; **Noh, H.**; Islamoglu, T.; Farha, O. K.; Jang, H. W.; Choi, J.-W.; Shokouhimehr, M. Realization of Lithium-Ion Capacitors with Enhanced Energy Density via the Use of Gadolinium Hexacyanocobaltate as a Cathode Material. *ACS Appl. Mater. Interfaces* **2019**, *11*, 31799-31805.

17. Chen, Y.; Li, P.; **Noh, H.**; Kung, C.-W.; Buru, C. T.; Wang, X.; Zhang, X.; Farha, O. K. Stabilization of Formate Dehydrogenase in a Metal-Organic Framework for Bioelectrocatalytic Reduction of CO₂. *Angew. Chem. Int. Ed.* **2019**, *131*, 7764-7768.
18. Gong, X.*; **Noh, H.***; Gianneschi, N. C.; Farha, O. K. Interrogating Kinetic versus Thermodynamic Topologies of Metal-Organic Frameworks via Combined Transmission Electron Microscopy and X-ray Diffraction Analysis. *J. Am. Chem. Soc.* **2019**, *141*, 6146-6151. *Authors contributed equally
19. Chen, Z.; Wang, X.; **Noh, H.**; Ayoub, G.; Peterson, G. W.; Buru, C. T.; Islamoglu, T.; Farha, O. K. Scalable, Room Temperature, and Water-based Synthesis of Functionalized Zirconium-based Metal-Organic Frameworks for Toxic Chemical Removal. *CrystEngComm* **2019**, *21*, 2409-2415.
20. Goswami, S.; **Noh, H.**; Redfern, L. R.; Otake, K.; Kung, C.-W.; Cui, Y.; Chapman, K. W.; Farha, O. K.; Hupp, J. T. Pore-templated Growth of Catalytically-Active Gold Nanoparticles within a Metal-Organic Framework. *Chem. Mater.* **2019**, *31*, 1485-1490.
21. Osterrieth, J. W. M.; Wright, D.; **Noh, H.**; Kung, C.-W.; Vulpe, D.; Li, A.; Park, J. E.; Van Duyne, R. P.; Moghadam, P. Z.; Baumberg, J. J.; Farha, O. K.; Fairen-Jimenez, D. Core-shell Gold Nanorod@Zirconium-based Metal-Organic Framework Composites as *in situ* Size-Selective Raman Probes. *J. Am. Chem. Soc.* **2019**, *141*, 3893-3900.
22. Robinson, L.; Zhang, L.; Drout, R. J.; Li, P.; Haney, C.; Brikha, A.; **Noh, H.**; Mehdi, B. L.; Browning, N. D.; Dravid, V. P.; Cui, Q.; Islamoglu, T.; Farha, O. K. A New Bismuth Metal-Organic Framework as Contrast Agent for X-ray Computed Tomography. *ACS Appl. Bio Mater.* **2019**, *2*, 1197-1203.
23. **Noh, H.**; Yang, Y.; Ahn, S.; Peters, A. W.; Farha, O. K.; Hupp, J. T. Molybdenum Sulfide within a Metal-Organic Framework for Photocatalytic Hydrogen Evolution Reaction from Water. *J. Electrochem. Soc.* **2019**, *166*, H3154-H3158.
24. **Noh, H.**; Kung, C.-W.; Otake, K.; Peters, A. W.; Li, Z.; Liao, Y.; Gong, X.; Farha, O. K.; Hupp, J. T., Redox Mediator-Assisted Electrocatalytic Hydrogen Evolution Reaction from Water by a Molybdenum Sulfide-Functionalized Metal-Organic Framework. *ACS Catal.* **2018**, *8*, 9848-9858.
25. Majewski, M. B.; **Noh, H.**; Islamoglu, T.; Farha, O. K., NanoMOFs: Little Crystallites for Substantial Applications. *J. Mater. Chem. A* **2018**, *6*, 7338-7350.
26. Liu, J.; Ye, J.; Li, Z.; Otake, K.; Liao, Y.; Peters, A. W.; **Noh, H.**; Truhlar, D. G.; Gagliardi, L.; Cramer, C. J.; Farha, O. K.; Hupp, J. T., Beyond the Active Site: Tuning the Activity and Selectivity of a Metal-Organic Framework-Supported Ni Catalysts for Ethylene Dimerization. *J. Am. Chem. Soc.* **2018**, *140*, 11174-11178.
27. **Noh, H.**; Kung, C.-W.; Islamoglu, T.; Peters, A. W.; Liao, Y.; Li, P.; Garibay, S. J.; Zhang, X.; DeStefano, M. R.; Hupp, J. T.; Farha, O. K., Room Temperature Synthesis of an 8-Connected Zr-Based Metal-Organic Framework for Top-Down Nanoparticle Encapsulation. *Chem. Mater.* **2018**, *30*, 2193-2197.
28. Zhang, X.; Vermeulen, N. A.; Huang, Z.; Cui, Y.; Liu, J.; Krzyaniak, M. D.; Li, Z.; **Noh, H.**; Wasielewski, M. R.; Delferro, M.; Farha, O. K., Effect of Redox "Non-Innocent" Linker on the Catalytic Activity of Copper-Catecholate-Decorated Metal-Organic Frameworks. *ACS Appl. Mater. Interfaces* **2018**, *10*, 635-641.
29. Kung, C.-W.; Audu, C. O.; Peters, A. W.; **Noh, H.**; Farha, O. K.; Hupp, J. T., Copper Nanoparticles Installed in Metal-Organic Framework Thin Films are Electrocatalytically Competent for CO₂ Reduction. *ACS Energy Lett.* **2017**, *2*, 2394-2401.

30. Li, Z.; Peters, A. W.; Platero-Prats, A. E.; Liu, J.; Kung, C.-W.; **Noh, H.**; DeStefano, M. R.; Schweitzer, N. M.; Chapman, K. W.; Hupp, J. T.; Farha, O. K., Fine-Tuning the Activity of Metal–Organic Framework-Supported Cobalt Catalysts for the Oxidative Dehydrogenation of Propane. *J. Am. Chem. Soc.* **2017**, *139*, 15251-15258.
31. **Noh, H.**; Cui, Y.; Peters, A. W.; Pahls, D. R.; Ortuño, M. A.; Vermeulen, N. A.; Cramer, C. J.; Gagliardi, L.; Hupp, J. T.; Farha, O. K. An Exceptionally Stable Metal–Organic Framework Supported Molybdenum(VI) Oxide Catalyst for Cyclohexene Epoxidation. *J. Am. Chem. Soc.* **2016**, *138*, 14720-14726. Highlighted as the Editor's Choice in Science.

PRESENTATIONS AND SEMINARS

American Chemical Society National Meeting Spring 2025 (Invited)	San Diego, CA Mar. 2025
Seminar at California State University Chico (Invited)	Chico, CA Oct. 2024
Seminar at California State Polytechnic University, Pomona (Invited)	Pomona, CA Oct. 2024
Seminar at California State University Los Angeles (Invited)	Los Angeles, CA Oct. 2024
Seminar at California State University Long Beach (Invited)	Long Beach, CA Oct. 2024
American Chemical Society National Meeting Fall 2024 Metal–Organic Frameworks & Open Framework Materials Conference in Taiwan (Invited)	Denver, CO Aug. 2024 Tainan, Taiwan Oct. 2023
9 th International Conference on Metal–Organic Frameworks and Open Framework Compounds (MOF2024)	Singapore July 2024
American Chemical Society Oklahoma Regional Meeting (Invited Plenary Speaker)	Norman, OK March. 2024
American Chemical Society Southwest Regional Meeting Fall 2023 (Invited)	Oklahoma City, OK Nov. 2023
Texas Pore Engineering Conference 2023	Denton, TX Oct. 2023
American Chemical Society Northeast Regional Meeting Fall 2022	Rochester, NY Oct. 2022
American Chemical Society Meeting Spring 2022	San Diego, CA Mar. 2022
American Chemical Society Meeting Spring 2021	Virtual Mar. 2021
North American Catalysis Society Meeting	Chicago, IL June 2019
International Conference of Coordination Chemistry	Sendai, Japan July 2018
SUNCAT Workshop	San Francisco, CA Aug. 2017
International Solar Fuel Conference	San Diego, CA June 2017
Gordon Research Conference	Eaton, MA June 2016

TEACHING EXPERIENCES

Frontiers in Inorganic Chemistry: Electrochemistry – <i>Graduate-Level</i>	Norman, OK Oct. – Dec. 2024
Advanced Inorganic Chemistry – <i>Undergraduate-Level</i>	Norman, OK Aug. – Dec. 2023
Chemistry of Alternative Energies – <i>Graduate-Level</i>	Evanston, IL Jan. 2018 – Mar. 2019
Environmental Chemistry – <i>Graduate-Level</i>	Evanston, IL Apr. – June 2018
Introductory Organic Chemistry – <i>Undergraduate-Level</i>	Evanston, IL Mar. – June 2016
General Chemistry – <i>Undergraduate-Level</i>	Evanston, IL Sep. 2015 – Sep. 2016
Environmental Chemistry – <i>Undergraduate-Level</i>	Champaign, IL Jan. – May 2015

RELATED PROFESSIONAL EXPERIENCES

NSF CAREER Workshop	Alexandria, VA May 2024
Laboratory Safety Officer, <i>Yale University</i>	New Haven, CT Jan. 2020 – June 2023
American Chemical Society Postdoc-to-Faculty Workshop	Portland, OR Jul. 2022
Department of Energy Early Career Network Representative	Evanston, IL Aug. 2018 – Aug. 2019
Center for Light Energy Activated Redox Process Coordinator	Evanston, IL Aug. 2018 – Aug. 2019