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Bio

ACADEMIC APPOINTMENTS

- Research Engineer, SUNCAT Center for Interface Science and Catalysis

Publications

PUBLICATIONS

- **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., Nørskov, J. K., Gallo, et al
2020; 3 (12): 12433–46
- **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
- **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., Nørskov, 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
- **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
- **Ternary Ni-Co-Fe oxyhydroxide oxygen evolution catalysts: Intrinsic activity trends, electrical conductivity, and electronic band structure** *NANO RESEARCH*
Stevens, M., Enman, L. J., Korkus, E., Zaffran, J., Trang, C. M., Asbury, J., Kast, M. G., Toroker, M., Boettcher, S. W.
2019; 12 (9): 2288–95

- **Earth-Abundant Oxygen Electrocatalysts for Alkaline Anion-Exchange-Membrane Water Electrolysis: Effects of Catalyst Conductivity and Comparison with Performance in Three-Electrode Cells** *ACS CATALYSIS*
Xu, D., Stevens, M., Cosby, M. R., Oener, S. Z., Smith, A. M., Enman, L. J., Ayers, K. E., Capuano, C. B., Renner, J. N., Danilovic, N., Li, Y., Wang, H., Zhang, et al
2019; 9 (1): 7–15
- **Operando X-Ray Absorption Spectroscopy Shows Iron Oxidation Is Concurrent with Oxygen Evolution in Cobalt-Iron (Oxy)hydroxide Electrocatalysts** *ANGEWANDTE CHEMIE-INTERNATIONAL EDITION*
Enman, L. J., Stevens, M., Dahan, M., Nellist, M. R., Toroker, M., Boettcher, S. W.
2018; 57 (39): 12840–44
- **Transition-Metal-Incorporated Aluminum Oxide Thin Films: Toward Electronic Structure Design in Amorphous Mixed-Metal Oxides** *JOURNAL OF PHYSICAL CHEMISTRY C*
Enman, L. J., Kast, M. G., Cochran, E. A., Pledger, E., Stevens, M., Boettcher, S. W.
2018; 122 (25): 13691–704
- **The role of Cr doping in Ni-Fe oxide/(oxy)hydroxide electrocatalysts for oxygen evolution** *ELECTROCHIMICA ACTA*
Xu, D., Stevens, M., Rui, Y., DeLuca, G., Boettcher, S. W., Reichmanis, E., Li, Y., Zhang, Q., Wang, H.
2018; 265: 10–18
- **Morphology Dynamics of Single-Layered Ni(OH)₂/NiOOH Nanosheets and Subsequent Fe Incorporation Studied by &ITin Situ&IT Electrochemical Atomic Force Microscopy** *NANO LETTERS*
Deng, J., Nellist, M. R., Stevens, M., Dette, C., Wang, Y., Boettcher, S. W.
2017; 17 (11): 6922–26
- **Reactive Fe-Sites in Ni/Fe (Oxy)hydroxide Are Responsible for Exceptional Oxygen Electrocatalysis Activity** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Stevens, M., Trang, C. M., Enman, L. J., Deng, J., Boettcher, S. W.
2017; 139 (33): 11361–64
- **Influence of Electrolyte Cations on Ni(Fe)OOH Catalyzed Oxygen Evolution Reaction** *CHEMISTRY OF MATERIALS*
Zaffran, J., Stevens, M., Trang, C. M., Nagli, M., Shehadeh, M., Boettcher, S. W., Toroker, M.
2017; 29 (11): 4761–67
- **Measurement Techniques for the Study of Thin Film Heterogeneous Water Oxidation Electrocatalysts** *CHEMISTRY OF MATERIALS*
Stevens, M., Enman, L. J., Batchellor, A. S., Cosby, M. R., Vise, A. E., Trang, C. M., Boettcher, S. W.
2017; 29 (1): 120–40
- **Fe (Oxy)hydroxide Oxygen Evolution Reaction Electrocatalysis: Intrinsic Activity and the Roles of Electrical Conductivity, Substrate, and Dissolution** *CHEMISTRY OF MATERIALS*
Zou, S., Burke, M. S., Kast, M. G., Fan, J., Danilovic, N., Boettcher, S. W.
2015; 27 (23): 8011–20
- **Oxygen Evolution Reaction Electrocatalysis on Transition Metal Oxides and (Oxy)hydroxides: Activity Trends and Design Principles** *CHEMISTRY OF MATERIALS*
Burke, M. S., Enman, L. J., Batchellor, A. S., Zou, S., Boettcher, S. W.
2015; 27 (22): 7549–58
- **Revised Oxygen Evolution Reaction Activity Trends for First-Row Transition-Metal (Oxy)hydroxides in Alkaline Media** *JOURNAL OF PHYSICAL CHEMISTRY LETTERS*
Burke, M. S., Zou, S., Enman, L. J., Kellon, J. E., Gabor, C. A., Pledger, E., Boettcher, S. W.
2015; 6 (18): 3737–42
- **Cobalt-Iron (Oxy)hydroxide Oxygen Evolution Electrocatalysts: The Role of Structure and Composition on Activity, Stability, and Mechanism** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Burke, M. S., Kast, M. G., Trotochaud, L., Smith, A. M., Boettcher, S. W.
2015; 137 (10): 3638–48
- **Contributions to activity enhancement via Fe incorporation in Ni-(oxy) hydroxide/borate catalysts for near-neutral pH oxygen evolution** *CHEMICAL COMMUNICATIONS*
Smith, A. M., Trotochaud, L., Burke, M. S., Boettcher, S. W.

