

V. Sara Thoi, Ph.D

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Education

- PhD Chemistry, Prof. Christopher J. Chang, *University of California, Berkeley*, 2008-2013
- BS Chemistry, *University of California, San Diego*, 2004-2008
Cum Laude Honors, High Distinction Honors (Chemistry), Economics Minor

Research Appointments

- Assistant Professor, *Dept. of Chemistry, Johns Hopkins University*, 2015-present
Development of novel materials for charge transport and energy conversion and storage.
- Postdoctoral Fellow, *Depts. of Materials Science and Chemical Engineering, Prof. Sossina M. Haile, California Institute of Technology*, 2013-2015
Intermediate temperature fuel cell technology mediated by microstructured catalysts and solid acid electrolyte. (Dow-Bridge Program, ARPA-E REBELS)

Publications

- 10) Thoi, V. S.; Usiskin, R. E.; Haile, S. M. Platinum-decorated carbon nanotubes for hydrogen oxidation and proton reduction in solid acid electrochemical cells. *Chem. Sci.*, **2015**, *6*, 1570-1577. *Top 25 Downloaded Chem. Sci. Article in the First Quarter of 2015.*
- 9) Khnayzer, R. S.*; Thoi, V. S.*; Nippe, M.; King, A. E.; Jurss, J. W.; El Roz, K. A.; Long, J. R.; Chang, C. J.; Castellano, F. N. Towards a Comprehensive Understanding of Visible-Light Photogeneration of Hydrogen from Water Using Cobalt(II) Polypyridyl Catalysts. *Energy Environ. Sci.*, **2014**, *7*, 1477-1488. *Joint first-author.
- 8) Thoi, V. S.*; Kornienko, N.*; Margarit, C. G.; Yang, P.; Chang, C. J. Visible-Light Photoredox Catalysis: Selective Reduction of Carbon Dioxide to Carbon Monoxide by a Nickel N-Heterocyclic Carbene-Isoquinoline Complex. *J. Am. Chem. Soc.*, **2013**, *135*, 14413–14424. *Joint first-author.
- 7) Thoi, V. S.; Sun, Y.; Long, J. R.; Chang, C. J. Complexes of earth-abundant metals for catalytic electrochemical hydrogen generation under aqueous conditions. *Chem. Soc. Rev.*, **2013**, *42*, 2388-2400.
- 6) Thoi, V. S.; Karunadasa, H. I.; Surendranath, Y.; Long, J. R.; Chang, C. J. Electrochemical generation of hydrogen from acetic acid using a molecular molybdenum-oxo catalyst. *Energy Environ. Sci.*, **2012**, *5*, 7762-7770.
- 5) Sundstrom, E. J.; Yang, X; Thoi, V. S.; Karunadasa, H. I.; Chang, C. J.; Long, J. R.; Head-Gordon, M. Computational and experimental study of the mechanism of hydrogen generation from water by a molecular molybdenum-oxo electrocatalyst. *J. Am. Chem. Soc.*, **2012**, *134*, 5233–5242.
- 4) Thoi, V. S.; Chang, C. J. Nickel N-heterocyclic carbene-pyridine complexes that exhibit selectivity for electrocatalytic reduction of carbon dioxide over water. *Chem. Comm.*, **2011**, *47*, 6578-6580.
- 3) Thoi, V. S.; Stork, J. R.; Niles, E. T.; Depperman, E. C.; Tierney, D. L; Cohen, S. M. Diamidodipyrrins: Versatile bipyrrrolic ligands with multiple binding modes. *Inorg. Chem.*, **2008**, *47*, 10533-10541.
- 2) Stork, J. R; Thoi, V. S.; Cohen, S. M. Rare examples of transition metal–main group metal heterometallic metal-organic frameworks from gallium and indium dipyrinato complexes and silver salts: synthesis and framework variability. *Inorg. Chem.*, **2007**, *46*, 11213-11223.
- 1) Thoi, V. S.; Stork, J. R.; Magde, D.; Cohen, S. M. Luminescent dipyrinato complexes of trivalent group 13 metal ions. *Inorg. Chem.* **2006**, *45*, 10688-10697.

Selected Presentations

- 5) Baumann, A. E.; Burns, D. A.; Thoi, V. S. "Engineering Molecular Materials for Energy Storage" ACS National Meeting, Spring, San Francisco, CA, April 2017. "Celebrating the Division of Inorganic Chemistry's 60th Birthday." **Invited oral presentation.**
- 4) Saund, S.; Han, X.; Ng, K.; Goldschmidt, S.; Thoi, V. S. "Understanding proton and CO₂ reduction by earth-abundant metal catalysts," ACS National Meeting, Spring, San Francisco, CA, April 2017. "Sustainability in Electrocatalytic Fuel and Chemical Production" Symposium. **Invited oral presentation.**
- 3) Baumann, A. E.; Roy, A.; Falk, M.; Thoi, V. S. "Engineering Molecular Materials for Applications in Energy Storage," MOF 2016, Long Beach, CA, September 2016. Oral presentation.
- 2) Baumann, A. E.; Roy, A.; Falk, M.; Thoi, V. S. "Engineering Molecular Materials for Application in Energy Storage," Young Investigator MOF Symposium 2016, San Diego, CA, September 2016. **Invited oral presentation.**
- 1) Thoi, V. S. "Porous Materials for Catalysis and Energy Storage Applications," Inorganic Chemistry Gordon Research Conference, Biddeford, ME, June 2016. Attendee.

Society Memberships

- Member, American Chemical Society, 2014-present

Awards/Honors

- Young Investigator Award, ACS Division of Inorganic Chemistry, 2014
- National Science Foundation Graduate Research Fellowship, 2009-2012
- Mayer Award for Excellence in Undergraduate Research, Dept. of Chemistry, UC San Diego, 2008
- Amgen Scholar, UCLA, 2007
- Regent's Scholar, UC San Diego, 2004-2008
- Provost's Honors, UC San Diego, 2004-2008
- Robert C. Byrd Honors Scholar, 2004-2008

Teaching

Assistant Professor, Johns Hopkins University

- 030.404 Electrochemistry for Energy Conversion and Storage
- 030.204 Structure and Bonding

Graduate Student Instructor, UC Berkeley

- Chem 3B/3BL Chemical Structure and Reactivity/Organic Chemistry Lab, Fall 2008
- Chem 103 Bioinorganic Chemistry, Fall 2009, Fall 2010

Community Service and Diversity Outreach

- *Team Leader – STEM Achievement in Baltimore Elementary Schools (SABES), JHU, October 2016*
- *Volunteer – JHU President’s Day of Service, Baltimore, MD, April 2016 and Oct 2016*
- *Speaker – Penn State Millenium Scholar Symposium for enhancing diversity in STEM fields, JHU, July 2016*
- *Speaker – UMBC Meyerhoff Scholar Symposium for enhancing diversity in STEM fields, JHU, July 2016*
- *Selected Attendee – Cottrell Scholars Collaborative Workshop: New Active Learning Strategies and Teaching Methods, ACS National Office, DC, August 2016*
- *Mentor – ChemWMN, support network for female chemists, 2016-present*
- *Volunteer – Maryland Science Olympiad State Tournament for MD middle and high schools, April 2016*
- *Judge – 3-Minute Thesis Competition, American Chemical Society, Maryland Section, November 2015*
- *Mentor – Caltech Summer Undergraduate Research Fellowship, Pasadena, California, 2014-2015*
- *Mentor – Motivating Our Students Through Experience (MOSTE) for young middle school girls at LA Leadership Academy, Los Angeles, California, 2014-2015*
- *Mentor – Women-Mentoring-Women (WMW) Program, Caltech, 2013-2015*
- *Lead Organizer – Green Chemistry by Sustainable Design Student Organization, Green Chemistry Seminar Series, UC Berkeley, 2009-2013*
- *Mentor – National Amgen Program, UC Berkeley, Summer 2012*
- *Instructor – “Winter Science Camp” for promoting STEM education, Community College of San Francisco, January 2011*
- *Lead co-organizer – Community in the Classroom (CIC), Montclair Elementary School, Oakland, November 2010*
- *Outreach Leader – Biodiesel Actions and Awareness Network (BAAN), UC San Diego, 2007-2008*
- *VP of Outreach – American Chemical Society Student Affiliates, UC San Diego, 2006-2007*
- *Volunteer – Expanding Your Horizons (EYH) for enhance female participation in STEM fields, UC San Diego, 2005*