



## Thomas Jaramillo

Professor of Chemical Engineering, of Energy Science Engineering, of Photon Science and Senior Fellow at the Precourt Institute for Energy

 Curriculum Vitae available Online

### CONTACT INFORMATION

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### Bio

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#### BIO

Recent years have seen unprecedented motivation for the emergence of new energy technologies. Global dependence on fossil fuels, however, will persist until alternate technologies can compete economically. We must develop means to produce energy (or energy carriers) from renewable sources and then convert them to work as efficiently and cleanly as possible. Catalysis is energy conversion, and the Jaramillo laboratory focuses on fundamental catalytic processes occurring on solid-state surfaces in both the production and consumption of energy. Chemical-to-electrical and electrical-to-chemical energy conversion are at the core of the research. Nanoparticles, metals, alloys, sulfides, nitrides, carbides, phosphides, oxides, and biomimetic organo-metallic complexes comprise the toolkit of materials that can help change the energy landscape. Tailoring catalyst surfaces to fit the chemistry is our primary challenge.

#### ACADEMIC APPOINTMENTS

- Professor, Chemical Engineering
- Professor, Energy Science & Engineering
- Professor, Photon Science Directorate
- Senior Fellow, Precourt Institute for Energy
- Affiliate, Precourt Institute for Energy

#### ADMINISTRATIVE APPOINTMENTS

- Director, SUNCAT Center for Interface Science and Catalysis, (2018- present)
- Deputy Director, SUNCAT Center for Interface Science and Catalysis, (2014-2018)

#### PROFESSIONAL EDUCATION

- PhD, University of California, Santa Barbara (2004)
- MS, University of California, Santa Barbara , Chemical Engineering (2000)
- BS, Stanford , Chemical Engineering (1998)

## LINKS

- <http://jaramillogroup.stanford.edu>: <http://jaramillogroup.stanford.edu>

## Teaching

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### COURSES

#### 2025-26

- Electrochemical Energy Conversion: CHEMENG 432, ENERGY 432 (Win)
- Fundamentals and Applications of Spectroscopy: CHEMENG 345 (Spr)

#### 2023-24

- Electrochemical Energy Conversion: CHEMENG 432, ENERGY 432 (Aut)
- Fundamentals and Applications of Spectroscopy: CHEMENG 345 (Spr)

#### 2022-23

- Chemical Process Modeling, Dynamics, and Control: CHEMENG 100 (Win)
- Fundamentals and Applications of Spectroscopy: CHEMENG 345 (Spr)
- Special Topics in Energy and Catalysis: CHEMENG 516 (Aut)

### STANFORD ADVISEES

#### Doctoral Dissertation Reader (AC)

Alex Fontani Herreros, Maggy Harake, Karl Persson

#### Postdoctoral Faculty Sponsor

Hussein Osama Mohamed Badr Badr, Marzia Cavallo, Fabio Colasuonno, Ezgi Erdem, Roman Fanta, Hyeonjung Jung, Manish Kumar Kothakonda, Sang-Won Lee, Zan Lian, Ruchika Mahajan, Shyama Mandal, Dongjae Shin, Michael Tang, Jennifer Urbine, Zhixing Wu, Yuanzi Xu, Judith Zander, Zisheng Zhang, Peng Zhu

#### Doctoral Dissertation Advisor (AC)

Ashton Aleman, Kathleen Bailey, Yamile Cornejo Carrillo, Colin Crago, Hannah McCollum, Isa Rios Amador, Yamilet Rivera Cintrón, Milenia Rojas Mendoza, Alfred Vargas, Wrayzene Willoughby, Katherine Yan

#### Doctoral Dissertation Co-Advisor (AC)

James Licato

#### Doctoral (Program)

Oliver Horner

#### Postdoctoral Research Mentor

Sang-Won Lee

## Publications

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### PUBLICATIONS

- **Defect-rich CuO/SnO<sub>2</sub> hybrid nanowires with tailored heterointerfaces for selective electrochemical CO<sub>2</sub> reduction** *APPLIED CATALYSIS B-ENVIRONMENT AND ENERGY*  
Sivanantham, A., Kapse, S., Hwang, S., Lee, D., Jung, Y., Han, H., Kim, S., Jang, H., Jaramillo, T. F., Han, G., Cho, I.  
2026; 392

- **In Situ Activity-Durability Measurements of Cobalt during O<sub>2</sub>/H<sub>2</sub> Electro catalysis: pH/Potential-Dependent Surface Transformations** *ACS ENERGY LETTERS*  
Aleman, A. M., Crago, C. F., Reyes, C. H., Jaramillo, T. F.  
2026
- **Design of Experiments Guided Identification of Coupled Component Interactions in Cu Gas Diffusion Electrodes for Electrochemical CO<sub>2</sub> Reduction to Multi-Carbon Products** *ADVANCED ENERGY MATERIALS*  
Lee, J., Oh, D., Curulla-Ferre, D., Jenny, J., Jeon, B., Chang, M., Lee, S., Lee, T., Shim, J., Xu, Y., Reising, S., Yan, K., Yu, et al  
2026
- **Surface coatings to mitigate phase separation in LiFePO<sub>4</sub> during lithium-ion battery discharge** *MATTER*  
Benedek, P., Zhao, X., Bileter, E., Moser, A., Forslund, O., Matsubara, N., Nocerino, E., Cottrell, S., Medarde, M., Sassa, Y., Shunmugasundaram, R., Jaramillo, T., Borgschulte, et al  
2026; 9 (6)
- **Dependence of catalytic properties of strongly supported platinum clusters with atom counts.** *Science (New York, N.Y.)*  
Song, C. K., Jung, J., Mandal, S. C., Kang, S., Kim, T. Y., Kim, C., Jang, G., Kim, H., Kim, Y., Lee, K. R., Kim, J. S., Chen, J., Kim, et al  
2026; 392 (6801): 958-965
- **NiFeCo-based catalysts in high current zero-gap anion exchange membrane water electrolyzers** *EES CATALYSIS*  
Milenia Rojas Mendoza, B., Hannagan, R. T., Kimuyu, S., Crago, C. F., Vargas, A., Aleman, A. M., Schroder, J., Marin, D. H., Amador, I., Shim, J., Nielander, A. C., Stevens, M., Jaramillo, et al  
2026
- **Optimized Tandem Catalyst Patterning for CO<sub>2</sub> Reduction Flow Reactors** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Guo, J., Roy, T., Govindarajan, N., Varley, J. B., Raisin, J., Lee, J., Jang, J., Lee, D., Jaramillo, T. F., Lin, T. Y.  
2026; 173 (8)
- **Ternary and Quaternary Nickel-Iron-Oxide-Based Thin Films as Oxygen Evolution Reaction Catalysts in Alkaline Media** *ACS CATALYSIS*  
Schroder, J., D'Acunto, G., Persson, K. A., Aleman, A. M., Ponte, E. L., Bent, S. F., Jaramillo, T. F.  
2026
- **Multimodal *In Situ* Investigation of Anion-Dependent Surface Dynamics of Pd Electrocatalysts during the Oxygen Reduction Reaction in Acidic Media** *ACS CATALYSIS*  
Vargas, A., Kamat, G. A., Zander, J., Aleman, A. M., Schroeder, J., Hannagan, R. T., Mule, A. S., Rojas Mendoza, M., Crago, C. F., Marin, D. H., Benedek, P., Perryman, J. T., Wei, et al  
2026
- **Translating Fundamental Insights into Ag-Based Bimetallic Electrocatalysts to Anion-Exchange Membrane Fuel Cells** *ACS ENERGY LETTERS*  
Schroder, J., Douglin, J. C., Zamora Zeledon, J. A., Aleman, A. M., Liu, M. J., Guo, J., Miller, D., Stone, K. H., Tarpeh, W. A., Dekel, D. R., Gunasooriya, G., Burke Stevens, M., Jaramillo, et al  
2026
- **Electrochemical Ocean-Based Carbon Capture: Roadblocks to Scale-Up** *ACS ENERGY LETTERS*  
Marquez, R. A., Nielander, A. C., Resasco, J., Jaramillo, T. F., Mullins, C.  
2026
- **MoS<sub>2</sub> Degradation Dynamics under Simulated Diurnal (Photo)electrochemical H<sub>2</sub> Evolution Reaction Conditions.** *Journal of the American Chemical Society*  
Yap, K. M., Swathilakshmi, S., Lin, T., Aleman, A. M., Yan, K., Hannagan, R. T., Mule, A. S., Wang, C. Y., Lee, S. W., Zander, J., Qiu, J., Jaramillo, T. F., Nielander, et al  
2026
- **Unveiling the mechanism of lithium-mediated nitrogen reduction *via operando* X-ray scattering in a flow cell with hydrogen oxidation** *ENERGY & ENVIRONMENTAL SCIENCE*  
Deissler, N. H., Mygind, J. V., Niemann, V. A., Pedersen, J. B., Vinci, V., Li, S., Fu, X., Jaramillo, T. F., Kibsgaard, J., Drnec, J., Chorkendorff, I.  
2026
- **Coupled Microenvironments for Artificial Photosynthesis of a C<sub>6</sub> Oxygenated Product from CO<sub>2</sub>** *ACS ENERGY LETTERS*

Salazar, M., Aitbekova, A., Yan, K., Lee, D., Peters, J. C., Jaramillo, T. F., Atwater, H. A., Agapie, T., Bell, A. T.  
2026

- **Insights into the Acid Stability of Cobalt Electrocatalysts via Time-Resolved Activity-Durability Relationships for Tailored Bimetallic Thin Films** *ADVANCED ENERGY MATERIALS*  
Aleman, A. M., Crago, C. F., Vargas, A., Reyes, C. H., Badr, H. O., Zander, J., Mule, A. S., Hannagan, R. T., Oriowo, O. A., Mendoza, B., Stevens, M., Jaramillo, T. F.  
2025
- **Metalloporphyrin organic polymers as effective and stable electrocatalysts for the oxygen and hydrogen evolution reactions** *MOLECULAR CATALYSIS*  
Ge, Y., Ocuane, N., Denning, A., Wu, Y., Sanchez, J., Ramos-Garces, M., Colon, J. L., Jaramillo, T. F., Villagran, D.  
2025; 587
- **Bridging artificial intelligence with photovoltaics** *CELL REPORTS PHYSICAL SCIENCE*  
Lee, S., Lee, S., Lee, S., Hwang, J., Oh, W., Winther, K., Lee, D., Kim, D., Nielander, A. C., Jaramillo, T. F., Kang, Y., Lee, H.  
2025; 6 (11)
- **Diagnosing mechanisms to mitigate anion exchange ionomer degradation during impure water electrolysis** *ENERGY & ENVIRONMENTAL SCIENCE*  
Rios Amador, I., Hannagan, R. T., Qiang, A., Lee, S., Thi Thu Tran, N., Yap, K. M. K., Aleman, A. M., Marin, D. H., Mendoza, M., Stevens, M., Jaramillo, T. F., Nielander, A. C.  
2025
- **Stabilization of molybdenum in CMP: Operando insights into distinct inhibitor adsorption pathways** *JOURNAL OF ELECTROANALYTICAL CHEMISTRY*  
Choi, S., Lee, D., Kreider, M. E., Nielander, A. C., Stevens, M., Park, D., Hong, I., Park, K., Bae, K., Kim, H., Yoon, B., Kim, S., Jaramillo, et al  
2025; 996
- **Durable, pure water-fed, anion-exchange membrane electrolyzers through interphase engineering.** *Science (New York, N.Y.)*  
Hou, S., Sekar, A., Zhao, Y., Kwak, M., Oh, J., Li, K. K., Wu, P., Hannagan, R. T., Cartagena, V., Ekennia, A. C., Duan, H., Zachman, M. J., Frechette, et al  
2025; 390 (6770): 294-298
- **A research database for experimental electrocatalysis: Advancing data sharing and reusability.** *The Journal of chemical physics*  
Mahajan, R., Aleman, A. M., Crago, C. F., Bhasker-Ranganath, S., Kreider, M. E., Zamora Zeledon, J. A., Schröder, J., Kamat, G. A., Hubert, M. A., Nielander, A. C., Jaramillo, T. F., Stevens, M. B., Voss, et al  
2025; 163 (12)
- **Controlling Chloride Crossover in Bipolar Membrane Water Electrolysis.** *ACS electrochemistry*  
Rochow, M. F., Marin, D. H., Cassidy, H. J., Hannagan, R. T., Yan, K., Perryman, J. T., Nielander, A. C., Jaramillo, T. F., Hickner, M. A.  
2025; 1 (9): 1812-1820
- **Titanium-, Nitrogen-Doped Carbon Flowers Catalyze Electrochemical Nitrate Reduction Reaction to Ammonia.** *Journal of the American Chemical Society*  
Liu, M. J., Fernández Otero, C. A., Patino, D. U., Gong, H., Hossain, M. D., Matthews, J. E., Williams, K. S., Vargas, A., Zachman, M. J., Hoffman, A. S., Nordlund, D., Bajdich, M., Bare, et al  
2025
- **Atomic layer deposition of nickel sulfide thin films and their thermal and electrochemical stability** *JOURNAL OF MATERIALS CHEMISTRY A*  
Mattinen, M., Schroeder, J., Hatanpaeae, T., Popov, G., Mizohata, K., Leskelae, M., Jaramillo, T. F., Stevens, M., Bent, S. F., Ritala, M.  
2025
- **In Situ Techniques to Understand the Potential- and pH-Dependent Dynamics of Cobalt, Cobalt Nitride, and Mixed Cobalt-Antimony Thin Film Catalysts for Electrochemical Oxygen Reduction** *ACS APPLIED ENERGY MATERIALS*  
Crago, C. F., Aleman, A. M., Kamat, G. A., Mule, A. S., Hannagan, R. T., Zhang, S., Stevens, M., Jaramillo, T. F.  
2025
- **Cooperative effects associated with high electrolyte concentrations in driving the conversion of CO<sub>2</sub> to C<sub>2</sub>H<sub>4</sub> on copper** *CHEM CATALYSIS*  
Lin, S., Fishler, Y., Kwon, S., Bohme, A. E., Nie, W., Richter, M. H., Yang, M., Matthews, J. E., Iton, Z. W. B., Lee, B. C., Jaramillo, T. F., Atwater, H. A., Goddard, et al

2025; 5 (6)

- **Insights into catalyst degradation during alkaline water electrolysis under variable operation** *ENERGY & ENVIRONMENTAL SCIENCE*  
Marquez, R. A., Bender, J. T., Aleman, A. M., Kalokowski, E., Vy Le, T., Williamson, C. L., Frederiksen, M., Kawashima, K., Chukwunke, C. E., Dolocan, A., Milliron, D. J., Resasco, J., Jaramillo, et al  
2025
- **Alleviating Parasitic Back Energy Transfer Enhances Thin Film Upconversion** *ADVANCED OPTICAL MATERIALS*  
Narayanan, P., Hu, M., Pucurimay, L., Gallegos, A. O., Zhou, Q., Belliveau, E., Ahmed, G. H., Fernandez, S., Michaels, W., Murrietta, N., Mutatu, V. E., Feng, D., Hamid, et al  
2025
- **CO<sub>2</sub> Oxidative Ethane Dehydrogenation on CeO<sub>2</sub>/SiO<sub>2</sub>-Supported NiFe<sub>3</sub> Catalysts** *CHEMCATCHEM*  
Spurlock, R., Erdem, E., Lee, S., Chen, J., Gallo, A., Nielander, A. C., Jaramillo, T. F.  
2025
- **Tracking Local pH Dynamics during Water Electrolysis via In-Line Continuous Flow Raman Spectroscopy** *ACS ENERGY LETTERS*  
Marquez, R. A., Bender, J. T., da Cunha, S. C., Aleman, A. M., Sahu, A., Ganesan, V., Milliron, D. J., Resasco, J., Jaramillo, T. F., Mullins, C.  
2025
- **In Situ Neutron Reflectometry Reveals the Interfacial Microenvironment Driving Electrochemical Ammonia Synthesis.** *Journal of the American Chemical Society*  
Niemann, V. A., Doucet, M., Benedek, P., Deissler, N. H., Mygind, J. B., Lee, S. W., Rios Amador, I., Willoughby, W. L., Chorkendorff, I., Nielander, A. C., Tarpeh, W. A., Jaramillo, T. F.  
2025
- **Unassisted electrochemical H<sub>2</sub>O<sub>2</sub> production coupled to glycerol oxidation** *NATURE SYNTHESIS*  
Oh, D., Hwang, S., Kim, D., Matthews, J. E., Lee, J., Acosta, J., Lee, S., Xu, Y., Cho, A., Lee, D., Jaramillo, T. F., Seo, D., Jang, et al  
2025
- **Temperature-dependent solid electrolyte interphase reactions drive performance in lithium-mediated nitrogen reduction to ammonia** *JOULE*  
Benedek, P., Cornejo-Carrillo, Y. E., O'Rafferty, A. H., Niemann, V. A., Lee, S., Mcshane, E. J., Cargnello, M., Niel, A. C., Jaramillo, T. F.  
2025; 9 (3)
- **Multimodal In Situ Characterization Uncovers Unexpected Stability of a Cobalt Electrocatalyst for Acidic Sustainable Energy Technologies.** *Journal of the American Chemical Society*  
Aleman, A. M., Crago, C. F., Kamat, G. A., Mule, A. S., Avilés Acosta, J. E., Matthews, J. E., Keyes, N., Hannagan, R. T., Nielander, A. C., Stevens, M. B., Jaramillo, T. F.  
2025
- **On-line Inductively Coupled Plasma Mass Spectrometry Reveals Material Degradation Dynamics of Au and Cu Catalysts during Electrochemical CO<sub>2</sub> Reduction.** *Journal of the American Chemical Society*  
Yan, K., Lee, S. W., Yap, K. M., Mule, A. S., Hannagan, R. T., Matthews, J. E., Kamat, G. A., Lee, D. U., Stevens, M. B., Nielander, A. C., Jaramillo, T. F.  
2025
- **Effects of Iron Impurities and Content on Electrochemical Performance and Oxygen Evolution Selectivity of Nickel Catalysts for Ethanol Oxidation.** *Journal of the American Chemical Society*  
Crago, C. F., Li, S., Aleman, A. M., Siboonruang, T., Rojas Mendoza, M., Jaramillo, T. F., Stevens, M. B.  
2025
- **Extracting Thin Film Structures of Energy Materials Using Transformers.** *ACS physical chemistry Au*  
Zhang, C., Niemann, V. A., Benedek, P., Jaramillo, T. F., Doucet, M.  
2025; 5 (1): 30-37
- **Platinum hydride formation during cathodic corrosion in aqueous solutions.** *Nature materials*  
Hersbach, T. J., Garcia-Esparza, A. T., Hanselman, S., Paredes Mellone, O. A., Hoogenboom, T., McCrum, I. T., Anastasiadou, D., Feaster, J. T., Jaramillo, T. F., Vinson, J., Kroll, T., Garcia, A. C., Krttil, et al  
2025

- **Structural Transformation and Degradation of Cu Oxide Nanocatalysts during Electrochemical CO<sub>2</sub> Reduction.** *Journal of the American Chemical Society*  
Lee, S. H., Avilés Acosta, J. E., Lee, D., Larson, D. M., Li, H., Chen, J., Lee, J., Erdem, E., Lee, D. U., Blair, S. J., Gallo, A., Zheng, H., Nielander, et al  
2025
- **Operando Surface-Enhanced Infrared Spectroscopy Connects Interfacial Dynamics with Reaction Kinetics During Electrochemical CO<sub>2</sub> Reduction on Copper** *ACS CATALYSIS*  
Matthews, J. E., Acosta, J., Lee, S., Oh, D., Lin, T. Y., Yap, K. M. K., Chen, J., Jang, J., Lee, D., Nielander, A. C., Jaramillo, T. F.  
2024
- **Dynamics of precatalyst conversion and iron incorporation in nickel-based alkaline oxygen evolution reaction catalysts** *CELL REPORTS PHYSICAL SCIENCE*  
Mattinen, M., Schroder, J., D'Acunto, G., Ritala, M., Jaramillo, T. F., Stevens, M., Bent, S. F.  
2024; 5 (11)
- **Extracting Thin Film Structures of Energy Materials Using Transformers** *ACS PHYSICAL CHEMISTRY AU*  
Zhang, C., Niemann, V. A., Benedek, P., Jaramillo, T. F., Doucet, M.  
2024
- **Electrodialysis and nitrate reduction (EDNR) to enable distributed ammonia manufacturing from wastewaters** *ENERGY & ENVIRONMENTAL SCIENCE*  
Guo, J., Liu, M. J., Laguna, C., Miller, D. M., Williams, K. S., Clark, B. D., Munoz, C., Blair, S. J., Nielander, A. C., Jaramillo, T. F., Tarpeh, W. A.  
2024
- **In Situ ORR Dynamics of Non-Precious Transition Metal Electrocatalysts: the Case of Manganese Antimony X-ides** *ACS CATALYSIS*  
Kamat, G. A., Kreider, M. E., Schroder, J., Dukuly Jr, R. B., Perryman, J. T., Joensen, B. O., Matthews, J. E., Aleman, A. M., Stevens, M., Jaramillo, T. F.  
2024
- **Homogeneously Mixed Cu-Co Bimetallic Catalyst Derived from Hydroxy Double Salt for Industrial-Level High-Rate Nitrate-to-Ammonia Electrosynthesis.** *Journal of the American Chemical Society*  
Jang, W., Oh, D., Lee, J., Kim, J., Matthews, J. E., Kim, H., Lee, S. W., Lee, S., Xu, Y., Yu, J. M., Hwang, S. W., Jaramillo, T. F., Jang, et al  
2024
- **CO<sub>2</sub> Conversion to Butene via a Tandem Photovoltaic-Electrochemical/Photothermocatalytic Process: A Co-design Approach to Coupled Microenvironments** *ACS ENERGY LETTERS*  
Yap, K. M. K., Aitbekova, A., Salazar, M., Kistler, T. A., Pabon, M., Su, M. P., Watkins, N. B., Lee, S., Agbo, P., Weber, A. Z., Peters, J. C., Agapie, T., Nielander, et al  
2024
- **Advancing Insights into Electrochemical Pre-Treatments of Supported Nanoparticle Electrocatalysts by Combining a Design of Experiments Strategy with In Situ Characterization** *ADVANCED ENERGY MATERIALS*  
Mule, A. S., Tran, K., Aleman, A. M., Cornejo-Carrillo, Y. E., Kamat, G. A., Stevens, M., Jaramillo, T. F.  
2024
- **Author Correction: Alkali cation-induced cathodic corrosion in Cu electrocatalysts.** *Nature communications*  
Liu, S., Li, Y., Wang, D., Xi, S., Xu, H., Wang, Y., Li, X., Zang, W., Liu, W., Su, M., Yan, K., Nielander, A. C., Wong, et al  
2024; 15 (1): 6092
- **Understanding the Effects of Anode Catalyst Conductivity and Loading on Catalyst Layer Utilization and Performance for Anion Exchange Membrane Water Electrolysis.** *ACS catalysis*  
Kreider, M. E., Yu, H., Osmieri, L., Parimuha, M. R., Reeves, K. S., Marin, D. H., Hannagan, R. T., Volk, E. K., Jaramillo, T. F., Young, J. L., Zelenay, P., Alia, S. M.  
2024; 14 (14): 10806-10819
- **Understanding the Effects of Anode Catalyst Conductivity and Loading on Catalyst Layer Utilization and Performance for Anion Exchange Membrane Water Electrolysis** *ACS CATALYSIS*  
Kreider, M. E., Yu, H., Osmieri, L., Parimuha, M. R., Reeves, K. S., Marin, D. H., Hannagan, R. T., Volk, E. K., Jaramillo, T. F., Young, J. L., Zelenay, P., Alia, S. M.  
2024

- **Sub-volt conversion of activated biochar and water for H<sub>2</sub> production near equilibrium via biochar-assisted water electrolysis** *CELL REPORTS PHYSICAL SCIENCE*  
Kani, N. C., Chauhan, R., Olusegun, S. A., Sharan, I., Katiyar, A., House, D. W., Lee, S., Jairamsingh, A., Bhawnani, R. R., Choi, D., Nielander, A. C., Jaramillo, T. F., Lee, et al  
2024; 5 (6)
- **Alkali cation-induced cathodic corrosion in Cu electrocatalysts.** *Nature communications*  
Liu, S., Li, Y., Wang, D., Xi, S., Xu, H., Wang, Y., Li, X., Zang, W., Liu, W., Su, M., Yan, K., Nielander, A. C., Wong, et al  
2024; 15 (1): 5080
- **Tuning Two-Dimensional Phthalocyanine Dual Site Metal-Organic Framework Catalysts for the Oxygen Reduction Reaction.** *Journal of the American Chemical Society*  
Wei, L., Hossain, M. D., Chen, G., Kamat, G. A., Kreider, M. E., Chen, J., Yan, K., Bao, Z., Bajdich, M., Stevens, M. B., Jaramillo, T. F.  
2024
- **Biogenic Manganese Oxide Synthesized by a Marine Bacterial Multicopper Oxidase MnxG Reveals Oxygen Evolution Activity** *ACS CATALYSIS*  
Fu, W., Hyler, F. P., Sanchez, J., Jaramillo, T. F., Velazquez, J. M., Tao, L., Britt, R.  
2024
- **Operando investigations of the solid electrolyte interphase in the lithium mediated nitrogen reduction reaction** *ENERGY & ENVIRONMENTAL SCIENCE*  
Deissler, N. H., Mygind, J. V., Li, K., Niemann, V. A., Benedek, P., Vinci, V., Li, S., Fu, X., Vesborg, P. C. K., Jaramillo, T. F., Kibsgaard, J., Drnec, J., Chorkendorff, et al  
2024
- **Modeling Planar Electrodes and Zero-Gap Membrane Electrode Assemblies for CO<sub>2</sub> Electrolysis** *CHEMELECTROCHEM*  
Ehlinger, V. M., Lee, D., Lin, T. Y., Duoss, E. B., Baker, S. E., Jaramillo, T. F., Hahn, C.  
2024; 11 (7)
- **Bias-free solar NH<sub>3</sub> production by perovskite-based photocathode coupled to valorization of glycerol** *NATURE CATALYSIS*  
Tayyebi, A., Mehrotra, R., Al Mubarak, M., Kim, J., Zafari, M., Tayyebi, M., Oh, D., Lee, S., Matthews, J. E., Lee, S., Shin, T., Lee, G., Jaramillo, et al  
2024
- **Interpretable Machine Learning Models for Practical Antimonate Electrocatalyst Performance.** *Chemphyschem : a European journal of chemical physics and physical chemistry*  
Deo, S., Kreider, M., Kamat, G., Hubert, M., Zamora Zeledón, J., Wei, L., Matthews, J., Keyes, N., Singh, I., Jaramillo, T., Abild-Pedersen, F., Burke Stevens, M., Winther, et al  
2024: e202400010
- **Modeling diurnal and annual ethylene generation from solar-driven electrochemical CO<sub>2</sub> reduction devices** *ENERGY & ENVIRONMENTAL SCIENCE*  
Yap, K. M. K., Wei, W. J., Pabon, M., King, A. J., Bui, J. C., Wei, L., Lee, S., Weber, A. Z., Bell, A. T., Nielander, A. C., Jaramillo, T. F.  
2024
- **Modeling Planar Electrodes and Zero-Gap Membrane Electrode Assemblies for CO<sub>2</sub> Electrolysis** *CHEMELECTROCHEM*  
Ehlinger, V. M., Lee, D., Lin, T. Y., Duoss, E. B., Baker, S. E., Jaramillo, T. F., Hahn, C.  
2024
- **Multi-scale physics of bipolar membranes in electrochemical processes** *NATURE CHEMICAL ENGINEERING*  
Bui, J. C., Lees, E. W., Marin, D. H., Stovall, T., Chen, L., Kusoglu, A., Nielander, A. C., Jaramillo, T. F., Boettcher, S. W., Bell, A. T., Weber, A. Z.  
2024; 1 (1): 45-60
- **Controlling Mass Transport in Direct Carbon Dioxide Zero-Gap Electrolyzers via Cell Compression** *ACS SUSTAINABLE CHEMISTRY & ENGINEERING*  
Lee, D., Joensen, B., Jenny, J., Ehlinger, V. M., Lee, S., Abiose, K., Xu, Y., Sarkar, A., Lin, T. Y., Hahn, C., Jaramillo, T. F.  
2023; 11 (46): 16661-16668
- **High-performance ionomerless cathode anion-exchange membrane fuel cells with ultra-low-loading Ag-Pd alloy electrocatalysts** *NATURE ENERGY*  
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