

Agnes E. Thorarinsdottir

Assistant Professor of Chemistry

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Email: agnes.thorarinsdottir@rochester.edu**Website:** <https://sas.rochester.edu/chm/groups/thorarinsdottir/>**PROFESSIONAL EXPERIENCE****2023–present** Assistant Professor of Chemistry, University of Rochester, Rochester, NY, USA**2020–2023** Postdoctoral Fellow in Chemistry, Harvard University, Cambridge, MA, USAFaculty Advisor: Daniel G. Nocera, Professor of ChemistryProject: Design of Electrocatalytic Systems to Address Challenges in EnergyFunding: Environmental Fellow, Harvard University Center for the Environment**EDUCATION****2020** Ph.D. in Chemistry, Northwestern University, Evanston, IL, USAFaculty Advisor: T. David Harris, Assistant Professor of ChemistryThesis: Control of Electronic Spin in the Design of Transition Metal-Based Bioresponsive Magnetic Resonance Imaging Probes and Metal–Organic Magnets**2015** B.S. in Chemistry, University of Iceland, Reykjavik, IcelandFaculty Advisor: Krishna K. Damodaran, Professor of ChemistryThesis: Synthesis, Characterization and Catalytic Investigation of Metal–Organic Frameworks Constructed from Salen Type Metalloligands**AWARDS & HONORS****2021** ACS DIC Young Investigator Award**2020–2022** Harvard University Center for the Environment Postdoctoral Fellow**2020** Best Poster Award, 6th International School for Young Scientists: Magnetic Resonance and Magnetic Phenomena in Chemical and Biological Physics**2020** CAS Future Leader**2019** Edmund W. Gelewitz Award for Excellence in Graduate Research and Service**2019** Northwestern University Research Safety Leadership Award**2019** WCC Merck Research Award**2018** Donald E. Smith Teaching Award**2017–2018** Leifur Eiriksson Foundation Scholarship**2017** Joseph Lambert Award for Excellence in Junior Graduate Research**2015** University of Iceland Outstanding Graduating Chemist Award**2014** California Institute of Technology Summer Undergraduate Research Fellowship Award**PUBLICATIONS**

ORCID: 0000-0001-9378-4454; *corresponding author(s); ‡undergraduate coauthor; #equal contributions

Before University of Rochester (Postdoctoral & Graduate Research)20. Yan, Z.; Reynolds, K. G.; Sun, R.; Shin, Y.; Thorarinsdottir, A. E.; Gonzalez, M. I.; Kudisch, B.; Galli, G.; Nocera, D. G.* “Oxidation Chemistry of Bicarbonate and Peroxybicarbonate: Implications for Carbonate Management in Energy Storage.” *J. Am. Chem. Soc.* **2023**, *Accepted*.19. Thorarinsdottir, A. E.#; Erdosy, D. P.#; Costentin, C.*; Mason, J. A.*; Nocera, D. G.* “Enhanced Activity for the Oxygen Reduction Reaction in Microporous Water.” *Nat. Catal.* **2023**, *6*, 425–434.

18. Veroneau, S. S.; **Thorarinsdottir, A. E.**; Loh, D. M.; Hartnett, A. C.; Keane, T. P.; Nocera, D. G.* “Electrolyte-Induced Restructuring of Acid-Stable Oxygen Evolution Catalysts.” *Chem. Mater.* **2023**, *35*, 3218–3225.
17. Nava, M.; **Thorarinsdottir, A. E.**; Lopez, N.; Cummins, C. C.*; Nocera, D. G.* “Chemical Challenges that the Peroxide Dianion Presents to Rechargeable Lithium–Air Batteries.” *Chem. Mater.* **2022**, *34*, 3883–3892 (invited article for Virtual Special Issue, “John Goodenough at 100”).
16. Veroneau, S. S.; Hartnett, A. C.; **Thorarinsdottir, A. E.**; Nocera, D. G.* “Direct Seawater Splitting by Forward Osmosis Coupled to Water Electrolysis.” *ACS Appl. Energy Mater.* **2022**, *5*, 1403–1408.
15. **Thorarinsdottir, A. E.**[#]; Veroneau, S. S.[#]; Nocera, D. G.* “Self-Healing Oxygen Evolution Catalysts.” *Nat. Commun.* **2022**, *13*, 1243 (invited article).
14. **Thorarinsdottir, A. E.**; Costentin, C.; Veroneau, S. S.; Nocera, D. G.* “p-Block Metal Oxide Noninnocence in the Oxygen Evolution Reaction in Acid: The Case of Bismuth Oxide.” *Chem. Mater.* **2022**, *34*, 826–835.
13. Wang, Y.; Ziebel, M. E.; Sun, L.; Gish, J. T.; Pearson, T. J.; Lu, X.-Z.; **Thorarinsdottir, A. E.**; Hersam, M. C.; Long, J. R.*; Freedman, D. E.*; Rondinelli, J. M.*; Puggioni, D.*; Harris, T. D.* “Strong Magnetocrystalline Anisotropy Arising from Metal–Ligand Covalency in a Metal–Organic Candidate for 2D Magnetic Order.” *Chem. Mater.* **2021**, *33*, 8712–8721.
12. **Thorarinsdottir, A. E.**; Nocera, D. G.* “Energy Catalysis Needs Ligands with High Oxidative Stability.” *Chem Catal.* **2021**, *1*, 32–43 (invited article for Inaugural Issue).
11. Margarit, C. G.; Asimow, N. G.; **Thorarinsdottir, A. E.**; Costentin, C.*; Nocera, D. G.* “Impactful Role of Cocatalysts on Molecular Electrocatalytic Hydrogen Production.” *ACS Catal.* **2021**, *11*, 4561–4567.
10. **Thorarinsdottir, A. E.**; Bjornsson, R.; Harris, T. D.* “Insensitivity of Magnetic Coupling to Ligand Substitution in a Series of Tetraoxolene Radical-Bridged Fe₂ Complexes.” *Inorg. Chem.* **2020**, *59*, 4634–4649.
9. **Thorarinsdottir, A. E.**; Harris, T. D.* “Metal–Organic Framework Magnets.” *Chem. Rev.* **2020**, *120*, 8716–8789 (invited article for Thematic Issue, “Porous Framework Chemistry”).
8. Wang, X.; **Thorarinsdottir, A. E.**; Bachrach, M.; Blayney, M. B.* “Building a Sustainable Student-Led Model to Promote Research Safety in Academic Laboratories.” *ACS Cent. Sci.* **2019**, *5*, 1900–1903.
7. Valdez-Moreira, J. A.; **Thorarinsdottir, A. E.**; DeGayner, J. A.; Lutz, S. A.; Chen, C.-H.; Losovyj, Y.; Pink, M.; Harris, T. D.*; Smith, J. M.* “Strong π -Backbonding Enables Record Magnetic Exchange Coupling Through Cyanide.” *J. Am. Chem. Soc.* **2019**, *141*, 17092–17097.
6. Du, K.; **Thorarinsdottir, A. E.**; Harris, T. D.* “Selective Binding and Quantitation of Calcium with a Cobalt-Based Magnetic Resonance Probe.” *J. Am. Chem. Soc.* **2019**, *141*, 7163–7172.
5. **Thorarinsdottir, A. E.**; Harris, T. D.* “Dramatic Enhancement in pH Sensitivity and Signal Intensity Through Ligand Modification of a Dicobalt PARACEST Probe.” *Chem. Commun.* **2019**, *55*, 794–797.
4. **Thorarinsdottir, A. E.**; Tatro, S. M.[‡]; Harris, T. D.* “Electronic Effects of Ligand Substitution in a Family of Co^{II}₂ PARACEST pH Probes.” *Inorg. Chem.* **2018**, *57*, 11252–11263.
3. Gaudette, A. I.; **Thorarinsdottir, A. E.**; Harris, T. D.* “pH-Dependent Spin State Population and ¹⁹F NMR Chemical Shift via Remote Ligand Protonation in an Iron(II) Complex.” *Chem. Commun.* **2017**, *53*, 12962–12965.
2. **Thorarinsdottir, A. E.**; Du, K.; Collins, J. H. P.; Harris, T. D.* “Ratiometric pH Imaging with a Co^{II}₂ MRI Probe via CEST Effects of Opposing pH Dependences.” *J. Am. Chem. Soc.* **2017**, *139*, 15836–15847.
1. **Thorarinsdottir, A. E.**; Gaudette, A. I.; Harris, T. D.* “Spin-Crossover and High-Spin Iron(II) Complexes as Chemical Shift ¹⁹F Magnetic Resonance Thermometers.” *Chem. Sci.* **2017**, *8*, 2448–2456.

PRESENTATIONS

Invited Talks

- **University of Rochester, Materials Research Society**, Rochester, NY, September 2023
Title: “The Thorarinsdottir Research Group: Advancing Electrochemical Properties via Synthetic Design”

Invited Talks Before University of Rochester

- **Northwestern University**, Safety Awareness Week, Keynote Speaker, Evanston, IL, April 2023
Title: “How RSSI Started and Importance of Research Safety”
- **University of Iceland**, Chemistry and Biochemistry Seminar Series, Reykjavik, Iceland, January 2023
Title: “New Approaches to Magnetic Resonance Imaging and Energy Catalysis Through Chemical Design”
- **University of Chicago**, Future Faculty Symposium, May 2022
Title: “Electrocatalytic Oxygen Evolution Reaction in Acid Using Earth Abundant Elements: The Case of Bismuth Oxide”
- **ACS National Meeting, Inorganic Young Investigator Awards Session**, Virtual, August 2021
Title: “Control of Electronic Spin in the Design of Transition Metal-Based Bioresponsive Magnetic Resonance Imaging Probes”
- **ACS National Meeting, WCC Merck Research Awards Symposium**, San Diego, CA, August 2019
Title: “Ratiometric Imaging of pH with Dicobalt PARACEST MRI Probes”

Other Conference Participation Before University of Rochester

- **Inorganic Chemistry GRS & GRC**, Newport, RI, May–June 2022
Title of poster: “Strategies Toward Increased Energy and Carbon Efficiency in Low-Temperature CO₂ Electrolysis”
- **Solar Fuels GRS & GRC**, Lucca, RI, May 2022
Title of poster: “Strategies Toward Increased Energy and Carbon Efficiency in Low-Temperature CO₂ Electrolysis”
- **ACS National Meeting**, San Diego, CA, March 2022
Title of talk: “p-Block Metal Oxide Noninnocence in the Oxygen Evolution Reaction in Acid”
- **Harvard University Chemistry and Chemical Biology Research Symposium**, Virtual, May 2021
Title of talk: “Main Group Metal Oxides as Oxygen Evolution Reaction Catalysts in Acid”
- **6th International School for Young Scientists: Magnetic Resonance and Magnetic Phenomena in Chemical and Biological Physics**, Virtual, September 2020
Title of talk: “Control of Electronic Spin in the Design of Transition Metal-Based Bioresponsive Magnetic Resonance Imaging Probes”
- **ACS National Meeting**, San Diego, CA, August 2019
Title of talk: “Fe^{II} Spin-Crossover Complexes as Temperature- and pH-Responsive ¹⁹F Chemical Shift Magnetic Resonance Probes”
- **Imaging in 2020**, Grand Teton National Park, WY, September 2018
Title of poster: “Quantitation of pH and Temperature with Transition Metal Complexes via Magnetic Resonance Imaging”
- **Inorganic Chemistry GRS & GRC**, Biddeford, ME, June 2018
Title of poster: “Quantitation of pH and Temperature with Transition Metal Complexes via Magnetic Resonance Imaging”
- **Hazard and Risk Management in the Laboratory – Laboratory Safety Workshop**, Chicago, IL, May 2018
Title of poster: “Graduate Student Led Safety Team: An Approach to Engage Researchers in Laboratory Safety”

MENTORED RESEARCHERS

Current Group: 4 BS/BA students

Present: Bryce Kneer (U3); James Kim (U3); Meiqin Gao (U4); Steven Riera (U3)

Alumni: Duong Minh Truong (i-Scholar, 2023)

SYNERGISTIC ACTIVITIES & SERVICE

Teaching Activities

At University of Rochester

- Group Theory (CHEM 415), Fall 2023 (2 credit hours)
- Physical Methods in Inorganic Chemistry (CHEM 424), Fall 2023 (2 credit hours)

Before University of Rochester

- Introductory Inorganic Chemistry (CHEM 40), Spring 2021, Harvard University (Head TA)
- Advanced Inorganic Chemistry (CHEM 435), Winter 2018 & 2019, Northwestern University (Head TA)
- General Chemistry (CHEM 101), Fall 2016, Northwestern University (TA)
- Organic Chemistry Laboratory (CHEM 232), 2015–2016, Northwestern University (TA)

National Activities

- Guest Editor, Special Issue of Supramolecular Chemistry for ISMSC 2023 (2023)
- Organizing Committee Member, 17th International Symposium on Macrocyclic and Supramolecular Chemistry (2023)

Reviewing Activities

- ACS Catalysis
- ACS Omega
- Acta Crystallographica
- Chemistry of Materials
- Chemical Science
- Inorganic Chemistry Frontiers
- Journal of the American Chemical Society
- Nature Catalysis

Professional Affiliations

- American Chemical Society, Division of Inorganic Chemistry (2020–present)
- American Chemical Society (2019–present)
- Phi Lambda Upsilon Graduate Chemistry Honor Society (2017–present)
- Icelandic Chemical Society (2015–present)

Prior Service & Outreach Activities

- Harvard University, Harvard University Women+ in Chemistry, Executive Board Member (2021–2023)
- Science Club for Girls, Cambridge, MA, Volunteer (2021–2023)
- Harvard University, Department of Chemistry & Chemical Biology, Peer Mentor (2021–2023)
- Harvard University, Department of Chemistry & Chemical Biology, SACNAS Conference Rep. (2021)
- Northwestern University, Career Day for Girls, Group Leader (2019)
- Northwestern University, Department of Chemistry, Graduate Student Recruitment Focus Group Member (2018–2019)
- Northwestern University, Department of Chemistry, Peer Mentor (2018–2019)
- Northwestern University, Phi Lambda Upsilon, Alpha Gamma Chapter, President (2018–2019)
- Northwestern University, EPIC Cleanup Day, Organizer (2018)
- Northwestern University, Phi Lambda Upsilon, Alpha Gamma Chapter, Secretary (2017–2018)
- Northwestern University, Sports & STEM Program, Group Leader (2017–2018)
- Northwestern University, Research Safety Student Initiative, Co-Founder & Vice President (2017–2019)
- Northwestern University, International Summer Institute, Volunteer (2017–2019)
- Northwestern University, Science in the Classroom Outreach Program, Group Leader (2016–2019)
- Northwestern University, Department of Chemistry, Teaching Assistant Training, Co-Organizer (2016–2019)