Stanford

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

- **Administrative Contact**

  Sheetal Singhal - Administrative Assistant

  Email sheetals@stanford.edu

  Tel 650-926-3434/408-921-6499

Bio

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

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, Suman Bhasker Ranganath, 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, Jesse Matthews, Hannah McCollum, Isa Rios Amador, Yamilet Rivera Cintrón, Milenia Rojas Mendoza, Alfred Vargas, Wrayzene Willoughby, Katherine Yan, Sihe Zhang

Doctoral Dissertation Co-Advisor (AC)

James Licato

Doctoral (Program)

Oliver Horner

Postdoctoral Research Mentor

Sang-Won Lee

Publications

PUBLICATIONS

- **Defect-rich CuO/SnO₂ hybrid nanowires with tailored heterointerfaces for selective electrochemical CO₂ 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

- **Optimized Tandem Catalyst Patterning for CO₂ 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)
- **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
- **MoS2 Degradation Dynamics under Simulated Diurnal (Photo)electrochemical H2 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 C₆ Oxygenated Product from CO₂** *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., Cassady, 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 CO₂ to C₂H₄ 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., Chukwuneke, 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

- **CO₂ Oxidative Ethane Dehydrogenation on CeO₂/SiO₂-Supported NiFe₃ 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 H₂O₂ 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 CO2 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

- **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., Krtil, et al
  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

- **Structural Transformation and Degradation of Cu Oxide Nanocatalysts during Electrochemical CO2 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 CO₂ 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
- **CO₂ 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 H2 2 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 CO₂ 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 NH₃ production by perovskite-based photocathode coupled to valorization of glycerol** *NATURE CATALYSIS*
  Tayyebi, A., Mehrotra, R., Al Mubarok, M., Kim, J., Zafari, M., Tayebi, 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 CO₂ 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 CO₂ 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*
  Douglin, J. C., Zeledon, J., Kreider, M. E., Singh, R. K., Stevens, M., Jaramillo, T. F., Dekel, D. R.
  2023
- **Protocol for assembling and operating bipolar membrane water electrolyzers.** *STAR protocols*
  Rios Amador, I., Hannagan, R. T., Marin, D. H., Perryman, J. T., Rémy, C., Hubert, M. A., Lindquist, G. A., Chen, L., Stevens, M. B., Boettcher, S. W., Nielander, A. C., Jaramillo, T. F.
  2023; 4 (4): 102606
- **Calcium-mediated nitrogen reduction for electrochemical ammonia synthesis.** *Nature materials*
  Fu, X., Niemann, V. A., Zhou, Y., Li, S., Zhang, K., Pedersen, J. B., Saccoccio, M., Andersen, S. Z., Enemark-Rasmussen, K., Benedek, P., Xu, A., Deissler, N. H., Mygind, et al
  2023
- **Quantifying Influence of the Solid-Electrolyte Interphase in Ammonia Electrosynthesis** *ACS ENERGY LETTERS*
  Mcshane, E. J., Niemann, V. A., Benedek, P., Fu, X., Nielander, A. C., Chorkendorff, I., Jaramillo, T. F., Cargnello, M.
  2023
- **Development of a versatile electrochemical cell for in situ grazing-incidence X-ray diffraction during non-aqueous electrochemical nitrogen reduction.** *Journal of synchrotron radiation*
  Blair, S. J., Nielander, A. C., Stone, K. H., Kreider, M. E., Niemann, V. A., Benedek, P., McShane, E. J., Gallo, A., Jaramillo, T. F.
  2023
- **Carbon flowers as electrocatalysts for the reduction of oxygen to hydrogen peroxide** *NANO RESEARCH*
  Gong, H., Wei, L., Chen, S., Chen, Z., Jaramillo, T. F., Bao, Z.
  2023
- **Electrochemical Flow Reactor Design Allows Tunable Mass Transport Conditions for Operando Surface Enhanced Infrared Absorption Spectroscopy** *CHEMCATCHEM*
  Acosta, J. E., Lin, J. C. C., Un Lee, D., Jaramillo, T. F. F., Hahn, C.

2023

- **Mechanistic Insights into Aldehyde Production from Electrochemical CO2 Reduction on CuAg Alloy via Operando X-ray Measurements** *ACS CATALYSIS*
  Qiao, Y., Kastlunger, G., Davis, R. C., Rodriguez, C., Vishart, A., Deng, W., Xu, Q., Li, S., Benedek, P., Chen, J., Schro"der, J., Perryman, J., Lee, et al
  2023: 9379-9391

- **Combined, time-resolved, in situ neutron reflectometry and X-ray diffraction analysis of dynamic SEI formation during electrochemical N-2 reduction** *ENERGY & ENVIRONMENTAL SCIENCE*
  Blair, S. J., Doucet, M., Niemann, V. A., Stone, K. H., Kreider, M. E., Browning, J. F., Halbert, C. E., Wang, H., Benedek, P., McShane, E. J., Nielander, A. C., Gallo, A., Jaramillo, et al
  2023

- **A framework for understanding efficient diurnal CO2 reduction using Si and GaAs photocathodes** *CHEM CATALYSIS*
  Yap, K. M. K., Lee, S., Steiner, M. A., Acosta, J., Kang, D., Kim, D., Warren, E. L., Nielander, A. C., Jaramillo, T. F.
  2023; 3 (6)

- **Tracking the Dynamics of a Ag-MnO x Oxygen Reduction Catalyst Using In Situ and Operando X-ray Absorption Near-Edge Spectroscopy** *ACS ENERGY LETTERS*
  Schroder, J., Zamora Zeledon, J. A., Kamat, G. A., Kreider, M. E., Wei, L., Mule, A. S., Torres, A., Yap, K., Sokaras, D., Gallo, A., Stevens, M., Jaramillo, T. F.
  2023

- **Hydrogen production with seawater-resilient bipolar membrane electrolyzers** *JOULE*
  Marin, D. H., Perryman, J. T., Hubert, M. A., Lindquist, G. A., Chen, L., Aleman, A. M., Kamat, G. A., Niemann, V. A., Stevens, M., Regmi, Y. N., Boettcher, S. W., Nielander, A. C., Jaramillo, et al
  2023; 7 (4): 765-781

- **Insights into Active Sites and Mechanisms of Benzyl Alcohol Oxidation on Nickel-Iron Oxyhydroxide Electrodes** *ACS CATALYSIS*
  Wei, L., Hossain, M., Boyd, M. J., Aviles-Acosta, J., Kreider, M. E., Nielander, A. C., Stevens, M., Jaramillo, T. F., Bajdich, M., Hahn, C.
  2023: 4272-4282

- **Understanding the Stability of Manganese Chromium Antimonate Electrocatalysts through Multimodal In Situ and Operando Measurements.** *Journal of the American Chemical Society*
  Kreider, M. E., Kamat, G. A., Zamora Zeledón, J. A., Wei, L., Sokaras, D., Gallo, A., Stevens, M. B., Jaramillo, T. F.
  2022

- **A Versatile Li0.5FePO4 Reference Electrode for Nonaqueous Electrochemical Conversion Technologies** *ACS ENERGY LETTERS*
  McShane, E. J., Benedek, P., Niemann, V. A., Blair, S. J., Kamat, G. A., Nielander, A. C., Jaramillo, T. F., Cargnello, M.
  2022: 230-235

- **Investigation of the Structure of Atomically Dispersed NiNx Sites in Ni and N-Doped Carbon Electrocatalysts by 61Ni Mossbauer Spectroscopy and Simulations.** *Journal of the American Chemical Society*
  Koshy, D. M., Hossain, M. D., Masuda, R., Yoda, Y., Gee, L. B., Abiose, K., Gong, H., Davis, R., Seto, M., Gallo, A., Hahn, C., Bajdich, M., Bao, et al
  2022

- **Bridging knowledge gaps in liquid- and vapor-fed CO2 electrolysis through active electrode area** *CHEM CATALYSIS*
  Corral, D., Lee, D., Ehlinger, V. M., Nitopi, S., Acosta, J., Wang, L., King, A. J., Feaster, J. T., Lin, Y., Weber, A. Z., Baker, S. E., Duoss, E. B., Beck, et al
  2022; 2 (11): 3239-3253

- **Origins of wear-induced tungsten corrosion defects in semiconductor manufacturing during tungsten chemical mechanical polishing** *APPLIED SURFACE SCIENCE*
  Choi, S., Kreider, M. E., Nielander, A. C., Stevens, M., Kamat, G., Koo, J., Bae, K., Kim, H., Yoon, I., Yoon, B., Hwang, K., Lee, D., Jaramillo, et al
  2022; 598

- **Strategies for Modulating the Catalytic Activity and Selectivity of Manganese Antimonates for the Oxygen Reduction Reaction** *ACS CATALYSIS*
  Kreider, M. E., Gunasooriya, G., Liu, Y., Zeledon, J., Valle, E., Zhou, C., Montoya, J. H., Gallo, A., Sinclair, R., Norskov, J. K., Stevens, M., Jaramillo, T. F.
  2022

- **New challenges in oxygen reduction catalysis: a consortium retrospective to inform future research** *ENERGY & ENVIRONMENTAL SCIENCE*
  Stevens, M., Anand, M., Kreider, M. E., Price, E. K., Zeledon, J., Wang, L., Peng, J., Li, H., Gregoire, J. M., Hummelshoj, J., Jaramillo, T. F., Jia, H., Norskov, et al
  2022
- **Alloyed Pt-Zn Oxygen Reduction Catalysts for Proton Exchange Membrane Fuel Cells** *ACS APPLIED ENERGY MATERIALS*
  Dull, S. M., Vinogradova, O., Xu, S., Koshy, D. M., Vullum, P., Torgersen, J., Kirsch, S., Viswanathan, V., Jaramillo, T. F., Prinz, F. B.
  2022
- **Lithium-Mediated Electrochemical Nitrogen Reduction: Tracking Electrode-Electrolyte Interfaces via Time-Resolved Neutron Reflectometry** *ACS ENERGY LETTERS*
  Blair, S. J., Doucet, M., Browning, J. F., Stone, K., Wang, H., Halbert, C., Acosta, J., Zeledon, J., Nielander, A. C., Gallo, A., Jaramillo, T. F.
  2022; 7 (6): 1939-1946
- **Methods-A Practical Approach to the Reversible Hydrogen Electrode Scale** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Zeledon, J., Jackson, A., Stevens, M., Kamat, G. A., Jaramillo, T. F.
  2022; 169 (6)
- **Vapor-Fed Electrolyzers for Carbon Dioxide Reduction Using Tandem Electrocatalysts: Cuprous Oxide Coupled with Nickel-Coordinated Nitrogen-Doped Carbon** *ADVANCED FUNCTIONAL MATERIALS*
  Lin, Y., Lee, D., Tan, S., Koshy, D. M., Lin, T. Y., Wang, L., Corral, D., Aviles Acosta, J. E., Zamora Zeledon, J. A., Beck, V. A., Baker, S. E., Duoss, E. B., Hahn, et al
  2022
- **Enhancing the connection between computation and experiments in electrocatalysis** *NATURE CATALYSIS*
  Resasco, J., Abild-Pedersen, F., Hahn, C., Bao, Z., Koper, M. T. M., Jaramillo, T. F.
  2022; 5 (5): 374-381
- **Using pH Dependence to Understand Mechanisms in Electrochemical CO Reduction br** *ACS CATALYSIS*
  Kastlunger, G., Wang, L., Govindarajan, N., Heenen, H. H., Ringe, S., Jaramillo, T., Hahn, C., Chan, K.
  2022; 12 (8): 4344-4357
- **First-Row Transition Metal Antimonates for the Oxygen Reduction Reaction.** *ACS nano*
  Gunasooriya, G. T., Kreider, M. E., Liu, Y., Zamora Zeledon, J. A., Wang, Z., Valle, E., Yang, A., Gallo, A., Sinclair, R., Stevens, M. B., Jaramillo, T. F., Norskov, J. K.
  2022
- **Engineering metal-metal oxide surfaces for high-performance oxygen reduction on Ag-Mn electrocatalysts** *ENERGY & ENVIRONMENTAL SCIENCE*
  Zeledon, J., Gunasooriya, G., Kamat, G. A., Kreider, M. E., Ben-Naim, M., Hubert, M. A., Acosta, J., Norskov, J. K., Stevens, M., Jaramillo, T. F.
  2022
- **Acid anion electrolyte effects on platinum for oxygen and hydrogen electrocatalysis** *COMMUNICATIONS CHEMISTRY*
  Kamat, G., Zeledon, J., Gunasooriya, G., Dull, S. M., Perryman, J. T., Norskov, J. K., Stevens, M., Jaramillo, T. F.
  2022; 5 (1)
- **Acid anion electrolyte effects on platinum for oxygen and hydrogen electrocatalysis.** *Communications chemistry*
  Kamat, G. A., Zamora Zeledón, J. A., Gunasooriya, G. T., Dull, S. M., Perryman, J. T., Nørskov, J. K., Stevens, M. B., Jaramillo, T. F.
  2022; 5 (1): 20
- **Gas diffusion electrodes, reactor designs and key metrics of low-temperature CO2 electrolysers** *NATURE ENERGY*
  Wakerley, D., Lamaison, S., Wicks, J., Clemens, A., Feaster, J., Corral, D., Jaffer, S. A., Sarkar, A., Fontecave, M., Duoss, E. B., Baker, S., Sargent, E. H., Jaramillo, et al
  2022
- **Characterization of a Dynamic Y2Ir2O7 Catalyst during the Oxygen Evolution Reaction in Acid** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Hubert, M. A., Gallo, A., Liu, Y., Valle, E., Sanchez, J., Sokaras, D., Sinclair, R., King, L. A., Jaramillo, T. F.
  2022

- **Demonstration of photoreactor platform for on-sun unassisted photoelectrochemical hydrogen generation with tandem III-V photoelectrodes** *CHEM CATALYSIS*
  Ben-Naim, M., Aldridge, C. W., Steiner, M. A., Nielander, A. C., Deustch, T. G., Young, J. L., Jaramillo, T. F.
  2022; 2 (1): 195-209

- **Evaluating the Case for Reduced Precious Metal Catalysts in Proton Exchange Membrane Electrolyzers** *ACS ENERGY LETTERS*
  Hubert, M. A., King, L. A., Jaramillo, T. F.
  2022; 7 (1): 17-23

- **Engineering Surface Architectures for Improved Durability in III-V Photocathodes.** *ACS applied materials & interfaces*
  Ben-Naim, M., Aldridge, C. W., Steiner, M. A., Britto, R. J., Nielander, A. C., King, L. A., Deutsch, T. G., Young, J. L., Jaramillo, T. F.
  1800

- **Improving intrinsic oxygen reduction activity and stability: Atomic layer deposition preparation of platinum-titanium alloy catalysts** *APPLIED CATALYSIS B-ENVIRONMENTAL*
  Kim, Y., Xu, S., Park, J., Dadlani, A., Vinogradova, O., Krishnamurthy, D., Orazov, M., Lee, D., Dull, S., Schindler, P., Han, H., Wang, Z., Graf, et al
  2022; 300

- **Designing a Zn-Ag Catalyst Matrix and Electrolyzer System for CO2 Conversion to CO and Beyond.** *Advanced materials (Deerfield Beach, Fla.)*
  Lamaison, S., Wakerley, D., Kracke, F., Moore, T., Zhou, L., Lee, D. U., Wang, L., Hubert, M. A., Aviles Acosta, J. E., Gregoire, J. M., Duoss, E. B., Baker, S., Beck, et al
  2021: e2103963

- **Chemical Modifications of Ag Catalyst Surfaces with Imidazolium Ionomers Modulate H2 Evolution Rates during Electrochemical CO2 Reduction.** *Journal of the American Chemical Society*
  Koshy, D. M., Akhade, S. A., Shugar, A., Abiose, K., Shi, J., Liang, S., Oakdale, J. S., Weitzner, S. E., Varley, J. B., Duoss, E. B., Baker, S. E., Hahn, C., Bao, et al
  2021

- **Electrolyte-Guided Design of Electroreductive CO Coupling on Copper Surfaces** *ACS APPLIED ENERGY MATERIALS*
  Akhade, S. A., Jayathilake, B. S., Weitzner, S. E., Eshelman, H., Hamilton, J., Feaster, J. T., Wakerley, D. W., Wang, L., Lamaison, S., Lee, D., Hahn, C., Jaramillo, T. F., Duoss, et al
  2021; 4 (8): 8201-8210

- **Dynamics and Hysteresis of Hydrogen Intercalation and Deintercalation in Palladium Electrodes: A Multimodal In Situ X-ray Diffraction, Coulometry, and Computational Study** *CHEMISTRY OF MATERIALS*
  Landers, A. T., Peng, H., Koshy, D. M., Lee, S., Feaster, J. T., Lin, J. C., Beeman, J. W., Higgins, D., Yano, J., Drisdell, W. S., Davis, R. C., Bajdich, M., Abild-Pedersen, et al
  2021; 33 (15): 5872-5884

- **Probing the Effects of Acid Electrolyte Anions on Electrocatalyst Activity and Selectivity for the Oxygen Reduction Reaction** *CHEMELECTROCHEM*
  Zamora Zeledon, J. A., Kamat, G., Gunasooriya, G., Norskov, J. K., Stevens, M., Jaramillo, T. F.
  2021; 8 (13): 2467-2478

- **Phosphate-passivated mordenite for tandem-catalytic conversion of syngas to ethanol or acetic acid** *JOURNAL OF CATALYSIS*
  Upham, D., Orazov, M., Jaramillo, T. F.
  2021; 399: 132-141

- **Understanding Degradation Mechanisms in SrIrO3 Oxygen Evolution Electrocatalysts: Chemical and Structural Microscopy at the Nanoscale** *ADVANCED FUNCTIONAL MATERIALS*
  Ben-Naim, M., Liu, Y., Stevens, M., Lee, K., Wette, M. R., Boubnov, A., Trofimov, A. A., Ievlev, A. V., Belianinov, A., Davis, R. C., Clemens, B. M., Bare, S. R., Hikita, et al
  2021

- **Direct Integration of Strained-Pt Catalysts into Proton-Exchange-Membrane Fuel Cells with Atomic Layer Deposition.** *Advanced materials (Deerfield Beach, Fla.)*
  Xu, S., Wang, Z., Dull, S., Liu, Y., Lee, D. U., Lezama Pacheco, J. S., Orazov, M., Vullum, P. E., Dadlani, A. L., Vinogradova, O., Schindler, P., Tam, Q., Schladt, et al
  2021: e2007885

- **A refraction correction for buried interfaces applied to in situ grazing-incidence X-ray diffraction studies on Pd electrodes.** *Journal of synchrotron radiation*
  Landers, A. T., Koshy, D. M., Lee, S. H., Drisdell, W. S., Davis, R. C., Hahn, C., Mehta, A., Jaramillo, T. F.
  2021; 28 (Pt 3): 919–23

- **Advanced manufacturing for electrosynthesis of fuels and chemicals from CO2** *ENERGY & ENVIRONMENTAL SCIENCE*
  Corral, D., Feaster, J. T., Sobhani, S., DeOtte, J. R., Lee, D., Wong, A. A., Hamilton, J., Beck, V. A., Sarkar, A., Hahn, C., Jaramillo, T. F., Baker, S. E., Duoss, et al
  2021; 14 (5): 3064-3074

- **Isolating the Electrocatalytic Activity of a Confined NiFe Motif within Zirconium Phosphate** *ADVANCED ENERGY MATERIALS*
  Sanchez, J., Stevens, M., Young, A. R., Gallo, A., Zhao, M., Liu, Y., Ramos-Garces, M. V., Ben-Naim, M., Colon, J. L., Sinclair, R., King, L. A., Bajdich, M., Jaramillo, et al
  2021

- **Bridging thermal catalysis and electrocatalysis: Catalyzing CO2 conversion with carbon-based materials.** *Angewandte Chemie (International ed. in English)*
  Koshy, D., Nathan, S., Asundi, A., Abdellah, A., Dull, S., Cullen, D., Higgins, D., Bao, Z., Bent, S., Jaramillo, T.
  2021

- **Tungsten oxide-coated copper gallium selenide sustains long-term solar hydrogen evolution** *SUSTAINABLE ENERGY & FUELS*
  Palm, D. W., Muzzillo, C. P., Ben-Naim, M., Khan, I., Gaillard, N., Jaramillo, T. F.
  2021; 5 (2): 384–90

- **Cobalt porphyrin intercalation into zirconium phosphate layers for electrochemical water oxidation** *SUSTAINABLE ENERGY & FUELS*
  Barraza Alvarez, I., Wu, Y., Sanchez, J., Ge, Y., Ramos-Garces, M. V., Chu, T., Jaramillo, T. F., Colon, J. L., Villagran, D.
  2021; 5 (2): 430–37

- **Bottom-Up Fabrication of Oxygen Reduction Electrodes with Atomic Layer Deposition for High-Power-Density PEMFCs** *CELL REPORTS PHYSICAL SCIENCE*
  Dull, S. M., Xu, S., Goh, T., Lee, D., Higgins, D., Orazov, M., Koshy, D. M., Vullum, P., Kirsch, S., Huebner, G., Torgersen, J., Jaramillo, T. F., Prinz, et al
  2021; 2 (1)

- **CO as a Probe Molecule to Study Surface Adsorbates during Electrochemical Oxidation of Propene** *CHEMELECTROCHEM*
  Winiwarter, A., Boyd, M. J., Scott, S. B., Higgins, D. C., Seger, B., Chorkendorff, I., Jaramillo, T. F.
  2021; 8 (1): 250–56

- **Understanding Selectivity in CO2 Hydrogenation to Methanol for MoP Nanoparticle Catalysts Using In Situ Techniques** *CATALYSTS*
  Duyar, M. S., Gallo, A., Regli, S. K., Snider, J. L., Singh, J. A., Valle, E., McEnaney, J., Bent, S. F., Ronning, M., Jaramillo, T. F.
  2021; 11 (1)

- **Guiding the Catalytic Properties of Copper for Electrochemical CO2 Reduction by Metal Atom Decoration.** *ACS applied materials & interfaces*
  Nishimura, Y. F., Peng, H. J., Nitopi, S., Bajdich, M., Wang, L., Morales-Guio, C. G., Abild-Pedersen, F., Jaramillo, T. F., Hahn, C.
  2021

- **Tuning the electronic structure of Ag-Pd alloys to enhance performance for alkaline oxygen reduction.** *Nature communications*
  Zamora Zeledón, J. A., Stevens, M. B., Gunasooriya, G. T., Gallo, A. n., Landers, A. T., Kreider, M. E., Hahn, C. n., Nørskov, J. K., Jaramillo, T. F.
  2021; 12 (1): 620

- **Identifying and Tuning the In Situ Oxygen-Rich Surface of Molybdenum Nitride Electrocatalysts for Oxygen Reduction** *ACS APPLIED ENERGY MATERIALS*
  Stevens, M., Kreider, M. E., Patel, A. M., Wang, Z., Liu, Y., Gibbons, B. M., Statt, M. J., Ievlev, A., Sinclair, R., Mehta, A., Davis, R. C., Norskov, J. K., Gallo, et al
  2020; 3 (12): 12433–46

- **Acidic Oxygen Evolution Reaction Activity-Stability Relationships in Ru-Based Pyrochlores** *ACS CATALYSIS*
  Hubert, M. A., Patel, A. M., Gallo, A., Liu, Y., Valle, E., Ben-Naim, M., Sanchez, J., Sokaras, D., Sinclair, R., Norskov, J. K., King, L. A., Bajdich, M., Jaramillo, et al
  2020; 10 (20): 12182–96

- **Direct Characterization of Atomically Dispersed Catalysts: Nitrogen-Coordinated Ni Sites in Carbon-Based Materials for CO(2)Electroreduction** *ADVANCED ENERGY MATERIALS*
  Koshy, D. M., Landers, A. T., Cullen, D. A., Ievlev, A., Meyer, H. M., Hahn, C., Bao, Z., Jaramillo, T. F.
  2020
- **Addressing the Stability Gap in Photoelectrochemistry: Molybdenum Disulfide Protective Catalysts for Tandem III-V Unassisted Solar Water Splitting** *ACS ENERGY LETTERS*
  Ben-Naim, M., Britto, R. J., Aldridge, C. W., Mow, R., Steiner, M. A., Nielander, A. C., King, L. A., Friedman, D. J., Deutsch, T. G., Young, J. L., Jaramillo, T. F.
  2020; 5 (8): 2631–40
- **Nanosized Zirconium Porphyrinic Metal-Organic Frameworks that Catalyze the Oxygen Reduction Reaction in Acid** *SMALL METHODS*
  Chen, G., Stevens, M., Liu, Y., King, L. A., Park, J., Kim, T., Sinclair, R., Jaramillo, T. F., Bao, Z.
  2020
- **Low-pressure methanol synthesis from CO2 over metal-promoted Ni-Ga intermetallic catalysts** *JOURNAL OF CO2 UTILIZATION*
  Duyar, M. S., Gallo, A., Snider, J. L., Jaramillo, T. F.
  2020; 39
- **Ni5Ga3 catalysts for CO2 reduction to methanol: Exploring the role of Ga surface oxidation/reduction on catalytic activity** *APPLIED CATALYSIS B-ENVIRONMENTAL*
  Gallo, A., Snider, J. L., Sokaras, D., Nordlund, D., Kroll, T., Ogasawara, H., Kovarik, L., Duyar, M. S., Jaramillo, T. F.
  2020; 267
- **A cyclic electrochemical strategy to produce acetylene from CO2, CH4, or alternative carbon sources** *SUSTAINABLE ENERGY & FUELS*
  McEnaney, J. M., Rohr, B. A., Nielander, A. C., Singh, A. R., King, L. A., Norskov, J. K., Jaramillo, T. F.
  2020; 4 (6): 2752–59
- **Nitride or Oxynitride? Elucidating the Composition-Activity Relationships in Molybdenum Nitride Electrocatalysts for the Oxygen Reduction Reaction** *CHEMISTRY OF MATERIALS*
  Kreider, M. E., Stevens, M., Liu, Y., Patel, A. M., Statt, M. J., Gibbons, B. M., Gallo, A., Ben-Naim, M., Mehta, A., Davis, R. C., Ievlev, A., Norskov, J. K., Sinclair, et al
  2020; 32 (7): 2946–60
- **In Situ X-Ray Absorption Spectroscopy Disentangles the Roles of Copper and Silver in a Bimetallic Catalyst for the Oxygen Reduction Reaction** *CHEMISTRY OF MATERIALS*
  Gibbons, B. M., Wette, M., Stevens, M., Davis, R. C., Siahrostami, S., Kreider, M., Mehta, A., Higgins, D. C., Clemens, B. M., Jaramillo, T. F.
  2020; 32 (5): 1819–27
- **Electrolyte Engineering for Efficient Electrochemical Nitrate Reduction to Ammonia on a Titanium Electrode** *ACS SUSTAINABLE CHEMISTRY & ENGINEERING*
  McEnaney, J. M., Blair, S. J., Nielander, A. C., Schwalbe, J. A., Koshy, D. M., Cargnello, M., Jaramillo, T. F.
  2020; 8 (7): 2672–81
- **Using Microenvironments to Control Reactivity in CO2 Electrocatalysis** *JOULE*
  Hahn, C., Jaramillo, T. F.
  2020; 4 (2): 292–94
- **A Combined Theory-Experiment Analysis of the Surface Species in Lithium-Mediated NH3 Electrosynthesis** *CHEMELECTROCHEM*
  Schwalbe, J. A., Statt, M. J., Chosy, C., Singh, A. R., Rohr, B. A., Nielander, A. C., Andersen, S. Z., McEnaney, J. M., Baker, J. G., Jaramillo, T. F., Norskov, J. K., Cargnello, M.
  2020
- **Selective reduction of CO to acetaldehyde with CuAg electrocatalysts.** *Proceedings of the National Academy of Sciences of the United States of America*
  Wang, L., Higgins, D. C., Ji, Y., Morales-Guio, C. G., Chan, K., Hahn, C., Jaramillo, T. F.
  2020
- **Morphology control of metal-modified zirconium phosphate support structures for the oxygen evolution reaction.** *Dalton transactions (Cambridge, England : 2003)*
  Ramos-Garces, M. V., Sanchez, J., La Luz-Rivera, K., Del Toro-Pedrosa, D. E., Jaramillo, T. F., Colon, J. L.

2020

- **A Spin Coating Method To Deposit Iridium-Based Catalysts onto Silicon for Water Oxidation Photoanodes.** *ACS applied materials & interfaces*
  Ben-Naim, M. n., Palm, D. W., Strickler, A. L., Nielander, A. C., Sanchez, J. n., King, L. A., Higgins, D. C., Jaramillo, T. F.
  2020
- **Modified atomic layer deposition of MoS2 thin films** *Modified atomic layer deposition of MoS2 thin films*
  Zeng, L., Richey, N. E., Palm, D. W., Oh, I., Shi, J., MacIsaac, C., Jaramillo, T., Bent, S. F.
  2020; 38: 060403
- **Two-Dimensional Conductive Ni-HAB as a Catalyst for the Electrochemical Oxygen Reduction Reaction.** *ACS applied materials & interfaces*
  Park, J. n., Chen, Z. n., Flores, R. A., Wallnerström, G. n., Kulkarni, A. n., Nørskov, J. K., Jaramillo, T. F., Bao, Z. n.
  2020
- **Readily Constructed Glass Piston Pump for Gas Recirculation.** *ACS omega*
  Nielander, A. C., Blair, S. J., McEnaney, J. M., Schwalbe, J. A., Adams, T. n., Taheri, S. n., Wang, L. n., Yang, S. n., Cargnello, M. n., Jaramillo, T. F.
  2020; 5 (27): 16455–59
- **Double layer charging driven carbon dioxide adsorption limits the rate of electrochemical carbon dioxide reduction on Gold.** *Nature communications*
  Ringe, S. n., Morales-Guio, C. G., Chen, L. D., Fields, M. n., Jaramillo, T. F., Hahn, C. n., Chan, K. n.
  2020; 11 (1): 33
- **Understanding the Origin of Highly Selective CO2 Electroreduction to CO on Ni, N-doped Carbon Catalysts.** *Angewandte Chemie (International ed. in English)*
  Koshy, D. n., Chen, S. n., Lee, D. U., Burke Stevens, M. n., Abdellah, A. n., Dull, S. n., Chen, G. n., Nordlund, D. n., Gallo, A. n., Hahn, C. n., Higgins, D. C., Bao, Z. n., Jaramillo, et al
  2020
- **Oxidation State and Surface Reconstruction of Cu under CO2 Reduction Conditions from In Situ X-ray Characterization.** *Journal of the American Chemical Society*
  Lee, S. H., Lin, J. C., Farmand, M. n., Landers, A. T., Feaster, J. T., Avilés Acosta, J. E., Beeman, J. W., Ye, Y. n., Yano, J. n., Mehta, A. n., Davis, R. C., Jaramillo, T. F., Hahn, et al
  2020
- **The Materials Research Platform: Defining the Requirements from User Stories** *MATTER*
  Aykol, M., Hummelshoj, J. S., Anapolsky, A., Aoyagi, K., Bazant, M. Z., Bligaard, T., Braatz, R. D., Broderick, S., Cogswell, D., Dagdelen, J., Drisdell, W., Garcia, E., Garikipati, et al
  2019; 1 (6): 1433–38
- **A non-precious metal hydrogen catalyst in a commercial polymer electrolyte membrane electrolyser.** *Nature nanotechnology*
  King, L. A., Hubert, M. A., Capuano, C., Manco, J., Danilovic, N., Valle, E., Hellstern, T. R., Ayers, K., Jaramillo, T. F.
  2019
- **Transition Metal Arsenide Catalysts for the Hydrogen Evolution Reaction** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Gauthier, J. A., King, L. A., Stults, F., Flores, R. A., Kibsgaard, J., Regmi, Y. N., Chan, K., Jaramillo, T. F.
  2019; 123 (39): 24007–12
- **Surface Engineering of 3D Gas Diffusion Electrodes for High-Performance H-2 Production with Nonprecious Metal Catalysts** *ADVANCED ENERGY MATERIALS*
  Sanchez, J., Hellstern, T. R., King, L. A., Jaramillo, T. F.
  2019
- **Aqueous Electrochemical Reduction of Carbon Dioxide and Carbon Monoxide into Methanol with Cobalt Phthalocyanine.** *Angewandte Chemie (International ed. in English)*
  Boutin, E., Wang, M., Lin, J. C., Mesnage, M., Mendoza, D., Lassalle-Kaiser, B., Hahn, C., Jaramillo, T., Robert, M.
  2019
- **Understanding vapor-fed carbon dioxide reduction at the gas diffusion electrode and electrolyte interface Using flow-electrolyte systems**
  Lee, D., Koshy, D., Abiose, K., Corral, D., Wang, L., Higgins, D., Hahn, C., Jaramillo, T.

AMER CHEMICAL SOC.2019

- **Promoting reliable electrocatalytic N2 reduction**
  Nielander, A., McEnaney, J., Blair, S., Schwalbe, J., Baker, J., Jaramillo, T.
  AMER CHEMICAL SOC.2019

- **Crystalline Strontium Iridate Particle Catalysts for Enhanced Oxygen Evolution in Acid** *ACS APPLIED ENERGY MATERIALS*
  Strickler, A. L., Higgins, D., Jaramillo, T. F.
  2019; 2 (8): 5490–98

- **Electro-Oxidation of Methane on Platinum under Ambient Conditions** *ACS CATALYSIS*
  Boyd, M. J., Latimer, A. A., Dickens, C. F., Nielander, A. C., Hahn, C., Norskov, J. K., Higgins, D. C., Jaramillo, T. F.
  2019; 9 (8): 7578–87

- **Electrochemically converting carbon monoxide to liquid fuels by directing selectivity with electrode surface area** *NATURE CATALYSIS*
  Wang, L., Nitopi, S., Wong, A. B., Snider, J. L., Nielander, A. C., Morales-Guio, C. G., Orazov, M., Higgins, D. C., Hahn, C., Jaramillo, T. F.
  2019; 2 (8): 702–8

- **Interfacial engineering of gallium indium phosphide photoelectrodes for hydrogen evolution with precious metal and non-precious metal based catalysts** *JOURNAL OF MATERIALS CHEMISTRY A*
  Britto, R. J., Young, J. L., Yang, Y., Steiner, M. A., LaFehr, D. T., Friedman, D. J., Beard, M., Deutsch, T. G., Jaramillo, T. F.
  2019; 7 (28): 16821–32

- **Precious Metal-Free Nickel Nitride Catalyst for the Oxygen Reduction Reaction.** *ACS applied materials & interfaces*
  Kreider, M. E., Gallo, A., Back, S., Liu, Y., Siahrostami, S., Nordlund, D., Sinclair, R., Norskov, J. K., King, L. A., Jaramillo, T. F.
  2019

- **A Versatile Method for Ammonia Detection in a Range of Relevant Electrolytes via Direct Nuclear Magnetic Resonance Techniques** *ACS CATALYSIS*
  Nielander, A. C., McEnaney, J. M., Schwalbe, J. A., Baker, J. G., Blair, S. J., Wang, L., Pelton, J. G., Andersen, S. Z., Enemark-Rasmussen, K., Colic, V., Yang, S., Bent, S. F., Cargnello, et al
  2019; 9 (7): 5797–5802

- **A rigorous electrochemical ammonia synthesis protocol with quantitative isotope measurements.** *Nature*
  Andersen, S. Z., Colic, V., Yang, S., Schwalbe, J. A., Nielander, A. C., McEnaney, J. M., Enemark-Rasmussen, K., Baker, J. G., Singh, A. R., Rohr, B. A., Statt, M. J., Blair, S. J., Mezzavilla, et al
  2019

- **Progress and Perspectives of Electrochemical CO2 Reduction on Copper in Aqueous Electrolyte.** *Chemical reviews*
  Nitopi, S., Bertheussen, E., Scott, S. B., Liu, X., Engstfeld, A. K., Horch, S., Seger, B., Stephens, I. E., Chan, K., Hahn, C., Norskov, J. K., Jaramillo, T. F., Chorkendorff, et al
  2019

- **Transition Metal-Modified Exfoliated Zirconium Phosphate as an Electrocatalyst for the Oxygen Evolution Reaction** *ACS APPLIED ENERGY MATERIALS*
  Ramos-Garces, M. V., Sanchez, J., Del Toro-Pedrosa, D. E., Alvarez, I., Yu, Y., Valle, E., Villagran, D., Jaramillo, T. F., Colon, J. L.
  2019; 2 (5): 3561–67

- **Influence of Atomic Surface Structure on the Activity of Ag for the Electrochemical Reduction of CO2 to CO** *ACS CATALYSIS*
  Clark, E. L., Ringe, S., Tang, M., Walton, A., Hahn, C., Jaramillo, T. F., Chan, K., Bell, A. T.
  2019; 9 (5): 4006–14

- **What would it take for renewably powered electrosynthesis to displace petrochemical processes?** *SCIENCE*
  De Luna, P., Hahn, C., Higgins, D., Jaffer, S. A., Jaramillo, T. F., Sargent, E. H.
  2019; 364 (6438): 350-+

- **Robust and biocompatible catalysts for efficient hydrogen-driven microbial electrosynthesis** *COMMUNICATIONS CHEMISTRY*
  Kracke, F., Wong, A., Maegaard, K., Deutzmann, J. S., Hubert, M. A., Hahn, C., Jaramillo, T. F., Spormann, A. M.
  2019; 2

- **Development of Molybdenum Phosphide Catalysts for Higher Alcohol Synthesis from Syngas by Exploiting Support and Promoter Effects** *ENERGY TECHNOLOGY*

ten Have, I. C., Valle, E., Gallo, A., Snider, J. L., Duyar, M. S., Jaramillo, T. F.
2019; 7 (5)

- **Revealing the Synergy between Oxide and Alloy Phases on the Performance of Bimetallic In-Pd Catalysts for CO2 Hydrogenation to Methanol** *ACS CATALYSIS*
  Snider, J. L., Streibel, V., Hubert, M. A., Choksi, T. S., Valle, E., Upham, D., Schumann, J., Duyar, M. S., Gallo, A., Abild-Pedersen, F., Jaramillo, T. F.
  2019; 9 (4): 3399–3412

- **Quantitative protocol for the electroreduction of N2 to NH3 under ambient conditions**
  Stephens, I., Andersen, S., Colic, V., Yang, S., Schwalbe, J., Nielander, A., McEnaney, J., Enemark-Rasmussen, K., Baker, J., Singh, A., Rohr, B., Blair, S., Mezzavilla, et al
  AMER CHEMICAL SOC.2019

- **Observing hydrogen intercalation into palladium thin films using in situ grazing incidence x-ray diffraction and x-ray reflectivity**
  Landers, A., Feaster, J., Brown, K., Lin, J., Farmand, M., Fackler, S., Nishimura, Y., Beeman, J., Bajdich, M., Higgins, D., Yano, J., Drisdell, W., Davis, et al
  AMER CHEMICAL SOC.2019

- **Proton control in electrochemical ammonia synthesis**
  Schwalbe, J., Singh, A., Rohr, B., Statt, M., Nielander, A., McEnaney, J., Andersen, S., Colic, V., Yang, S., Chorkendorff, I., Jaramillo, T., Norskov, J., Cargnello, et al
  AMER CHEMICAL SOC.2019

- **Absence of Oxidized Phases in Cu under CO Reduction Conditions** *ACS ENERGY LETTERS*
  Scott, S. B., Hogg, T. V., Landers, A. T., Maagaard, T., Bertheussen, E., Lin, J. C., Davis, R. C., Beeman, J. W., Higgins, D., Drisdell, W. S., Hahn, C., Mehta, A., Seger, et al
  2019; 4 (3): 803–4

- **Electrochemical flow cell enabling operando probing of electrocatalyst surfaces by X-ray spectroscopy and diffraction.** *Physical chemistry chemical physics : PCCP*
  Farmand, M., Landers, A. T., Lin, J. C., Feaster, J. T., Beeman, J. W., Ye, Y., Clark, E. L., Higgins, D., Yano, J., Davis, R. C., Mehta, A., Jaramillo, T. F., Hahn, et al
  2019

- **Molybdenum Disulfide Catalytic Coatings via Atomic Layer Deposition for Solar Hydrogen Production from Copper Gallium Diselenide Photocathodes** *ACS APPLIED ENERGY MATERIALS*
  Hellstern, T. R., Palm, D. W., Carter, J., DeAngelis, A. D., Horsley, K., Weinhardt, L., Yang, W., Blum, M., Gaillard, N., Heske, C., Jaramillo, T. F.
  2019; 2 (2): 1060–66

- **pH effects on the electrochemical reduction of CO(2) towards C2 products on stepped copper.** *Nature communications*
  Liu, X., Schlexer, P., Xiao, J., Ji, Y., Wang, L., Sandberg, R. B., Tang, M., Brown, K. S., Peng, H., Ringe, S., Hahn, C., Jaramillo, T. F., Norskov, et al
  2019; 10 (1): 32

- **pH effects on the electrochemical reduction of CO(2) towards C-2 products on stepped copper** *NATURE COMMUNICATIONS*
  Liu, X., Schlexer, P., Xiao, J., Ji, Y., Wang, L., Sandberg, R. B., Tang, M., Brown, K. S., Peng, H., Ringe, S., Hahn, C., Jaramillo, T. F., Norskov, et al
  2019; 10

- **Systematic Investigation of Iridium-Based Bimetallic Thin Film Catalysts for the Oxygen Evolution Reaction in Acidic Media.** *ACS applied materials & interfaces*
  Strickler, A. L., Flores, R. A., King, L. A., Nørskov, J. K., Bajdich, M. n., Jaramillo, T. F.
  2019

- **Author Correction: A rigorous electrochemical ammonia synthesis protocol with quantitative isotope measurements.** *Nature*
  Andersen, S. Z., Čolić, V. n., Yang, S. n., Schwalbe, J. A., Nielander, A. C., McEnaney, J. M., Enemark-Rasmussen, K. n., Baker, J. G., Singh, A. R., Rohr, B. A., Statt, M. J., Blair, S. J., Mezzavilla, et al
  2019

- **What would it take for renewably powered electrosynthesis to displace petrochemical processes?** *Science (New York, N.Y.)*
  De Luna, P. n., Hahn, C. n., Higgins, D. n., Jaffer, S. A., Jaramillo, T. F., Sargent, E. H.
  2019; 364 (6438)

- **Nanostructuring Strategies To Increase the Photoelectrochemical Water Splitting Activity of Silicon Photocathodes** *ACS APPLIED NANO MATERIALS*
  Hellstern, T. R., Nielander, A. C., Chakthranont, P., King, L. A., Willis, J. J., Xu, S., MacIsaac, C., Hahn, C., Bent, S. F., Prinz, F. B., Jaramillo, T. F.
  2019; 2 (1): 6–11

- **Gas-Diffusion Electrodes for Carbon Dioxide Reduction: A New Paradigm** *ACS ENERGY LETTERS*
  Higgins, D., Hahn, C., Xiang, C., Jaramillo, T. F., Weber, A. Z.
  2019; 4 (1): 317–24

- **Guiding Electrochemical Carbon Dioxide Reduction toward Carbonyls Using Copper Silver Thin Films with Interphase Miscibility** *ACS ENERGY LETTERS*
  Higgins, D., Landersp, A. T., Ji, Y., Nitopi, S., Morales-Guio, C. G., Wang, L., Chan, K., Hahn, C., Jaramillo, T. F.
  2018; 3 (12): 2947–55

- **A Highly Active Molybdenum Phosphide Catalyst for Methanol Synthesis from CO and CO2** *ANGEWANDTE CHEMIE-INTERNATIONAL EDITION*
  Duyar, M. S., Tsai, C., Snider, J. L., Singh, J. A., Gallo, A., Yoo, J., Medford, A. J., Abild-Pedersen, F., Studt, F., Kibsgaard, J., Bent, S. F., Norskov, J. K., Jaramillo, et al
  2018; 57 (46): 15045–50

- **Improved CO2 reduction activity towards C2+ alcohols on a tandem gold on copper electrocatalyst** *NATURE CATALYSIS*
  Morales-Guio, C. G., Cave, E. R., Nitopi, S. A., Feaster, J. T., Wang, L., Kuhl, K. P., Jackson, A., Johnson, N. C., Abram, D. N., Hatsukade, T., Hahn, C., Jaramillo, T. F.
  2018; 1 (10): 764–71

- **Intercalation of rhenium bipyridine complexes with zirconium phosphate nanoparticles for energy-related reactions**
  Del Toro-Pedrosa, D., Ramos-Garces, M., Colon, J., Jaramillo, T., Perez, J., Riera, L., Fombona, S., Arevalo, R.
  AMER CHEMICAL SOC.2018

- **Quasi-2D Pd/Pt nanoclams for CO2 reduction in tandem with microbial communities**
  Wong, A., Kracke, F., Antoniuk-Pablant, A., Hahn, C., Spormann, A., Jaramillo, T.
  AMER CHEMICAL SOC.2018

- **Water splitting electrocatalysis within zirconium phosphate layered inorganic nanomaterials**
  Colon, J., Ramos-Garces, M., Sanchez, J., Barraza, I., Wu, Y., Del Toro, D., Villagran, D., Jaramillo, T.
  AMER CHEMICAL SOC.2018

- **Metal-modified zirconium phosphate monolayers for the oxygen evolution reaction**
  Ramos-Garces, M., Sanchez, J., Jaramillo, T., Colon, J.
  AMER CHEMICAL SOC.2018

- **Electrochemical Carbon Monoxide Reduction on Polycrystalline Copper: Effects of Potential, Pressure, and pH on Selectivity toward Multicarbon and Oxygenated Products** *ACS CATALYSIS*
  Wang, L., Nitopi, S. A., Bertheussen, E., Orazov, M., Morales-Guio, C. G., Liu, X., Higgins, D. C., Chan, K., Norskov, J. K., Hahn, C., Jaramillo, T. F.
  2018; 8 (8): 7445–54

- **Extending the limits of Pt/C catalysts with passivation-gas-incorporated atomic layer deposition** *NATURE CATALYSIS*
  Xu, S., Kim, Y., Park, J., Higgins, D., Shen, S., Schindler, P., Thian, D., Provine, J., Torgersen, J., Graf, T., Schladt, T. D., Orazov, M., Liu, et al
  2018; 1 (8): 624–30

- **Rapid flame doping of Co to WS2 for efficient hydrogen evolution** *ENERGY & ENVIRONMENTAL SCIENCE*
  Shi, X., Fields, M., Park, J., McEnaney, J. M., Yan, H., Zhang, Y., Tsai, C., Jaramillo, T. F., Sinclair, R., Norskov, J. K., Zheng, X.
  2018; 11 (8): 2270–77

- **A Universal Platform for Fabricating Organic Electrochemical Devices** *ADVANCED ELECTRONIC MATERIALS*
  Duong, D. T., Tuchman, Y., Chakthranont, P., Cavassin, P., Colucci, R., Jaramillo, T. F., Salleo, A., Faria, G. C.
  2018; 4 (7)

- **Standards and Protocols for Data Acquisition and Reporting for Studies of the Electrochemical Reduction of Carbon Dioxide** *ACS CATALYSIS*
  Clark, E. L., Resasco, J., Landers, A., Lin, J., Chung, L., Walton, A., Hahn, C., Jaramillo, T. F., Bell, A. T.

2018; 8 (7): 6560–70

- **Designing Boron Nitride Islands in Carbon Materials for Efficient Electrochemical Synthesis of Hydrogen Peroxide.** *Journal of the American Chemical Society*
  Chen, S., Chen, Z., Siahrostami, S., Higgins, D., Nordlund, D., Sokaras, D., Kim, T. R., Liu, Y., Yan, X., Nilsson, E., Sinclair, R., Norskov, J. K., Jaramillo, et al
  2018; 140 (25): 7851–59

- **The Predominance of Hydrogen Evolution on Transition Metal Sulfides and Phosphides under CO2 Reduction Conditions: An Experimental and Theoretical Study** *ACS ENERGY LETTERS*
  Landers, A. T., Fields, M., Torelli, D. A., Xiao, J., Hellstern, T. R., Francis, S. A., Tsai, C., Kibsgaard, J., Lewis, N. S., Chan, K., Hahn, C., Jaramillo, T. F.
  2018; 3 (6): 1450–57

- **Cyclic-Voltammetry-Based Solid-State Gas Sensor for Methane and Other VOC Detection** *ANALYTICAL CHEMISTRY*
  Gross, P., Jaramillo, T., Pruitt, B.
  2018; 90 (10): 6102–8

- **Copper Silver Thin Films with Metastable Miscibility for Oxygen Reduction Electrocatalysis in Alkaline Electrolytes** *ACS APPLIED ENERGY MATERIALS*
  Higgins, D., Wette, M., Gibbons, B. M., Siahrostami, S., Hahn, C., Escudero-Escribano, M., Garcia-Melchor, M., Ulissi, Z., Davis, R. C., Mehta, A., Clemens, B. M., Norskov, J. K., Jaramillo, et al
  2018; 1 (5): 1990–99

- **Trends in the Catalytic Activity of Hydrogen Evolution during CO2 Electroreduction on Transition Metals** *ACS CATALYSIS*
  Cave, E. R., Shi, C., Kuhl, K. P., Hatsukade, T., Abram, D. N., Hahn, C., Chan, K., Jaramillo, T. F.
  2018; 8 (4): 3035–40

- **alpha-Zirconium phosphate frameworks as supports for active oxygen evolution reaction electrocatalysts**
  Ramos-Garces, M., Sanchez, J., Jaramillo, T., Colon, J.
  AMER CHEMICAL SOC.2018

- **Uniform Pt/Pd bimetallic nanocrystals demonstrate platinum effect on palladium methane combustion activity and stability**
  Goodman, E., Dai, S., Yang, A., Wrasman, C., Gallo, A., Bare, S., Hoffman, A., Jaramillo, T., Graham, G., Pan, X., Cargnello, M.
  AMER CHEMICAL SOC.2018

- **Electrochemical reduction of carbon dioxide over bimetallic metal-on-copper electrocatalysts**
  Nishimura, Y., Hahn, C., Jaramillo, T.
  AMER CHEMICAL SOC.2018

- **Nanoparticles via vapor phase condensation for energy applications**
  Clemens, B., Gibbons, B., Wetter, M., Higgins, D., Jaramillo, T., Baker, J., Bent, S., Mehta, A., Davis, R.
  AMER CHEMICAL SOC.2018

- **Electrochemical cycling strategy for selective and sustainable C2H2 production from CO2 or CH4 at atmospheric pressure using H2O**
  McEnaney, J., Rohr, B., Nielander, A., Singh, A., Norskov, J., Jaramillo, T.
  AMER CHEMICAL SOC.2018

- **High-efficiency oxygen reduction to hydrogen peroxide catalysed by oxidized carbon materials** *NATURE CATALYSIS*
  Lu, Z., Chen, G., Siahrostami, S., Chen, Z., Liu, K., Xie, J., Liao, L., Wu, T., Lin, D., Liu, Y., Jaramillo, T. F., Norskov, J. K., Cui, et al
  2018; 1 (2): 156–62

- **Engineering Ru@Pt Core-Shell Catalysts for Enhanced Electrochemical Oxygen Reduction Mass Activity and Stability.** *Nanomaterials (Basel, Switzerland)*
  Jackson, A., Strickler, A., Higgins, D., Jaramillo, T. F.
  2018; 8 (1)

- **Defective Carbon-Based Materials for the Electrochemical Synthesis of Hydrogen Peroxide** *ACS SUSTAINABLE CHEMISTRY & ENGINEERING*
  Chen, S., Chen, Z., Siahrostami, S., Kim, T., Nordlund, D., Sokaras, D., Nowak, S., To, J. W. F., Higgins, D., Sinclair, R., Norskov, J. K., Jaramillo, T. F., Bao, et al

2018; 6 (1): 311–17

- **Impact of Nanostructuring on the Photoelectrochemical Performance of Si/Ta3N5 Nanowire Photoanodes** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Narkeviciute, I., Jaramillo, T. F.
  2017; 121 (49): 27295–302

- **Design and Fabrication of a Precious Metal-Free Tandem Core-Shell p(+)n Si/W-Doped BiVO4 Photoanode for Unassisted Water Splitting** *ADVANCED ENERGY MATERIALS*
  Chakthranont, P., Hellstern, T. R., McEnaney, J. M., Jaramillo, T. F.
  2017; 7 (22)

- **Electrochemical CO2 Reduction over Compressively Strained CuAg Surface Alloys with Enhanced Multi-Carbon Oxygenate Selectivity** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Clark, E. L., Hahn, C., Jaramillo, T. F., Bell, A. T.
  2017; 139 (44): 15848–57

- **Effects of Ta3N5 Morphology and Composition on the Performance of Si-Ta3N5 Photoanodes** *SOLAR RRL*
  Narkeviciute, I., Jaramillo, T. F.
  2017; 1 (11)

- **Systematic Structure Property Relationship Studies in Palladium Catalyzed Methane Complete Combustion** *ACS CATALYSIS*
  Willis, J. J., Gallo, A., Sokaras, D., Aljama, H., Nowak, S. H., Goodman, E. D., Wu, L., Tassone, C. J., Jaramillo, T. F., Abild-Pedersen, F., Cargnello, M.
  2017; 7 (11): 7810–21

- **Highly Stable Molybdenum Disulfide Protected Silicon Photocathodes for Photoelectrochemical Water Splitting** *ACS APPLIED MATERIALS & INTERFACES*
  King, L. A., Hellstern, T. R., Park, J., Sinclair, R., Jaramillo, T. F.
  2017; 9 (42): 36792–98

- **Mesoporous Ruthenium/Ruthenium Oxide Thin Films: Active Electrocatalysts for the Oxygen Evolution Reaction** *CHEMELECTROCHEM*
  Kibsgaard, J., Hellstern, T. R., Choi, S., Reinecke, B. N., Jaramillo, T. F.
  2017; 4 (10): 2480–85

- **Investigating Catalyst-Support Interactions To Improve the Hydrogen Evolution Reaction Activity of Thiomolybdate [Mo3S13](2-) Nanoclusters** *ACS CATALYSIS*
  Hellstern, T. R., Kibsgaard, J., Tsai, C., Palm, D. W., King, L. A., Abild-Pedersen, F., Jaramillo, T. F.
  2017; 7 (10): 7126–30

- **Machine-Learning Methods Enable Exhaustive Searches for Active Bimetallic Facets and Reveal Active Site Motifs for CO2 Reduction** *ACS CATALYSIS*
  Ulissi, Z. W., Tang, M. T., Xiao, J., Liu, X., Torelli, D. A., Karamad, M., Cummins, K., Hahn, C., Lewis, N. S., Jaramillo, T. F., Chan, K., Norskov, J. K.
  2017; 7 (10): 6600–6608

- **Investigating Catalyst-Support Interactions To Improve the Hydrogen Evolution Reaction Activity of Thiomolybdate [Mo3S13](2-) Nanoclusters** *ACS CATALYSIS*
  Hellstern, T. R., Kibsgaard, J., Tsai, C., Palm, D. W., King, L. A., Abild-Pedersen, F., Jaramillo, T. F.
  2017; 7 (10): 7126–30

- **Understanding activity trends in electrochemical water oxidation to form hydrogen peroxide** *NATURE COMMUNICATIONS*
  Shi, X., Siahrostami, S., Li, G., Zhang, Y., Chakthranont, P., Studt, F., Jaramillo, T. F., Zheng, X., Norskov, J. K.
  2017; 8: 701

- **Understanding the Influence of [EMIM]Cl on the Suppression of the Hydrogen Evolution Reaction on Transition Metal Electrodes** *LANGMUIR*
  Feaster, J. T., Jongerius, A. L., Liu, X., Urushihara, M., Nitopi, S. A., Hahn, C., Chan, K., Norskov, J. K., Jaramillo, T. F.
  2017; 33 (37): 9464–71

- **Polyol Synthesis of Cobalt-Copper Alloy Catalysts for Higher Alcohol Synthesis from Syngas** *CATALYSIS LETTERS*
  Mendes, L. V. P., Snider, J. L., Fleischman, S. D., Kibsgaard, J., McEnaney, J. M., Aranda, D. A. G., Jaramillo, T. F.

2017; 147 (9): 2352–59

- **Multimodal x-ray characterization of solar fuels catalysts under operation**
  Farmand, M., Feaster, J., Davis, R., Fackler, S., Landers, A., Lin, J., Hahn, C., Jaramillo, T., Yano, J., Mehta, A., Drisdell, W.
  AMER CHEMICAL SOC.2017
- **Water oxidation electrocatalysis by transition metals supported onto zirconium phosphate nanoparticles**
  Ramos-Garces, M., Sanchez, J., Narkeviciute, I., Jaramillo, T., Colon, J.
  AMER CHEMICAL SOC.2017
- **High-yield ammonia synthesis via an electrochemical cycling process using N2 and H2O at atmospheric pressure**
  McEnaney, J., Singh, A., Schwalbe, J., Kibsgaard, J., Lin, J., Cargnello, M., Jaramillo, T., Norskov, J.
  AMER CHEMICAL SOC.2017
- **Promoter Effects of Alkali Metal Cations on the Electrochemical Reduction of Carbon Dioxide** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Resasco, J., Chen, L. D., Clark, E., Tsai, C., Hahn, C., Jaramillo, T. F., Chan, K., Bell, A. T.
  2017; 139 (32): 11277–87
- **Effects of Gold Substrates on the Intrinsic and Extrinsic Activity of High-Loading Nickel-Based Oxyhydroxide Oxygen Evolution Catalysts** *ACS CATALYSIS*
  Chakthranont, P., Kibsgaard, J., Gallo, A., Park, J., Mitani, M., Sokaras, D., Kroll, T., Sinclair, R., Mogensen, M. B., Jaramillo, T. F.
  2017; 7 (8): 5399–5409
- **Ammonia synthesis from N-2 and H2O using a lithium cycling electrification strategy at atmospheric pressure** *ENERGY & ENVIRONMENTAL SCIENCE*
  McEnaney, J. M., Singh, A. R., Schwalbe, J. A., Kibsgaard, J., Lin, J. C., Cargnello, M., Jaramillo, T. F., Norskov, J. K.
  2017; 10 (7): 1621–30
- **Uniform Pt/Pd Bimetallic Nanocrystals Demonstrate Platinum Effect on Palladium Methane Combustion Activity and Stability** *ACS CATALYSIS*
  Goodman, E. D., Dai, S., Yang, A., Wrasman, C. J., Gallo, A., Bare, S. R., Hoffman, A. S., Jaramillo, T. F., Graham, G. W., Pan, X., Cargnello, M.
  2017; 7 (7): 4372–80
- **Understanding Selectivity for the Electrochemical Reduction of Carbon Dioxide to Formic Acid and Carbon Monoxide on Metal Electrodes** *ACS CATALYSIS*
  Feaster, J. T., Shi, C., Cave, E. R., Hatsukade, T. T., Abram, D. N., Kuhl, K. P., Hahn, C., Norskov, J. K., Jaramillo, T. F.
  2017; 7 (7): 4822–27
- **reduction on Au surfaces: mechanistic aspects regarding the formation of major and minor products.** *Physical chemistry chemical physics : PCCP*
  Cave, E. R., Montoya, J. H., Kuhl, K. P., Abram, D. N., Hatsukade, T., Shi, C., Hahn, C., Nørskov, J. K., Jaramillo, T. F.
  2017
- **: Controlling selectivity toward oxygenates and hydrocarbons.** *Proceedings of the National Academy of Sciences of the United States of America*
  Hahn, C., Hatsukade, T., Kim, Y., Vailionis, A., Baricuatro, J. H., Higgins, D. C., Nitopi, S. A., Soriaga, M. P., Jaramillo, T. F.
  2017; 114 (23): 5918-5923
- **Carbon Dioxide Electroreduction using a Silver-Zinc Alloy** *ENERGY TECHNOLOGY*
  Hatsukade, T., Kuhl, K. P., Cave, E. R., Abram, D. N., Feaster, J. T., Jongerius, A. L., Hahn, C., Jaramillo, T. F.
  2017; 5 (6): 955–61
- **Transition Metal-Modified Zirconium Phosphate Electrocatalysts for the Oxygen Evolution Reaction** *CATALYSTS*
  Sanchez, J., Ramos-Garces, M. V., Narkeviciute, I., Colon, J. L., Jaramillo, T. F.
  2017; 7 (5)
- **Electro-thermochemical cycling process for high-yield ammonia synthesis from N2 and H2O at atmospheric pressure**
  McEnaney, J., Singh, A., Schwalbe, J., Kibsgaard, J., Lin, J., Cargnello, M., Jaramillo, T., Norskov, J.
  AMER CHEMICAL SOC.2017

- **Fundamental understanding of defective carbon-based materials for electrochemical synthesis of hydrogen peroxide**
  Chen, S., Chen, Z., Siahrostami, S., Kim, T., Nordlund, D., Sokaras, D., Nowak, S., To, J., Higgins, D., Sinclair, R., Studt, F., Norskov, J., Jaramillo, et al
  AMER CHEMICAL SOC.2017
- **Vapor phase deposition of silver-copper nanoparticles for the oxygen reduction reaction**
  Gibbons, B., Higgins, D., Wette, M., Clemens, B., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Phase segregated copper silver thin films as model catalysts for electrochemical oxygen reduction in alkaline electrolytes**
  Higgins, D., Gibbons, B., Hahn, C., Wette, M., Clemens, B., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Surface structure engineering of Cu thin films for electrochemical CO2 reduction**
  Hahn, C., Hatsukade, T., Vailionis, A., Higgins, D., Nitopi, S., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Screening of binary alloy thin films for electrochemical CO2/CO reduction**
  Nitopi, S., Wang, L., Higgins, D., Guio, C., Landers, A., Hatsukade, T., Hahn, C., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Electrochemical generation of H2O2: Development of a reactor with carbon catalysts for portable low-cost water purification**
  Chen, Z., Chen, S., Siahrostami, S., Chakthranont, P., Hahn, C., Nordlund, D., Sokaras, D., Norskov, J., Bao, Z., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Operando electrochemical grazing incidence x-ray absorption and diffraction for the CO2 reduction reaction**
  Feaster, J., Farmand, M., Lin, J., Landers, A., Fackler, S., Davis, R., Mehta, A., Yano, J., Jaramillo, T., Drisdell, W.
  AMER CHEMICAL SOC.2017
- **Nanostructured tandem Si-Ta3N5 photoanodes for solar water splitting**
  Narkeviciute, I., Chakthranont, P., Mackus, A., Hahn, C., Pinaud, B., Bent, S., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Activation and stabilization of copper chalcopyrite light absorbers for photoelectrochemical hydrogen production**
  Palm, D., Hellstern, T., DeAngelis, A., Gaillard, N., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Cobalt-copper nanoparticle catalysts for higher alcohols synthesis prepared by water-in-oil microemulsion**
  Snider, J., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Molybdenum disulfide as a protection layer and catalyst for gallium indium phosphide solar water splitting photocathodes**
  Britto, R., Young, J., LaFehr, D., Benck, J., Hahn, C., Deutsch, T., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Exploring electrocatalytic N2 activation under mild synthetic conditions**
  Nielander, A., McEnaney, J., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Developing catalysts and methods for low temperature electrochemical oxidation of methane**
  Boyd, M., Hahn, C., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Au@MxOy core-shell nanoparticles as catalysts for the oxygen evolution reaction**
  Strickler, A., Escudero-Escribano, M., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Higher alcohol synthesis via Fischer-Tropsch metal surface modification of MoP catalyst**
  Valle, E., Duyar, M., Jaramillo, T.
  AMER CHEMICAL SOC.2017

- **Electrocatalyst design and development for the Oxygen Evolution Reaction (OER) and the electroreduction of CO2**
  Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Transition metal phosphide catalysts for methanol synthesis from CO and CO2**
  Duyar, M., Snider, J., Valle, E., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Integrated electrochemical-biological systems for the production of fuels and chemicals from CO2**
  Antoniuk-Pablant, A., Kracke, F., Deutzmann, J., Jaramillo, T., Spormann, A.
  AMER CHEMICAL SOC.2017
- **Enhanced electrocatalysis for polymer electrolyte membrane fuel cells and electrolyzers**
  Escudero-Escribano, M., Strickler, A., Jaramillo, T., Stephens, I., Chorkendorff, I.
  AMER CHEMICAL SOC.2017
- **Effects of alkylamine electrolyte additives on activity and selectivity in electrochemical carbon dioxide reduction**
  Lin, J., Hahn, C., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Ionic compounds for electrochemical reduction of carbon dioxide**
  Landers, A., Hellstern, T., Hahn, C., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Metal modified zirconium hydrogen phosphate for the oxygen evolution reaction**
  Sanchez, J., Ramos, M., Narkeviciute, I., Colon, J., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Exceptionally stable molybdenum disulfide protection schemes for silicon photocathodes**
  King, L., Hellstern, T., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **Nanostructured non-precious metal silicon photocathodes for solar water splitting**
  Hellstern, T., Chakthranont, P., King, L., Narkeviciute, I., Britto, R., Palm, D., Hahn, C., Jaramillo, T.
  AMER CHEMICAL SOC.2017
- **High-performance oxygen reduction and evolution carbon catalysis: From mechanistic studies to device integration** *NANO RESEARCH*
  To, J. W., Ng, J. W., Siahrostami, S., Koh, A. L., Lee, Y., Chen, Z., Fong, K. D., Chen, S., He, J., Bae, W., Wilcox, J., Jeong, H. Y., Kim, et al
  2017; 10 (4): 1163-1177
- **Development of a reactor with carbon catalysts for modular-scale, low-cost electrochemical generation of H2O2** *REACTION CHEMISTRY & ENGINEERING*
  Chen, Z., Chen, S., Siahrostami, S., Chakthranont, P., Hahn, C., Nordlund, D., Dimosthenis, S., Norskov, J. K., Bao, Z., Jaramillo, T. F.
  2017; 2 (2): 239–45
- **Operando investigation of Au-MnOx thin films with improved activity for the oxygen evolution reaction** *ELECTROCHIMICA ACTA*
  Frydendal, R., Seitz, L. C., Sokaras, D., Weng, T., Nordlund, D., Chorkendorff, I., Stephens, I. E., Jaramillo, T. F.
  2017; 230: 22-28
- **Combining theory and experiment in electrocatalysis: Insights into materials design** *SCIENCE*
  Seh, Z. W., Kibsgaard, J., Dickens, C. F., Chorkendorff, I. B., Norskov, J. K., Jaramillo, T. F.
  2017; 355 (6321): 146-?
- **Active and Stable Ir@Pt Core-Shell Catalysts for Electrochemical Oxygen Reduction** *ACS ENERGY LETTERS*
  Strickler, A. L., Jackson, A., Jaramillo, T. F.
  2017; 2 (1): 244-249
- **Electrochemical Ammonia Synthesis-The Selectivity Challenge** *ACS CATALYSIS*
  Singh, A. R., Rohr, B. A., Schwalbe, J. A., Cargnello, M., Chan, K., Jaramillo, T. F., Chorkendorff, I., Norskov, J. K.
  2017; 7 (1): 706-709

- **Top-down fabrication of fluorine-doped tin oxide nanopillar substrates for solar water splitting** *RSC ADVANCES*
  Tang, M. H., Chakthranont, P., Jaramillo, T. F.
  2017; 7 (45): 28350–57

- **Materials for solar fuels and chemicals** *NATURE MATERIALS*
  Montoya, J. H., Seitz, L. C., Chakthranont, P., Vojvodic, A., Jaramillo, T. F., Norskov, J. K.
  2017; 16 (1): 70-81

- **Materials for solar fuels and chemicals.** *Nature materials*
  Montoya, J. H., Seitz, L. C., Chakthranont, P., Vojvodic, A., Jaramillo, T. F., Nørskov, J. K.
  2016; 16 (1): 70-81

- **Tandem Core-Shell Si-Ta3N5 Photoanodes for Photoelectrochemical Water Splitting** *NANO LETTERS*
  Narkeviciute, I., Chakthranont, P., Mackus, A. J., Hahn, C., Pinaud, B. A., Bent, S. F., Jaramillo, T. F.
  2016; 16 (12): 7565-7572

- **Microfabricated electrochemical gas sensor** *MICRO & NANO LETTERS*
  Gross, P., Larsen, T., Loizeau, F., Jaramillo, T., Spitzer, D., Pruitt, B.
  2016; 11 (12): 798-802

- **Mesoporous platinum nickel thin films with double gyroid morphology for the oxygen reduction reaction** *NANO ENERGY*
  Kibsgaard, J., Jackson, A., Jaramillo, T. F.
  2016; 29: 243-248

- **Solar water splitting by photovoltaic-electrolysis with a solar-to-hydrogen efficiency over 30.** *Nature communications*
  Jia, J., Seitz, L. C., Benck, J. D., Huo, Y., Chen, Y., Ng, J. W., Bilir, T., Harris, J. S., Jaramillo, T. F.
  2016; 7: 13237-?

- **A highly active and stable IrOx/SrIrO3 catalyst for the oxygen evolution reaction** *SCIENCE*
  Seitz, L. C., Dickens, C. F., Nishio, K., Hikita, Y., Montoya, J., Doyle, A., Kirk, C., Vojvodic, A., Hwang, H. Y., Norskov, J. K., Jaramillo, T. F.
  2016; 353 (6303): 1011-1014

- **Two-Dimensional Molybdenum Carbide (MXene) as an Efficient Electrocatalyst for Hydrogen Evolution** *ACS ENERGY LETTERS*
  Seh, Z. W., Fredrickson, K. D., Anasori, B., Kibsgaard, J., Strickler, A. L., Lukatskaya, M. R., Gogotsi, Y., Jaramillo, T. F., Vojvodic, A.
  2016; 1 (3): 589-594

- **Elucidating the electronic structure of supported gold nanoparticles and its relevance to catalysis by means of hard X-ray photoelectron spectroscopy** *SURFACE SCIENCE*
  Reinecke, B. N., Kuhl, K. P., Ogasawara, H., Li, L., Voss, J., Abild-Pedersen, F., Nilsson, A., Jaramillo, T. F.
  2016; 650: 24-33

- **Molybdenum Disulfide as a Protection Layer and Catalyst for Gallium Indium Phosphide Solar Water Splitting Photocathodes** *JOURNAL OF PHYSICAL CHEMISTRY LETTERS*
  Britto, R. J., Benck, J. D., Young, J. L., Hahn, C., Deutsch, T. G., Jaramillo, T. F.
  2016; 7 (11): 2044-2049

- **Gold-supported cerium-doped NiOx catalysts for water oxidation** *NATURE ENERGY*
  Ng, J. W., Garcia-Melchor, M., Bajdich, M., Chakthranont, P., Kirk, C., Vojvodic, A., Jaramillo, T. F.
  2016; 1

- **Improving the Photoelectrochemical Performance of Hematite by Employing a High Surface Area Scaffold and Engineering Solid-Solid Interfaces** *ADVANCED MATERIALS INTERFACES*
  Chakthranont, P., Pinaud, B. A., Seitz, L. C., Forman, A. J., Jaramillo, T. F.
  2016; 3 (7)

- **Band Edge Engineering of Oxide Photoanodes for Photoelectrochemical Water Splitting: Integration of Subsurface Dipoles with Atomic-Scale Control** *ADVANCED ENERGY MATERIALS*
  Hikita, Y., Nishio, K., Seitz, L. C., Chakthranont, P., Tachikawa, T., Jaramillo, T. F., Hwang, H. Y.
  2016; 6 (7)

- **Hydrogen generation and fuel cells: Current status, research challenges, and future prospects**
  Jaramillo, T.
  AMER CHEMICAL SOC.2016
- **Design and synthesis of nitrogen-doped hierarchical carbon for selective carbon capture and electrocatalysis**
  To, J. W. F., He, J., Ng, D., Siahrostami, S., Kim, K., Koh, A., Studt, F., Norskov, J., Jaramillo, T., Wilcox, J., Bao, Z.
  AMER CHEMICAL SOC.2016
- **Tuning Composition and Activity of Cobalt Titanium Oxide Catalysts for the Oxygen Evolution Reaction** *ELECTROCHIMICA ACTA*
  Seitz, L. C., Nordlund, D., Gallo, A., Jaramillo, T. F.
  2016; 193: 240-245
- **Engineering Cobalt Phosphide (CoP) Thin Film Catalysts for Enhanced Hydrogen Evolution Activity on Silicon Photocathodes** *ADVANCED ENERGY MATERIALS*
  Hellstern, T. R., Benck, J. D., Kibsgaard, J., Hahn, C., Jaramillo, T. F.
  2016; 6 (4)
- **Chemical and Phase Evolution of Amorphous Molybdenum Sulfide Catalysts for Electrochemical Hydrogen Production.** *ACS nano*
  Lee, S. C., Benck, J. D., Tsai, C., Park, J., Koh, A. L., Abild-Pedersen, F., Jaramillo, T. F., Sinclair, R.
  2016; 10 (1): 624-632
- **Benchmarking nanoparticulate metal oxide electrocatalysts for the alkaline water oxidation reaction** *JOURNAL OF MATERIALS CHEMISTRY A*
  Jung, S., McCrory, C. C., Ferrer, I. M., Peters, J. C., Jaramillo, T. F.
  2016; 4 (8): 3068-3076
- **Electrooxidation of Alcohols with Electrode-Supported Transfer Hydrogenation Catalysts** *ACS CATALYSIS*
  Buonaiuto, M., De Crisci, A. G., Jaramillo, T. F., Waymouth, R. M.
  2015; 5 (12): 7343-7349
- **Enhancement Effect of Noble Metals on Manganese Oxide for the Oxygen Evolution Reaction** *JOURNAL OF PHYSICAL CHEMISTRY LETTERS*
  Seitz, L. C., Hersbach, T. J., Nordlund, D., Jaramillo, T. F.
  2015; 6 (20): 4178-4183
- **Enhancement Effect of Noble Metals on Manganese Oxide for the Oxygen Evolution Reaction.** *The journal of physical chemistry letters*
  Seitz, L. C., Hersbach, T. J., Nordlund, D., Jaramillo, T. F.
  2015; 6 (20): 4178-83
- **Polymer Electrolyte Membrane Electrolyzers Utilizing Non-precious Mo-based Hydrogen Evolution Catalysts.** *ChemSusChem*
  Ng, J. W., Hellstern, T. R., Kibsgaard, J., Hinckley, A. C., Benck, J. D., Jaramillo, T. F.
  2015; 8 (20): 3512-3519
- **Mapping Photoelectrochemical Current Distribution at Nanoscale Dimensions on Morphologically Controlled BiVO4** *JOURNAL OF PHYSICAL CHEMISTRY LETTERS*
  Chakthranont, P., Seitz, L. C., Jaramillo, T. F.
  2015; 6 (18): 3702-3707
- **Mapping Photoelectrochemical Current Distribution at Nanoscale Dimensions on Morphologically Controlled BiVO4.** *The journal of physical chemistry letters*
  Chakthranont, P., Seitz, L. C., Jaramillo, T. F.
  2015; 6 (18): 3702-7
- **Platinum and hybrid polyaniline-platinum surfaces for the electrocatalytic reduction of CO2** *MRS COMMUNICATIONS*
  Abram, D. N., Kuhl, K. P., Cave, E. R., Jaramillo, T. F.
  2015; 5 (2): 319-325
- **Benchmarking Hydrogen Evolving Reaction and Oxygen Evolving Reaction Electrocatalysts for Solar Water Splitting Devices** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  McCrory, C. C., Jung, S., Ferrer, I. M., Chatman, S. M., Peters, J. C., Jaramillo, T. F.

2015; 137 (13): 4347-4357

- **Semiconductor materials for efficient photoelectrochemical water splitting: The PEC working group**
  Wang, H., Jaramillo, T., Miller, E.
  AMER CHEMICAL SOC.2015

- **Simultaneous detection of electronic structure changes from two elements of a bifunctional catalyst using wavelength-dispersive X-ray emission spectroscopy and in situ electrochemistry** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*
  Gul, S., Ng, J. W., Alonso-Mori, R., Kern, J., Sokaras, D., Anzenberg, E., Lassalle-Kaiser, B., Gorlin, Y., Weng, T., Zwart, P. H., Zhang, J. Z., Bergmann, U., Yachandra, et al
  2015; 17 (14): 8901-8912

- **Designing an improved transition metal phosphide catalyst for hydrogen evolution using experimental and theoretical trends** *ENERGY & ENVIRONMENTAL SCIENCE*
  Kibsgaard, J., Tsai, C., Chan, K., Benck, J. D., Norskov, J. K., Abild-Pedersen, F., Jaramillo, T. F.
  2015; 8 (10): 3022-3029

- **CoTiOx Catalysts for the Oxygen Evolution Reaction** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Seitz, L. C., Pinaud, B. A., Nordlund, D., GORLIN, Y., Gallo, A., Jaramillo, T. F.
  2015; 162 (12): H841-H846

- **Synthesis of thin film AuPd alloys and their investigation for electrocatalytic CO2 reduction** *JOURNAL OF MATERIALS CHEMISTRY A*
  Hahn, C., Abram, D. N., Hansen, H. A., Hatsukade, T., Jackson, A., Johnson, N. C., Hellstern, T. R., Kuhl, K. P., Cave, E. R., Feaster, J. T., Jaramillo, T. F.
  2015; 3 (40): 20185-20194

- **Applications of ALD MnO to electrochemical water splitting** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*
  Pickrahn, K. L., Gorlin, Y., Seitz, L. C., Garg, A., Nordlund, D., Jaramillo, T. F., Bent, S. F.
  2015; 17 (21): 14003-14011

- **Designing Active and Stable Silicon Photocathodes for Solar Hydrogen Production Using Molybdenum Sulfide Nanomaterials** *ADVANCED ENERGY MATERIALS*
  Benck, J. D., Lee, S. C., Fong, K. D., Kibsgaard, J., Sinclair, R., Jaramillo, T. F.
  2014; 4 (18)

- **Molybdenum Phosphosulfide: An Active, Acid-Stable, Earth-Abundant Catalyst for the Hydrogen Evolution Reaction** *ANGEWANDTE CHEMIE-INTERNATIONAL EDITION*
  Kibsgaard, J., Jaramillo, T. F.
  2014; 53 (52): 14433-14437

- **Operando Characterization of an Amorphous Molybdenum Sulfide Nanoparticle Catalyst during the Hydrogen Evolution Reaction** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Casalongue, H. G., Benck, J. D., Tsai, C., Karlsson, R. K., Kaya, S., Ng, M. L., Pettersson, L. G., Abild-Pedersen, F., Norskov, J. K., Ogasawara, H., Jaramillo, T. F., Nilsson, A.
  2014; 118 (50): 29252-29259

- **Catalyzing the Hydrogen Evolution Reaction (HER) with Molybdenum Sulfide Nanonnaterials** *ACS CATALYSIS*
  Benck, J. D., Hellstern, T. R., Kibsgaard, J., Chakthranont, P., Jaramillo, T. F.
  2014; 4 (11): 3957-3971

- **Substrate Selection for Fundamental Studies of Electrocatalysts and Photoelectrodes: Inert Potential Windows in Acidic, Neutral, and Basic Electrolyte** *PLOS ONE*
  Benck, J. D., Pinaud, B. A., Gorlin, Y., Jaramillo, T. F.
  2014; 9 (10)

- **Optoelectronic properties of Ta3N5: A joint theoretical and experimental study** *PHYSICAL REVIEW B*
  Morbec, J. M., Narkeviciute, I., Jaramillo, T. F., Galli, G.
  2014; 90 (15)

- **Electrocatalytic Conversion of Carbon Dioxide to Methane and Methanol on Transition Metal Surfaces** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Kuhl, K. P., Hatsukade, T., Cave, E. R., Abram, D. N., Kibsgaard, J., Jaramillo, T. F.

2014; 136 (40): 14107-14113

- **Electrocatalytic conversion of carbon dioxide to methane and methanol on transition metal surfaces.** *Journal of the American Chemical Society*
  Kuhl, K. P., Hatsukade, T., Cave, E. R., Abram, D. N., Kibsgaard, J., Jaramillo, T. F.
  2014; 136 (40): 14107-14113
- **Nickel-silver alloy electrocatalysts for hydrogen evolution and oxidation in an alkaline electrolyte.** *Physical chemistry chemical physics*
  Tang, M. H., Hahn, C., Klobuchar, A. J., Ng, J. W., Wellendorff, J., Bligaard, T., Jaramillo, T. F.
  2014; 16 (36): 19250-19257
- **Engineering tantalum nitride photoanodes for improved activity and stability in photoelectrochemical (PEC) water splitting**
  Narkeviciute, I., Pinaud, B. A., Jaramillo, T. F.
  AMER CHEMICAL SOC.2014
- **Insights into the electrocatalytic reduction of CO2 on metallic silver surfaces.** *Physical chemistry chemical physics*
  Hatsukade, T., Kuhl, K. P., Cave, E. R., Abram, D. N., Jaramillo, T. F.
  2014; 16 (27): 13814-13819
- **A carbon-free, precious-metal-free, high-performance O-2 electrode for regenerative fuel cells and metal-air batteries** *ENERGY & ENVIRONMENTAL SCIENCE*
  Ng, J. W., Tang, M., Jaramillo, T. F.
  2014; 7 (6): 2017-2024
- **Modeling practical performance limits of photoelectrochemical water splitting based on the current state of materials research.** *ChemSusChem*
  Seitz, L. C., Chen, Z., Forman, A. J., Pinaud, B. A., Benck, J. D., Jaramillo, T. F.
  2014; 7 (5): 1372-1385
- **Understanding Interactions between Manganese Oxide and Gold That Lead to Enhanced Activity for Electrocatalytic Water Oxidation.** *Journal of the American Chemical Society*
  Gorlin, Y., Chung, C., Benck, J. D., Nordlund, D., Seitz, L., Weng, T., Sokaras, D., Clemens, B. M., Jaramillo, T. F.
  2014; 136 (13): 4920-4926
- **Insights into the electrochemical conversion of CO2 to hydrocarbons and alcohols on transition metals surfaces**
  Jaramillo, T. F., Kuhl, K. P., Cave, E. R., Abram, D. N., Hatsukade, T., Hahn, C. J., Feaster, J., Kibsgaard, J.
  AMER CHEMICAL SOC.2014
- **Building an appropriate active-site motif into a hydrogen-evolution catalyst with thiomolybdate [Mo3S13](2-) clusters.** *Nature chemistry*
  Kibsgaard, J., Jaramillo, T. F., Besenbacher, F.
  2014; 6 (3): 248-253
- **Nearly Total Solar Absorption in Ultrathin Nanostructured Iron Oxide for Efficient Photoelectrochemical Water Splitting** *ACS PHOTONICS*
  Wang, K. X., Wu, Z., Liu, V., Brongersma, M. L., Jaramillo, T. F., Fan, S.
  2014; 1 (3): 235-240
- **Controlling the Structural and Optical Properties of Ta3N5 Films through Nitridation Temperature and the Nature of the Ta Metal** *CHEMISTRY OF MATERIALS*
  Pinaud, B. A., Vailionis, A., Jaramillo, T. F.
  2014; 26 (4): 1576-1582
- **High Surface Area Transparent Conducting Oxide Electrodes with a Customizable Device Architecture** *CHEMISTRY OF MATERIALS*
  Forman, A. J., Chen, Z., Chakthranont, P., Jaramillo, T. F.
  2014; 26 (2): 958-964
- **Climbing the Activity Volcano: Core-Shell Ru@Pt Electrocatalysts for Oxygen Reduction** *CHEMELECTROCHEM*
  Jackson, A., Viswanathan, V., Forman, A. J., Larsen, A. H., Norskov, J. K., Jaramillo, T. F.
  2014; 1 (1): 67-71
- **Insights into the electrocatalytic reduction of CO2 on metallic silver surfaces** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*
  Hatsukade, T., Kuhl, K. P., Cave, E. R., Abram, D. N., Jaramillo, T. F.

2014; 16 (27): 13814-13819

- **Perfect Sunlight Absorption in Iron Oxide Photoanode**
  Wang, K., Yu, Z., Liu, V., Brongersma, M., Jaramillo, T., Fang, S., IEEE
  IEEE.2014

- **Nanostructured Manganese Oxide Supported onto Particulate Glassy Carbon as an Active and Stable Oxygen Reduction Catalyst in Alkaline-Based Fuel Cells** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Ng, J. W., Gorlin, Y., Nordlund, D., Jaramillo, T. F.
  2014; 161 (7): D3105-D3112

- **An X-ray Photoelectron Spectroscopy Study of Surface Changes on Brominated and Sulfur-Treated Activated Carbon Sorbents during Mercury Capture: Performance of Pellet versus Fiber Sorbents** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
  Saha, A., Abram, D. N., Kuhl, K. P., Paradis, J., Crawford, J. L., Sasmaz, E., Chang, R., Jaramillo, T. F., Wilcox, J.
  2013; 47 (23): 13695-13701

- **A Precious-Metal-Free Regenerative Fuel Cell for Storing Renewable Electricity** *ADVANCED ENERGY MATERIALS*
  Ng, J. W., Gorlin, Y., Hatsukade, T., Jaramillo, T. F.
  2013; 3 (12): 1545-1550

- **Benchmarking Heterogeneous Electrocatalysts for the Oxygen Evolution Reaction** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  McCrory, C. C., Jung, S., Peters, J. C., Jaramillo, T. F.
  2013; 135 (45): 16977-16987

- **Impedance-based study of capacitive porous carbon electrodes with hierarchical and bimodal porosity** *JOURNAL OF POWER SOURCES*
  Suss, M. E., Baumann, T. F., Worsley, M. A., Rose, K. A., Jaramillo, T. F., Stadermann, M., Santiago, J. G.
  2013; 241: 266-273

- **Technical and economic feasibility of centralized facilities for solar hydrogen production via photocatalysis and photoelectrochemistry** *ENERGY & ENVIRONMENTAL SCIENCE*
  Pinaud, B. A., Benck, J. D., Seitz, L. C., Forman, A. J., Chen, Z., Deutsch, T. G., James, B. D., Baum, K. N., Baum, G. N., Ardo, S., Wang, H., Miller, E., Jaramillo, et al
  2013; 6 (7): 1983-2002

- **In Situ X-ray Absorption Spectroscopy Investigation of a Bifunctional Manganese Oxide Catalyst with High Activity for Electrochemical Water Oxidation and Oxygen Reduction.** *Journal of the American Chemical Society*
  Gorlin, Y., Lassalle-Kaiser, B., Benck, J. D., Gul, S., Webb, S. M., Yachandra, V. K., Yano, J., Jaramillo, T. F.
  2013; 135 (23): 8525-8534

- **Bridging the Gap Between Bulk and Nanostructured Photoelectrodes: The Impact of Surface States on the Electrocatalytic and Photoelectrochemical Properties of MoS2** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Chen, Z., Forman, A. J., Jaramillo, T. F.
  2013; 117 (19): 9713-9722

- **Benchmarking electrocatalysts for hydrogen evolution and oxygen evolution**
  McCrory, C. C. L., Jung, S., Peters, J. C., Jaramillo, T. F.
  AMER CHEMICAL SOC.2013

- **Growth of Pt Nanowires by Atomic Layer Deposition on Highly Ordered Pyrolytic Graphite** *NANO LETTERS*
  Lee, H., Baeck, S. H., Jaramillo, T. F., Bent, S. F.
  2013; 13 (2): 457-463

- **Catalyzing chemical transformations in renewable energy: Tailoring Electrocatalyst Materials for Activity, Selectivity, and Stability**
  Jaramillo, T., F.
  2013

- **Effect of Temperature Treatment on CoTiOx Catalyst for the Oxygen Evolution Reaction** *2nd International Symposium on Electrochemical Synthesis of Fuels (ESF)*
  Seitz, L. C., Pinaud, B. A., Nordlund, D., Jaramillo, T. F.
  ELECTROCHEMICAL SOC INC.2013: 285–91

- **Solar hydrogen production by photoelectrochemical (PEC) water-splitting: Advancing technology through the synergistic activities of the PEC working group (PEC WG)**
  Jaramillo, T., F.
  2013
- **Exploring Nano-architectures of MoS2: How Surface Structure and Electronic Structure Impact H2 Production by Electrocatalysis and Solar Photoelectrochemistry**
  Jaramillo, T., F.
  2013
- **Catalyzing Electrochemical Transformations in Renewable Energy**
  Jaramillo, T., F.
  2013
- **The Impact of Surface Structure on the Electrocatalytic and Photoelectrochemical (PEC) Properties of MoS2**
  Jaramillo, T., F.
  2013
- **Electrocatalytic Conversion of Carbon Dioxide to Fuels and Chemicals on Transition Metal Electrodes**
  Jaramillo, T., F., Kuhl, K., P., Cave, E., R., Abram, D., N., Hatsukade, T.
  2013
- **Catalyzing key chemical transformations for renewable, sustainable energy**
  Jaramillo, T., F.
  2013
- **Mn3O4 Supported on Glassy Carbon: An Active Non-Precious Metal Catalyst for the Oxygen Reduction Reaction** *ACS CATALYSIS*
  Gorlin, Y., Chung, C., Nordlund, D., Clemens, B. M., Jaramillo, T. F.
  2012; 2 (12): 2687-2694
- **Engineering the surface structure of MoS2 to preferentially expose active edge sites for electrocatalysis** *NATURE MATERIALS*
  Kibsgaard, J., Chen, Z., Reinecke, B. N., Jaramillo, T. F.
  2012; 11 (11): 963-969
- **New cubic perovskites for one- and two-photon water splitting using the computational materials repository** *ENERGY & ENVIRONMENTAL SCIENCE*
  Castelli, I. E., Landis, D. D., Thygesen, K. S., Dahl, S., Chorkendorff, I., Jaramillo, T. F., Jacobsen, K. W.
  2012; 5 (10): 9034-9043
- **Active MnOx Electrocatalysts Prepared by Atomic Layer Deposition for Oxygen Evolution and Oxygen Reduction Reactions** *ADVANCED ENERGY MATERIALS*
  Pickrahn, K. L., Park, S. W., Gorlin, Y., Lee, H., Jaramillo, T. F., Bent, S. F.
  2012; 2 (10): 1269-1277
- **Mercury chemistry on brominated activated carbon** *FUEL*
  Sasmaz, E., Kirchofer, A., Jew, A. D., Saha, A., Abram, D., Jaramillo, T. F., Wilcox, J.
  2012; 99: 188-196
- **Amorphous Molybdenum Sulfide Catalysts for Electrochemical Hydrogen Production: Insights into the Origin of their Catalytic Activity** *ACS CATALYSIS*
  Benck, J. D., Chen, Z., Kuritzky, L. Y., Forman, A. J., Jaramillo, T. F.
  2012; 2 (9): 1916-1923
- **Effect of Film Morphology and Thickness on Charge Transport in Ta3N5/Ta Photoanodes for Solar Water Splitting** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Pinaud, B. A., Vesborg, P. C., Jaramillo, T. F.
  2012; 116 (30): 15918-15924
- **Meso-Structured Platinum Thin Films: Active and Stable Electrocatalysts for the Oxygen Reduction Reaction** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Kibsgaard, J., Gorlin, Y., Chen, Z., Jaramillo, T. F.

2012; 134 (18): 7758-7765

- **New insights into the electrochemical reduction of carbon dioxide on metallic copper surfaces** *ENERGY & ENVIRONMENTAL SCIENCE*
  Kuhl, K. P., Cave, E. R., Abram, D. N., Jaramillo, T. F.
  2012; 5 (5): 7050-7059
- **Simulating Linear Sweep Voltammetry from First-Principles: Application to Electrochemical Oxidation of Water on Pt(111) and Pt3Ni(111)** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Viswanathan, V., Hansen, H. A., Rossmeisl, J., Jaramillo, T. F., Pitsch, H., Norskov, J. K.
  2012; 116 (7): 4698-4704
- **Investigation of Surface Oxidation Processes on Manganese Oxide Electrocatalysts Using Electrochemical Methods and Ex Situ X-ray Photoelectron Spectroscopy** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Gorlin, Y., Jaramillo, T. F.
  2012; 159 (10): H782-H786
- **Tailoring electrocatalyst materials to enhance activity, stability, and selectivity for key energy conversion reactions**
  Jaramillo, T., F.
  2012
- **Tailoring electrocatalyst materials to enhance activity, stability, and selectivity for key energy conversion reactions**
  Jaramillo, T., F.
  2012
- **Engineering the Surface Structure of MoS2 Through Morphological Control At the Nano-Scale for Enhanced Electrocatalytic Hydrogen Production**
  Jaramillo, T., F., Chen, Z., Kibsgaard, J., Reinecke, B., N.
  2012
- **Bridging the gap between optical absorption and charge transport in metal oxide materials for the synthesis of solar fuels**
  Jaramillo, T., F., Forman, A., J., Chen, Z., Thomann, I., Pinaud, B., A., Cho, I., S.
  2012
- **Tailoring Electrocatalyst Materials at the Nano-Scale: Controlling Activity, Selectivity, and Stability for Energy Conversion Reactions**
  Jaramillo, T., F.
  2012
- **Tailoring Electrocatalyst Materials at the Nano-Scale: Controlling Activity, Selectivity, and Stability for Energy Conversion Reactions**
  Jaramillo, T., F.
  2012
- **Solar Fuels by Photocatalysis and Photoelectrochemistry**
  Jaramillo, T., F.
  2012
- **Insights into the electrochemical conversion of CO2 to fuels and chemicals on transition metal surfaces**
  Jaramillo, T., F., Kuhl, K., P., Cave, E., R., Abram, D., N., Hatsukade, T.
  2012
- **Directed Nano-scale and Macro-scale Architectures for Semiconductor Absorbers and Transparent Conducting Substrates for Photoelectrochemical Water Splitting**
  Jaramillo, T., F., Forman, A., Chen, Z., Pinaud, B., A., Seitz, L., Jackson, A.
  2012
- **Addressing charge transport limitations in thin film Ta3N5 & TaON photoanodes for solar fuel synthesis**
  Jaramillo, T., F., Pinaud, B., A.
  2012
- **Energy Storage by Means of Renewable Fuels**
  Jaramillo, T., F.
  2012

- **Electrocatalyst development for renewable energy: Engineering surface structure at the atomic-scale by controlling morphology at the nano-scale**
  Jaramillo, T., F.
  2012
- **Tailoring Electrocatalyst Materials at the Nano-Scale: Controlling Activity, Selectivity, and Stability for Energy Conversion Reactions**
  Jaramillo, T., F.
  2012
- **Electrocatalyst development for the synthesis of renewable fuels from water and CO2**
  Jaramillo, T., F.
  2012
- **A tutorial on electrocatalysis: Concepts, fundamentals, methods, and applications**
  Jaramillo, T., F.
  2012
- **Identifying active surface phases for metal oxide electrocatalysts: a study of manganese oxide bi-functional catalysts for oxygen reduction and water oxidation catalysis** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*
  Su, H., Gorlin, Y., Man, I. C., Calle-Vallejo, F., Norskov, J. K., Jaramillo, T. F., Rossmeisl, J.
  2012; 14 (40): 14010-14022
- **Addressing the terawatt challenge: scalability in the supply of chemical elements for renewable energy** *RSC ADVANCES*
  Vesborg, P. C., Jaramillo, T. F.
  2012; 2 (21): 7933-7947
- **Tailoring Electrocatalyst Materials at the Nano-Scale: Controlling Activity, Selectivity, and Stability for Energy Conversion Reactions**
  Jaramillo, T., F.
  2012
- **Electrocatalyst development for the synthesis of renewable fuels from water and CO2**
  Jaramillo, T., F.
  2012
- **A tutorial on electrocatalysis: Concepts, fundamentals, methods, and applications**
  Jaramillo, T., F.
  2012
- **Identifying active surface phases for metal oxide electrocatalysts: a study of manganese oxide bi-functional catalysts for oxygen reduction and water oxidation catalysis** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*
  Su, H., Gorlin, Y., Man, I. C., Calle-Vallejo, F., Norskov, J. K., Jaramillo, T. F., Rossmeisl, J.
  2012; 14 (40): 14010-14022
- **Addressing the terawatt challenge: scalability in the supply of chemical elements for renewable energy** *RSC ADVANCES*
  Vesborg, P. C., Jaramillo, T. F.
  2012; 2 (21): 7933-7947
- **Branched TiO2 Nanorods for Photoelectrochemical Hydrogen Production** *NANO LETTERS*
  Cho, I. S., Chen, Z., Forman, A. J., Kim, D. R., Rao, P. M., Jaramillo, T. F., Zheng, X.
  2011; 11 (11): 4978-4984
- **Core-shell MoO3-MoS2 Nanowires for Hydrogen Evolution: A Functional Design for Electrocatalytic Materials** *NANO LETTERS*
  Chen, Z., Cummins, D., Reinecke, B. N., Clark, E., Sunkara, M. K., Jaramillo, T. F.
  2011; 11 (10): 4168-4175
- **Plasmon Enhanced Solar-to-Fuel Energy Conversion** *NANO LETTERS*
  Thomann, I., Pinaud, B. A., Chen, Z., Clemens, B. M., Jaramillo, T. F., Brongersma, M. L.
  2011; 11 (8): 3440-3446
- **Universality in Oxygen Evolution Electrocatalysis on Oxide Surfaces** *CHEMCATCHEM*

Man, I. C., Su, H., Calle-Vallejo, F., Hansen, H. A., Martinez, J. I., Inoglu, N. G., Kitchin, J., Jaramillo, T. F., Norskov, J. K., Rossmeisl, J.
2011; 3 (7): 1159-1165

- **Thin Films of Sodium Birnessite-Type MnO2: Optical Properties, Electronic Band Structure, and Solar Photoelectrochemistry** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Pinaud, B. A., Chen, Z., Abram, D. N., Jaramillo, T. F.
  2011; 115 (23): 11830-11838
- **Electrocatalysis on manganese oxide surfaces: Oxygen reduction and water oxidation** *241st National Meeting and Exposition of the American-Chemical-Society (ACS)*
  Jaramillo, T. F., Gorlin, Y., Baeck, S., Pinaud, B. A.
  AMER CHEMICAL SOC.2011
- **Ex-situ Spectroscopy Study of Manganese Oxide Catalytic Surfaces under Reaction Conditions Relevant to Oxygen Reduction and Oxygen Evolution** *11th Polymer Electrolyte Fuel Cell Symposium (PEFC) Under the Auspices of the 220th Meeting of the ECS*
  GORLIN, Y., Jaramillo, T. F.
  ELECTROCHEMICAL SOC INC.2011: 1701–7
- **Tailoring Electrocatalyst Materials at the Nano-Scale: Controlling Activity, Selectivity, and Stability for Energy Conversion Reactions**
  Jaramillo, T., F.
  2011
- **Nanostructured electrocatalysts for energy conversion reactions**
  Jaramillo, T., F.
  2011
- **Nanomaterials for efficient chemical transformations in energy conversion reactions**
  Jaramillo, T., F.
  2011
- **Catalyzing the production of clean fuels from renewable energy resources**
  Jaramillo, T., F.
  2011
- **Tailoring electrocatalyst materials at the nano-scale: Controlling activity, selectivity, and stability for energy conversion reactions**
  Jaramillo, T., F.
  2011
- **Tailoring Electrocatalyst Materials at the Nano-Scale: Controlling Activity, Selectivity, and Stability for Energy Conversion Reactions**
  Jaramillo, T., F.
  2011
- **Nano-architectures for 3rd generation PEC devices: A study of MoS2, fundamental investigations and applied research**
  Jaramillo, T., F.
  2011
- **Engineering catalysts at the nano-scale for energy conversion reactions**
  Jaramillo, T., F.
  2011
- **Tailoring electrocatalyst materials at the nano-scale: Controlling activity and selectivity for energy conversion reactions**
  Jaramillo, T., F.
  2011
- **Tailoring electrocatalyst materials at the nano-scale: Controlling activity and selectivity for energy conversion reactions**
  Jaramillo, T., F.
  2011
- **Semiconductors and catalysts for the production of solar fuels**
  Jaramillo, T., F.
  2011

- **Non-precious metal catalysts for electrochemical transformations between H2, O2, and H2O**
  Jaramillo, T., F.
  2011
- **Electrocatalytic conversion of CO2 to fuels on metal surfaces**
  Jaramillo, T., F.
  2011
- **Electrocatalytic Conversion of CO2 to Fuels on Metal Surfaces**
  Jaramillo, T., F., Kuhl, K., P., Cave, E., Abram, D., N.
  2011
- **Tailoring Electrocatalyst Materials at the Nano-Scale: Controlling Activity, Selectivity, and Stability for Energy Conversion Reactions**
  Jaramillo, T., F.
  2011
- **Tailoring electrocatalyst materials at the nano-scale: Controlling activity and selectivity for energy conversion reactions**
  Jaramillo, T., F.
  2011
- **Tailoring electrocatalyst materials at the nano-scale: Controlling activity and selectivity for energy conversion reactions**
  Jaramillo, T., F.
  2011
- **Nanostructured Catalysts for Chemical Transformations in Energy**
  Jaramillo, T., F.
  2011
- **Advanced electrode and photo-electrode structures for the synthesis of fuels from sunlight**
  Jaramillo, T., F., Forman, A., J., Chen, Z., Pinaud, B., A., Benck, J., D., Baeck, S., H.
  2011
- **Double Gyroid Nanostructured Platinum As Highly Durable Oxygen Reduction Reaction Electrocatalyst**
  Jaramillo, T., F., Kibsgaard, J., Gorlin, Y.
  2011
- **A Bifunctional Nonprecious Metal Catalyst for Oxygen Reduction and Water Oxidation** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Gorlin, Y., Jaramillo, T. F.
  2010; 132 (39): 13612-13614
- **Nanostructured MoS2 for solar hydrogen production**
  Chen, Z., Choi, S., Kibsgaard, J., Jaramillo, T. F.
  AMER CHEMICAL SOC.2010
- **Accelerating materials development for photoelectrochemical hydrogen production: Standards for methods, definitions, and reporting protocols** *JOURNAL OF MATERIALS RESEARCH*
  Chen, Z., Jaramillo, T. F., Deutsch, T. G., Kleiman-Shwarsctein, A., Forman, A. J., Gaillard, N., Garland, R., Takanabe, K., Heske, C., Sunkara, M., McFarland, E. W., Domen, K., Miller, et al
  2010; 25 (1): 3-16
- **Developing solid-state electrocatalysts based on design principles from nature: The oxidation of water and the reduction of CO2 to fuels**
  Jaramillo, T., F.
  2010
- **Nanostructured MoS2 and WS2 for the solar production of hydrogen**
  Jaramillo, T., F.
  2010
- **Nano-structured materials for the synthesis of fuels from sunlight**
  Jaramillo, T., F.

2010

- **Surface electrocatalysis for fuel synthesis: Inspiration from nature**
  Jaramillo, T., F.
  2010
- **Nano-scaled materials for the synthesis of fuels from sunlight**
  Jaramillo, T., F.
  2010
- **Nano-scaled materials for the synthesis of fuels from sunlight**
  Jaramillo, T., F.
  2010
- **Nano-scaled materials for the synthesis of fuels from sunlight**
  Jaramillo, T., F.
  2010
- **Nano-scaled materials for the synthesis of fuels from sunlight**
  Jaramillo, T., F.
  2010
- **In pursuit of a reversible oxygen electrode: Water oxidation and oxygen reduction on electro-catalytic oxide surfaces**
  Jaramillo, T., F.
  2010
- **Bi-functional electrocatalysis on manganese oxide surfaces: oxygen reduction and water oxidation**
  Jaramillo, T., F.
  2010
- **Nanostructuring MoS2 for Photoelectrochemical Water Splitting** *Conference on Solar Hydrogen and Nanotechnology V*
  Chen, Z., Kibsgaard, J., Jaramillo, T. F.
  SPIE-INT SOC OPTICAL ENGINEERING.2010
- **Monolithic III-V Nanowire PV for Photoelectrochemical Hydrogen Generation** *35th IEEE Photovoltaic Specialists Conference*
  Ba, X., Pinaud, B. A., Parker, J., Aloni, S., Jaramillo, T. F., Wong, H. P.
  IEEE.2010: 1793–1796
- **Alloys of platinum and early transition metals as oxygen reduction electrocatalysts** *NATURE CHEMISTRY*
  Greeley, J., Stephens, I. E., Bondarenko, A. S., Johansson, T. P., Hansen, H. A., Jaramillo, T. F., Rossmeisl, J., Chorkendorff, I., Norskov, J. K.
  2009; 1 (7): 552-556
- **Combined spectroscopy and microscopy of supported MoS2 nanoparticles** *SURFACE SCIENCE*
  Nielsen, J. H., Bech, L., Nielsen, K., Tison, Y., Jorgensen, K. P., Bonde, J. L., Horch, S., Jaramillo, T. F., Chorkendorff, I.
  2009; 603 (9): 1182-1189
- **Electrocatalytic Activity of Gold-Platinum Clusters for Low Temperature Fuel Cell Applications** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Tang, W., Jayaraman, S., Jaramillo, T. F., Stucky, G. D., McFarland, E. W.
  2009; 113 (12): 5014-5024
- **Dynamics of Surface Exchange Reactions Between Au and Pt for HER and HOR** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Abrams, B. L., Vesborg, P. C., Bonde, J. L., Jaramillo, T. F., Chorkendorff, I.
  2009; 156 (2): B273-B282
- **Photon absorbers and energy conversion catalysts: New approaches to solar fuels**
  Jaramillo, T., F.
  2009
- **Nanostructured MoS2 for the Photoelectrochemical Production of Hydrogen**
  Jaramillo, T., F.

2009

- **Nanostructured MoS2 and WS2 for the solar production of hydrogen**
  Jaramillo, T., F.
  2009
- **Nanostructured MoS2 and WS2 for the solar production of hydrogen**
  Jaramillo, T., F.
  2009
- **Nanostructured MoS2 and WS2 for the solar production of hydrogen**
  Jaramillo, T., F.
  2009
- **Nano-scaled semiconductors and novel catalysts for the synthesis of fuels from sunlight**
  Jaramillo, T., F.
  2009
- **Designing new electrocatalysts: A case study of the hydrogen evolution reaction (HER)**
  Jaramillo, T., F.
  2009
- **Electrocatalytic activity of gold-platinum clusters for low temperature fuel cell applications** *Journal of Physical Chemistry C*
  Tang, W., Jayaraman, S., Jaramillo, T., F., Stucky, G., D., McFarland, E., W.
  2009; 113 (12): 5014-5024
- **Combined spectroscopy and microscopy of supported MoS2 nanoparticles** *Surface Science*
  Nielsen, J., H., Jørgensen, K., P., Bonde, J., Nielsen, K., Bech, L., Tison, Y., Jaramillo, T. F.
  2009; 603 (9): 1182-1189
- **Alloys of platinum and early transition metals as oxygen reduction electrocatalysts** *Nature Chemistry*
  Greeley, J., Stephens, I., E.L., Bondarenko, A., S., Johansson, T., P., Hansen, H., A., Jaramillo, T., F.
  2009; 1 (7): 552-556
- **Designing new electrocatalysts for the hydrogen evolution reaction (HER): combining theory and experiment**
  Jaramillo, T., F., Jørgensen, K., P., Bonde, J., Greeley, J., Zhang, J., Ooi, B., L.
  2009
- **Solar Fuels by Photoelectrochemistry (PEC)**
  Jaramillo, T., F.
  2009
- **Nano-structured MoS2 and WS2 for the Solar Production of Hydrogen**
  Jaramillo, T., F.
  2009
- **Nano-scaled materials for the synthesis of fuels from sunlight**
  Jaramillo, T., F.
  2009
- **Designing nano-scaled, non-precious metal catalysts for hydrogen evolution**
  Jaramillo, T., F., Jørgensen, K., P., Bonde, J., Greeley, J., Zhang, J., Ooi, B., L.
  2009
- **Nano-scaled materials for the synthesis of fuels from sunlight**
  Jaramillo, T., F.
  2009
- **The Dynamics of Surface Exchange Reactions Between Au and Pt for the Hydrogen Evolution Reaction (HER) and the Hydrogen Oxidation Reaction (HOR)** *Journal of the Electrochemical Society*
  Abrams, B., L., Vesborg, P., C.K., Bonde, J., Jaramillo, T., F., Chorkendorff, I.

2009; 156 (2): B273-B282

- **Hydrogen Evolution on Supported Incomplete Cubane-type [Mo3S4](4+) Electrocatalysts** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Jaramillo, T. F., Bonde, J., Zhang, J., Ooi, B., Andersson, K., Ulstrup, J., Chorkendorff, I.
  2008; 112 (45): 17492-17498
- **Hydrogen evolution on nano-particulate transition metal sulfides** *Conference on Electrocatalysis Theory and Experiment at the Interface*
  Bonde, J., Moses, P. G., Jaramillo, T. F., Norskov, J. K., Chorkendorff, I.
  ROYAL SOC CHEMISTRY.2008: 219–231
- **Steady state oxygen reduction and cyclic voltammetry** *Conference on Electrocatalysis Theory and Experiment at the Interface*
  Rossmeisl, J., Karlberg, G. S., Jaramillo, T., Norskov, J. K.
  ROYAL SOC CHEMISTRY.2008: 337–346
- **Designing novel electrocatalytic materials: a case study of the hydrogen evolution reaction (HER).**
  Jaramillo, T., F., Jørgensen, K., P., Bonde, J., Nielsen, J., H., Chorkendorff, I., Horch, S.
  2008
- **Designing electrocatalysts for the hydrogen evolution reaction.**
  Jaramillo, T., F.
  2008
- **Steady state oxygen reduction reaction and cyclic voltammetry**
  Rossmeisl, J., Karlberg, G., S., Jaramillo, T., F., Nørskov, J., K
  2008
- **Solar fuels by photoelectrochemistry: Prospects and challenges.**
  Jaramillo, T., F.
  2008
- **Precious-metal and non-precious metal based nano-scale electrocatalysts for electrocatalytic hydrogen evolution.**
  Jaramillo, T., F., Ulstrup, J., Nørskov, J., K., Chorkendorff, I.
  2008
- **New materials for electrocatalytic hydrogen production: from alloys to nanoparticles**
  Jaramillo, T., F., Jørgensen, K., P., Bonde, J., Horch, S., Nielsen, J., H., Chorkendorff, I.
  2008
- **Developing new hydrogen evolution electrocatalysts: metal surface alloys and nano-scale molybdenum sulfides.**
  Jaramillo, T., F., Jørgensen, K., P., Bonde, J., Nielsen, J., H., Horch, S., Nørskov, J., K.
  2008
- **Designing new electrocatalytic materials for the hydrogen evolution reaction (HER).**
  Jaramillo, T., F.
  2008
- **Electrocatalytic materials for the hydrogen evolution reaction.**
  Jaramillo, T., F.
  2008
- **Designing non-noble metal electrocatalysts: An investigation of the hydrogen evolution reaction.**
  Jaramillo, T., F.
  2008
- **Non-precious metal electrocatalysts for the hydrogen evolution reaction (HER): Inspiration for designing new PEC materials**
  Jaramillo, T., F.
  2008
- **In the pursuit of active, non-precious metal electrocatalysts: A study of the hydrogen evolution reaction (HER).**
  Jaramillo, T., F., Jørgensen, K., P., Bonde, J., Nielsen, J., H., Chorkendorff, I., Horch, S.

2008

- **Cyclic voltammograms for H on Pt(111) and Pt(100) from first principles** *PHYSICAL REVIEW LETTERS*
  Karlberg, G. S., Jaramillo, T. F., Skulason, E., Rossmeisl, J., Bligaard, T., Norskov, J. K.
  2007; 99 (12)
- **Identification of active edge sites for electrochemical H-2 evolution from MoS2 nanocatalysts** *SCIENCE*
  Jaramillo, T. F., Jorgensen, K. P., Bonde, J., Nielsen, J. H., Horch, S., Chorkendorff, I.
  2007; 317 (5834): 100-102
- **From theory to experiment: New electrocatalysts for the hydrogen evolution reaction**
  Jaramillo, T., F., Jørgensen, K., P., Bonde, J., Greeley, J., Nielsen, J., H., Horch, S.
  2007
- **Nano-scale molybdenum sulfides for electrocatalytic hydrogen evolution**
  Jaramillo, T., F., Jørgensen, K., P., Bonde, J., Horch, S., Nielsen, J., H., Chorkendorff, I.
  2007
- **From alloys to bio-mimetic materials: searching for new hydrogen evolution electrocatalysts**
  Jaramillo, T., F., Jørgensen, K., P., Bonde, J., Greeley, J., Saadi, S., Fernandez, E.
  2007
- **Identification of Active Edge Sites for Electrochemical H2 Evolution from MoS2 Nanocatalysts** *Science*
  Jaramillo, T., F., Jørgensen, K., P., Bonde, J., Nielsen, J., H., Horch, S., Chorkendorff, I.
  2007; 317 (5834): 100-102
- **Cyclic voltammograms for H on Pt(111) and Pt(100) from first principles** *Physical Review Letters*
  Karlberg, G., S., Jaramillo, T., F., Skúlason, E., Rossmeisl, J., Bligaard, T., Nørskov, J., K.
  2007; 99 (126101)
- **Computational high-throughput screening of electrocatalytic materials for hydrogen evolution** *NATURE MATERIALS*
  Greeley, J., Jaramillo, T. F., Bonde, J., Chorkendorff, I. B., Norskov, J. K.
  2006; 5 (11): 909-913
- **New electrode materials for hydrogen production: A focus on nanoparticulate molybdenum sulfides**
  Jaramillo, T., F., Jørgensen, K., P., Saadi, S., Bonde, J., Fernandez, E., Zhang, J.
  2006
- **Low-voltage electrodeposition of fullerol thin films from aqueous solutions** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Kleiman-Shwarsctein, A., Jaramillo, T. F., Baeck, S., Sushchikh, M., McFarland, E. W.
  2006; 153 (7): C483-C487
- **New materials for hydrogen production: Nanoparticulate molybdenum sulfides**
  Jaramillo, T., F., Jørgensen, K., P., Saadi, S., Bonde, J., Fernandez, E., Zhang, J.
  2006
- **Electrocatalysis at nanometer and sub-nanometer scales: Hydrogen evolution on supported MoS2 and Mo3S4 clusters**
  Jaramillo, T., F., Jørgensen, K., P., Saadi, S., Bonde, J., Fernandez, E., Zhang, J.
  2006
- **Low-voltage electrodeposition of fullerol thin films from aqueous solutions** *Journal of the Electrochemical Society*
  Kleiman-Shwarsctein, A., Jaramillo, T., F., Baeck, S., H., Sushchikh, M., McFarland, E., W.
  2006; 153 (7): C483-C487
- **New materials for hydrogen evolution: From alloys to nanoparticles**
  Jaramillo, T., F., Jørgensen, K., P., Bonde, J., Greeley, J., Nielsen, J., H., Horch, S.
  2006
- **Nanoparticulate MoS2 electrocatalysts for hydrogen evolution**
  Jaramillo, T., F., Jørgensen, K., P., Bonde, J., Horch, S., Nielsen, J., H., Chorkendorff, I.

2006

- **Biocatalysis and biomimetics for electrochemical hydrogen conversion. Electrocatalysis at the sub-nanometer scale: structure and function of supported Mo3S4 clusters**
  Jaramillo, T., F., Saadi, S., Bonde, J., Zhang, J., Kristensen, J., Ooi, B., L.
  2006
- **Computational high-throughput screening of electrocatalytic materials for hydrogen evolution** *Nature Materials*
  Greeley, J., Jaramillo, T., F., Bonde, J., Chorkendorff, I., Nørskov, J., K.
  2006; 5 (11): 909-913
- **Synthesis and characterization of Pt-WO3 as methanol oxidation catalysts for fuel cells** *JOURNAL OF PHYSICAL CHEMISTRY B*
  Jayaraman, S., Jaramillo, T. F., Baeck, S. H., McFarland, E. W.
  2005; 109 (48): 22958-22966
- **Combinatorial electrochemical synthesis and screening of Pt-WO3 catalysts for electro-oxidation of methanol** *REVIEW OF SCIENTIFIC INSTRUMENTS*
  Jayaraman, S., Baeck, S. H., Jaramillo, T. F., Kleiman-Shwarsctein, A., McFarland, E. W.
  2005; 76 (6)
- **Synthesis of Au nanoclusters supported upon a TiO2 nanotube array** *JOURNAL OF MATERIALS RESEARCH*
  Liu, X., Jaramillo, T. F., Kolmakov, A., Baeck, S. H., Moskovits, M., Stucky, G. D., McFarland, E. W.
  2005; 20 (5): 1093-1096
- **Automated electrochemical synthesis and photoelectrochemical characterization of Zn1-xCoxO thin films for solar hydrogen production** *JOURNAL OF COMBINATORIAL CHEMISTRY*
  Jaramillo, T. F., Baeck, S. H., Kleiman-Shwarsctein, A., Choi, K. S., Stucky, G. D., McFarland, E. W.
  2005; 7 (2): 264-271
- **Combinatorial electrochemical synthesis and screening of Pt-WO3 catalysts for electro-oxidation of methanol** *Review of Scientific Instruments*
  Jayaraman, S., Baeck, S., H., Jaramillo, T., F., Kleiman-Shwarsctein, A., McFarland, E., W.
  2005; 76 (6)
- **Automated electrochemical synthesis and characterization of TiO2 supported Au nanoparticle electrocatalysts** *MEASUREMENT SCIENCE & TECHNOLOGY*
  Baeck, S. H., Jaramillo, T. F., Kleiman-Shwarsctein, A., McFarland, E. W.
  2005; 16 (1): 54-59
- **High-throughput methods for the investigation of photoelectrochemical hydrogen production from Zn1-xCoxO thin films**
  Jaramillo, T., F., Baeck, S., H., Kleiman-Shwarsctein, A., McFarland, E., W.
  2005
- **Mixed-metal nanoparticles for fuel cell catalysis**
  Jaramillo, T., F., Jayaraman, S., McFarland, E., W.
  2005
- **Combinatorial Discovery: New Materials for Photoelectrochemical Hydrogen Production**
  Jaramillo, T., F., Baeck, S., H., Kleiman-Shwarsctein, A., McFarland, E., W.
  2005
- **Synthesis and characterization of Pt-WO3 films as methanol oxidation catalysts for low-temperature polymer electrolyte membrane fuel cells** *Journal of Physical Chemistry B*
  Jayaraman, S., Jaramillo, T., F., Baeck, S., H., McFarland, E., W.
  2005; 109 (48): 22958-22966
- **Optimized Materials for Photoelectrochemical Hydrogen Production**
  Jaramillo, T., F.
  2005
- **New materials for energy conversion reactions: photoelectrochemical hydrogen production and electrocatalytic methanol oxidation**

Jaramillo, T., F., Jayaraman, S., Baeck, S.-H, Kleiman-Shwarsctein, A., McFarland, E., W.
2005

- **Automated electrochemical synthesis and photoelectrochemical characterization of Zn1-xCoxO thin films for solar hydrogen production** *Journal of Combinatorial Chemistry*
  Jaramillo, T., F., Baeck, S., H., Kleiman-Shwarsctein, A., Choi, K., S., Stucky, G., D., McFarland, E., W.
  2005; 7 (2): 264-271

- **Automated electrochemical synthesis and characterization of TiO2 supported Au nanoparticle electrocatalysts** *Measurement Science & Technology*
  Baeck, S., H., Jaramillo, T., F., Kleiman-Shwarsctein, A., McFarland, E., W.
  2005; 16 (1): 54-59

- **Photoelectrochemical hydrogen production: a combinatorial investigation of ZnO-based materials**
  Jaramillo, T., F., Baeck, S.-H, Kleiman-Shwarsctein, A., McFarland, E., W.
  2005

- **New materials for photoelectrochemical hydrogen production: A high-throughput investigation**
  Jaramillo, T., F., Baeck, S.-H, Kleiman-Shwarsctein, A., McFarland, E., W.
  2005

- **High throughput investigation of new materials for the photoelectrochemical production of hydrogen**
  Jaramillo, T., F., Baeck, S., H., Kleiman-Shwarsctein, A., McFarland, E., W.
  2005

- **Doped semiconductors and mixed-metal nanoparticles: New materials for energy conversion reactions**
  Jaramillo, T., F., Jayaraman, S., Baeck, S., H., Kleiman-Shwarsctein, A., McFarland, E., W.
  2005

- **Synthesis of titania nanotubes with supported Au nanoclusters** *Journal of Materials Research*
  Liu, X., Jaramillo, T., F., Kolmokov, A., Baeck, S., H., Moskovits, M., Stucky, G.
  2005; 20 (5): 1093-1096

- **Gas-phase catalysis by micelle derived Au nanoparticles on oxide supports** *CATALYSIS LETTERS*
  Chou, J., Franklin, N. R., Baeck, S. H., Jaramillo, T. F., McFarland, E. W.
  2004; 95 (3-4): 107-111

- **Parallel synthesis and characterization of photoelectrochemically and electrochromically active tungsten-molybdenum oxides** *CHEMICAL COMMUNICATIONS*
  Baeck, S. H., Jaramillo, T. F., Jeong, D. H., McFarland, E. W.
  2004: 390-391

- **Combinatorial electrochemical synthesis and screening of mesoporous ZnO for photocatalysis** *Workshop on Combinatorial and High-Throughput Approaches in Polymer and Materials Science*
  Jaramillo, T. F., Baeck, S. H., Kleiman-Shwarsctein, A., McFarland, E. W.
  WILEY-V C H VERLAG GMBH.2004: 297–301

- **Combinatorial electrochemical synthesis and screening of mesoporous ZnO for photocatalysis** *Macromolecular Rapid Communications*
  Jaramillo, T., F., Baeck, S., H., Kleiman-Shwarsctein, A., McFarland, E., W.
  2004; 25 (1): 297-301

- **Structure, composition, and morphology of photoelectrochemically active TiO2-xNx thin films deposited by reactive DC magnetron sputtering** *Journal of Physical Chemistry B*
  Mwabora, J., M., Lindgren, T., Avendaño, E., Jaramillo, T, .F., Lu, J., Lindquist, S., E.
  2004; 108 (52): 20193-20198

- **Parallel synthesis and characterization of photoelectrochemically and electrochromically active tungsten molybdenum oxides** *Chemical Communications*
  Baeck, S., H., Jaramillo, T., F., Jeong, D., H., McFarland, E., W.
  2004; 4: 390-391

- **Size- and support-dependent electronic and catalytic properties of Au-0/Au3+ nanoparticles synthesized from block copolymer micelles** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Cuenya, B. R., Baeck, S. H., Jaramillo, T. F., McFarland, E. W.
  2003; 125 (42): 12928-12934
- **Synthesis of tungsten oxide on copper surfaces by electroless deposition** *CHEMISTRY OF MATERIALS*
  Baeck, S. H., Jaramillo, T. F., Stucky, G. D., McFarland, E. W.
  2003; 15 (18): 3411-3413
- **Enhancement of photocatalytic and electrochromic properties of electrochemically fabricated mesoporous WO3 thin films** *ADVANCED MATERIALS*
  Baeck, S. H., Choi, K. S., Jaramillo, T. F., Stucky, G. D., McFarland, E. W.
  2003; 15 (15): 1269-?
- **Catalytic activity of supported au nanoparticles deposited from block copolymer micelles** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
  Jaramillo, T. F., Baeck, S. H., Cuenya, B. R., McFarland, E. W.
  2003; 125 (24): 7148-7149
- **A CU2O/TiO2 heterojunction thin film cathode for photoelectrocatalysis** *SOLAR ENERGY MATERIALS AND SOLAR CELLS*
  Siripala, W., Ivanovskaya, A., Jaramillo, T. F., Baeck, S. H., McFarland, E. W.
  2003; 77 (3): 229-237
- **Enhancement of photocatalytic and electrochromic properties of electrochemically fabricated mesoporous WO3 thin films** *Advanced Materials*
  Baeck, S., H., Choi, K., S., Jaramillo, T., F., Stucky, G., D., McFarland, E., W.
  2003; 15 (15): 1269-1273
- **Photoelectrochemical Hydrogen Production Using New Combinatorial Chemistry Derived Materials**
  Jaramillo, T., F., Baeck, S.-H, Kleiman-Shwarsctein, A., McFarland, E., W.
  2003
- **Combinatorial Investigation of New Materials for Photoelectrochemical Hydrogen Production**
  Jaramillo, T., F., Baeck, S., H., Kleiman-Shwarsctein, A., Choi, K.-S, Stucky, G., D., McFarland, E., W.
  2003
- **Catalytic activity of supported Au nanoparticles deposited from block copolymer micelles** *Journal of the American Chemical Society*
  Jaramillo, T., F., Baeck, S., H., Roldan-Cuenya, B., McFarland, E., W.
  2003; 125 (24): 7148-7149
- **A Cu2O/TiO2 heterojunction thin film cathode for photoelectrocatalysis** *Solar Energy Materials and Solar Cells*
  Siripala, W., Ivanovskaya, A., Jaramillo, T., F., Baeck, S., H., McFarland, E., W.
  2003; 77 (3): 229-237
- **Size and support dependent electronic and catalytic properties of Au0/Au3+ nanoparticles synthesized from block co-polymer micelles** *Journal of the American Chemical Society*
  Roldan-Cuenya, B., Baeck, S., H., Jaramillo, T., F., McFarland, E., W.
  2003; 125 (42): 12928-12934
- **Combinatorial Electrochemical Synthesis and Screening of Transition-Metal Doped Zinc Oxides as Water-Splitting Photocatalysts for H2 Production**
  Jaramillo, T., F., Choi, K.-S, Baeck, S., H., McFarland, E., W.
  2003
- **Synthesis of tungsten oxide on copper surfaces by electroless deposition** *Chemistry of Materials*
  Baeck, S., H., Jaramillo, T., F., Stucky, G., D., McFarland, E., W.
  2003; 15 (18): 3411-3413
- **Combinatorial electrochemical synthesis and characterization of tungsten-based mixed-metal oxides** *JOURNAL OF COMBINATORIAL CHEMISTRY*
  Baeck, S. H., Jaramillo, T. F., Brandli, C., McFarland, E. W.

2002; 4 (6): 563-568

- **Controlled electrodeposition of nanoparticulate tungsten oxide** *NANO LETTERS*
  Baeck, S. H., Jaramillo, T., Stucky, G. D., McFarland, E. W.
  2002; 2 (8): 831-834
- **Influence of composition and morphology on photo and electrocatalytic activity of electrodeposited Pt/WO3**
  Baeck, S., H, Jaramillo, T., F., McFarland, E., W.
  2002
- **High-throughput screening system for catalytic hydrogen-producing materials** *JOURNAL OF COMBINATORIAL CHEMISTRY*
  Jaramillo, T. F., Ivanovskaya, A., McFarland, E. W.
  2002; 4 (1): 17-22
- **Controlled electrodeposition of nanoparticulate tungsten oxide** *Nano Letters*
  Baeck, S., H., Jaramillo, T., F., Stucky, G., D., McFarland, E.
  2002; 2 (8): 831-834
- **Combinatorial electrochemical synthesis and characterization of tungsten-based mixed metal oxides** *Journal of Combinatorial Chemistry*
  Baeck, S., H., Jaramillo, T., F., Brändli, C., McFarland, E.
  2002; 4 (6): 563-568
- **High-throughput screening system for catalytic hydrogen-producing materials** *Journal of Combinatorial Chemistry*
  Jaramillo, T., F., Ivanovskaya, A., McFarland, E., W.
  2002; 4 (1): 17-22
- **Automated synthesis and characterization of diverse libraries of macroporous alumina** *ELECTROCHIMICA ACTA*
  Brandli, C., Jaramillo, T. F., Ivanovskaya, A., McFarland, E. W.
  2001; 47 (4): 553-557
- **Automated synthesis and characterization of diverse libraries of macroporous alumina** *Electrochimica Acta*
  Brandli, C., Jaramillo, T., F., Ivanovskaya, A., McFarland, E., W.
  2001; 47 (4): 553-557
- **The Investigation of Photoelectrochemical Hydrogen Production Using Combinatorial Chemistry**
  Jaramillo, T., F., Ivanovskaya, A., Brändli, C., McFarland, E., W.
  2000