

Curriculum Vitae  
**Zhenxing Feng**

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## EDUCATION

- 2011 **Ph.D.**, Materials Science and Engineering, Northwestern University, IL, USA  
Thesis: *Atomic-Scale Studies of Oxides Supported Catalysts by X-ray and Imaging Methods*, supervised by Professor Michael J. Bedzyk
- 2006 **M.S.**, Physics, McGill University, Montreal, Canada  
Thesis: *Experimental and Theoretical Investigation of the Coherent X-ray Propagation and Diffraction*, supervised by Professor Mark Sutton
- 2004 **B.S.**, Physics, Peking University, Beijing, China  
Thesis: *Strain Investigation and Ion Beam Modification of ZnO Optoelectronic Materials*

## PROFESSIONAL APPOINTMENTS

- 2025-now **Professor**, School of Chemical, Biological, and Environmental Engineering, Oregon State University, Corvallis, Oregon, USA
- 2022-now **Advisory Committee**, Pacific Northwest Hydrogen Association, USA
- 2022-now **Vice President and Chief Technology Officer**, Nano Fixation Ltd, Cleveland, Ohio, USA
- 2021-2025 **Associate Professor**, School of Chemical, Biological, and Environmental Engineering, Oregon State University, Corvallis, Oregon, USA
- 2021-2023 **Technical Advisory Committee**, Oregon Department of Energy on Renewable Hydrogen, Salem, Oregon, USA
- 2016-2021 **Assistant Professor**, School of Chemical, Biological, and Environmental Engineering, Oregon State University, Corvallis, Oregon, USA
- 2017 **Callahan Faculty Scholar** in Chemical Engineering, Oregon State University, Corvallis, Oregon, USA
- 2013-2016 **Postdoctoral Fellow**, Joint Center for Energy Storage Research (JCESR), Argonne National Laboratory, with Dr. Paul Fenter
- 2011-2013 **Postdoctoral Associate**, Department of Mechanical Engineering, Massachusetts Institute of Technology, advised by Prof. Yang Shao-Horn

## AWARDS AND HONORS

- 2024 2024 Highly Cited Researcher in Cross-Field, Clarivate
- 2023 Collaborative Research Awards, Oregon State University, USA
- 2023 Office of Naval Research (ONR) Summer Fellowship, USA
- 2022 2022 Highly Cited Researcher in Cross-Field, Clarivate
- 2022 ONR Summer Fellowship, USA
- 2021 Action Research Scholar, an NSF-funded program, USA
- 2017 – 2019 Scialog Fellow, Research Corporation for Science Advancement, USA
- 2018 Scialog: Advanced Energy Storage Award, USA
- 2017 Callahan Faculty Scholar, Oregon State University, USA
- 2007 – 2011 Richter Memorial Funds Scholarship, Northwestern University, USA

- 2010 11<sup>th</sup> International Conference Fellowship on Surface X-ray and Neutron Scattering, USA
- 2007, 2009 Gordon Research Conference (GRC) Fellowship, GRC in X-ray Science
- 2006 – 2007 Walter P. Murphy Fellowship, Northwestern University, USA
- 2005 – 2006 McGill Graduate Studies Fellowship, McGill University, Canada
- 2004 Outstanding Graduate with Honors, Peking University, China
- 2003 Tri-A Student, Peking University, China
- 2002 – 2003 President's Undergraduate Research Fellowship, Peking University, China

## SYNERGISTIC ACTIVITIES

### Professional Leadership

**Lead Organizer 2023** MRS Fall Meeting *Symposium EN10: From Single Atom to Device: Interfaces under Electrochemical Conditions*, Boston, MA, USA

**Chair, Pacific Northwest Chapter of American Vacuum Society, 2020-2021**

**Organizing Chair, 2021** annual meeting of Pacific Northwest Chapter of American Vacuum Society, a hybrid meeting at Oregon State University, Corvallis, OR, USA

**Lead Organizer 2021** MRS Spring Meeting *Symposium EN10: Transformation, Reaction and Organization at Functional Interfaces for Sustainable Energy Systems and Environmental Managements*, Seattle, WA, USA

**Lead Organizer 2019** MRS Spring Meeting *Symposium ES03: Electrochemical Energy Materials Under Extreme Conditions*, Phoenix, AZ, USA

**Lead Organizer 2018** MRS Spring Meeting *Symposium EN20: Deposition, Transformation and Reaction at Functional Interfaces for Electrochemical Energy Systems*, Phoenix, AZ, USA

**Lead Organizing Chair**, *Energy Storage 2017* Conference, Corvallis, OR, USA

**Organizer for 5 Technical Symposia** including: **2021** Materials Challenges in Alternative & Renewable Energy (MCARE) Symposium *Materials for Solar Fuel Production and Applications*; **2020** International Chemical Congress of Pacific Basin Societies (PAC CHEM) Symposium *Single-atom-based electro-/photocatalysis in the development of promising water-splitting and CO<sub>2</sub> reduction technologies*; **2019** XXVIII International Materials Research Congress (IMRC) Symposium D5 *In-situ/Operando Characterizations of Materials for Energy Applications*; **2018** 256<sup>th</sup> ACS Fall Meeting Session *Role of Water & Solvent in Heterogeneous Catalysis*; **2018** Pacific Coast Catalysis Society Meeting in Corvallis, Oregon.

**Session Chair for 9 Technical Symposia** including: **2019** AIChE Annual Fall Meeting: *Fundamentals of Catalysis II: C1 Chemistry*; **2019** XXVIII International Materials Research Congress (IMRC) *Symposium D5: In-situ/Operando Characterizations of Materials for Energy Applications*; **2019** 235<sup>th</sup> ECS Meeting *Symposium I01: Hydrogen or Oxygen Evolution Catalysis for Water Electrolysis*; **2019** MRS Spring Meeting *Symposium CP03: Advances in in situ Techniques for Diagnostics and Synthetic Design of Energy Materials*; **2019** MRS Spring Meeting *Symposium ES03: Electrochemical Energy Materials Under Extreme Conditions*; **2018** MRS Spring Meeting *Symposium EN20: Deposition, Transformation and Reaction at Functional Interfaces for Electrochemical Energy Systems*; **2017** MRS Fall Meeting *Symposium TC: Design, Control and Advanced Characterization of Functional Defects in Materials*; **2016** PRiME/230<sup>th</sup> ECS Meeting *A03 Lithium-Ion Batteries*; **2016** 251<sup>st</sup> ACS Spring Meeting Session *Nanomaterials for Energy Conversion & Storage*.

**Outreach**

**SESEY 2019, 2022, 2024-2025:** Each SESEY year, host two high school students from underrepresented groups for one-week experiment at Oregon State University.

**Organizer 2010,** Chicago High School, supervising a total of approximately 60 high students for outreaching in fundamental physics and chemistry, and acted as the science judge for high school posters.

**Professional Service and Review Activities**

**Proposal Reviewer for** U.S. National Science Foundation (NSF), Department of Energy (DOE), American Chemical Society (ACS) Petroleum Research Fund, Stanford Linear Accelerator Center (SLAC) Beamtime Proposals, Advanced Photon Source (APS) Beamtime Proposals, National Environmental Agency of Singapore, Canada Research Chairs, Czech Science Foundation, King Abdullah University of Science and Technology

**Journal Reference for American Chemical Society:** *Chemical Reviews, Chemistry of Materials, The Journal of Physical Chemistry Letters, ACS Applied Energy Materials, ACS Applied Materials & Interfaces, ACS Catalysis, ACS Energy Letters*

American Physical Society: *Physical Review Letters, Physical Review Applied, Physical Review B*

American Institute of Physics: *Applied Physics Letter, Journal of Applied Physics, Review of Scientific Instruments*

Nature Publishing Group: *Nature Materials, Nature Catalysis, Nature Communications, Scientific Reports*

Wiley-VCH: *Advanced Materials, Advanced Energy Materials, Advanced Functional Materials, Advanced Materials Interface, Angewandte Chemie International Edition, ChemElectroChem*

RSC Journals: *Chemical Society Review, Energy & Environmental Science, Journal of Materials Chemistry A, Physical Chemistry Chemical Physics, RSC Advances, Journal of Analytical Atomic Spectrometry, New Journal of Chemistry, CrystEngComm*

**Department and University Service**

2024 – now CBEE Awards Committee, Oregon State University, OR, USA

2023 – now Chair, XRD Facility Advisory Committee, Oregon State University, OR, USA

2023 – now Honors College Curriculum and Thesis Committee, Oregon State University, OR, USA

2023 – 2024 Diversity, Equity, and Inclusion Committee, CBEE, Oregon State University, OR, USA

2023 – now Chair, Graduate Curriculum Assessment Committee, CBEE, Oregon State University, OR, USA

2016 – now Graduate Admission Committee, CBEE, Oregon State University, OR, USA

2021 – 2022 Faculty Status Committee, CBEE, Oregon State University, OR, USA

2021 – 2022 Marketing and Recruitment Committee, CBEE, Oregon State University, OR, USA

2016 – now Undergraduate, MS, and PhD thesis committee, and Graduate Council Representative (GCR), Oregon State University, OR, USA

2016 – now Faculty mentors for undergraduate seniors, Oregon State University, OR, USA

2017 – 2018 Faculty Status Committee, School of Chemical, Biological, and Environmental Engineering (CBEE), Oregon State University, OR, USA

## PATENTS

1. PCT/US Patent No. 22/051987, “Catalysts and Methods for Making and Using” December 2022.

## PUBLICATIONS (\*: corresponding author; † : equal contribution)

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Google Scholar <https://scholar.google.com/citations?user=NDU4E1UAAA&hl=en>

### 2025

160. Y. Li, J.K. Wenderott, T. Billo, M. Wang, A. Chang, H. Cao, X. Yan, D.B. Buchholz, **Z. Feng**, H. Zhou, S. Guha, D.D. Fong, “In situ synchrotron x-ray studies of epitaxial SrCoO<sub>x</sub> films during ionic liquid gating”, *APL Materials*, 13, 061106, 2025.
159. L. Ren, C.-W. Chang, M. Wang, A. H. Pato, **Z. Feng\***, H. Wang\*, W. Liu\*, “Synergizing Catalytic Activity and Electronic Structure Adjustment by Dual-atomic Sites for High-Performance Lithium–sulfur Batteries”, *Energy Storage Materials*, 80, 104335, 2025.
158. M. Qi, M. J. Zachman, Y. Li, Y. Zeng, S. Hwang, J. Liang, M. Lyons, Q. Zhao, Y. Mao, Y. Shao, **Z. Feng**, Z. Wang, Y. Zhao, and G. Wu, “Highly dense atomic Fe–Ni dual metal sites for efficient CO<sub>2</sub> to CO electrolyzers at industrial current densities”, *Energy & Environmental Science*, 18, 5643-5656, 2025.
157. X. Shi, Z. Wen, Q. Gu, L. Jiao, H.-L. Jiang, H. Lv, H. Wang, J. Ding, M. P. Lyons, A. Chang, **Z. Feng**, S. Chen, Y. Lin, X. Xu, P. Du, W. Xu, M. Sun, Y. Li, B. Yang, T. Zhang, X. Wu, and J. Lu, “Metal-support frontier orbital interactions in single-atom catalysis”, *Nature*, 640, 668–675, 2025.
156. J. Li, Q. Zhu, A. Chang, S. Cheon, Y. Gao, B. Shang, H. Li, C. L. Rooney, L. Ren, Z. Jiang, Y. Liang, **Z. Feng**, S. Yang, L. R. Baker, and H. Wang, “Molecular-scale CO spillover on a dual-site electrocatalyst enhances methanol production from CO<sub>2</sub> reduction”, *Nature Nanotechnology*, 20, 515–522, 2025.
155. M. D. Hossain, K. P. Koirala, L. Wang, W. S. Samarakoon, M. E. Bowden, Z. Zhuo, W. Yang, **Z. Feng**, H. Zhou, S. A. Chambers, P. V. Sushko, and Y. Du, “Quantification of Oxygen Vacancies in SrFe<sub>0.5</sub>Cr<sub>0.5</sub>O<sub>3-δ</sub> Thin Films: Correlating Lattice Expansion with Oxidation State Variability”, *ACS Applied Electronic Materials*, 7, 1883-1890, 2025.
154. V. V. K. Doddapaneni, C. Song, J. A. Dhas, N. Cheng, I. Camp, A. Chang, C. Pan, B. K. Paul, S. Pasebani, **Z. Feng**, K. A. Sierros, and C.-h. Chang, “Beyond Solution-Based Printing: Unveiling Innovations and Advancements in Solvent-Free Printing Technologies”, *Advanced Functional Materials*, 35, 2423498, 2025.
153. D. Yang, N. Andreas, A. K. Yadav, K. C. Stylianou, **Z. Feng\***, “Enhancing the Acidic Oxygen Evolution Reaction Efficiency of Sol-Gel Synthesized SrCo<sub>0.5</sub>Ir<sub>0.5</sub>O<sub>3</sub> Catalysts through Optimized Ball Milling and Acid Leaching”, *APL Energy*, 3, 016101, 2025.
152. X. Jin, M. Chang, H. Sun, C.-W. Chang, M. G. Sendeku, Y. Li, M. Wang, J. Fang, Y. Li, Q. Zhu, B. Li, J. Yu, Y. Liu, Z. Chang, G. Zhang, Z. Zhuang, L. Bai, Q.

- Ma, **Z. Feng\***, W. Liu\*, J. Li\*, and X. Sun\*, “Targeting Synthesis of Diatomic Catalysts by Selective Etching and Sequential Adsorption of Metal Atom”, *Journal of the American Chemical Society*, 147, 2689–2698, 2025.
151. H. Tabassum, W. Chen, B. Ma, L. Feng, X. Yang, Y. Li, *M. Lucero*, *M. Lyons*, **Z. Feng**, S. Hwang, X. Zhang, X. Hai, G. Wu, R. Zou, “Synthetic tuning Produces Multi-Junctions of Copper for Efficient Electroreduction of Carbon dioxide”, *Applied Catalysis B: Environment and Energy*, 365, 124922.

## 2024

150. B. Chun, V. V. K. Doddapaneni, *M. Lucero*, C. Pan, Z. Gao, **Z. Feng**, R. Malhotra, and C.-h. Chang, “Microreactor assisted soft lithography of nanostructured antimony sulfide thin film patterns: nucleation, growth and application in solid state batteries”, *Energy Advances*, 3, 2200-2211.
149. G. Wan, T. P. Pollard, L. Ma, M. A. Schroeder, Z. Zhu, Z. Zhang, C.-J. Sun, J. Cai, H. L. Thaman, A. Vailionis, H. Li, S. Kelly, **Z. Feng**, J. Franklin, S. P. Harvey, Y. Zhang, Y. Du, Z. Chen, C. J. Tassone, H.-G. Steinrück, K. Xu, O. Borodin, M. F. Toney, “Solvent-mediated oxide hydrogenation in layered cathodes”, *Science*, 385, 1230-1236, 2024.
148. X. Mao, C.-W. Chang, Z. Li, Z. Han, J. Gao, M. Lyons, G. Sterbinsky, Y. Guo, B. Zhang, Y. Wang, X. Wang, D. Han, Q.-H. Yang, **Z. Feng\***, Z. Weng\*, “Sustainedly High-Rate Electroreduction of CO<sub>2</sub> to Multi-Carbon Products on Nickel Oxygenate/Copper Interfacial Catalysts”, *Advanced Energy Materials*, 14, 2400827, 2024.
147. M. Wang, B. A. Muhich, Z. He, Z. Yang, D. Yang, M. Lucero, H. K. K. Nguyen, G. E. Sterbinsky, L. Árnadóttir, H. Zhou, L. Fei, **Z. Feng\***, “Metal Doping Regulates Electrocatalysts Restructuring during Oxygen Evolution Reaction”, *ChemSusChem*, 36, e202400332, 2024
146. S. Ding, J. A. Barr, Z. Lyu, F. Zhang, M. Wang, P. Tieu, X. Li, M. H Engelhard, **Z. Feng**, S. P. Beckman, X. Pan, J.-C. Li, D. Du, Y. Lin, “Effect of phosphorus modulation in iron single-atom catalysts for peroxidase mimicking”, *Advanced Materials*, 36, 2209633, 2024
145. Z. Lyu, S. Yu, M. Wang, P. Tieu, J. Zhou, Q. Shi, D. Du, **Z. Feng**, X. Pan, H. Lin, S. Ding, Q. Zhang, Y. Lin, “NiFe Nanoparticle Nest Supported on Graphene as Electrocatalyst for Highly Efficient Oxygen Evolution Reaction”, *Small*, 20, 2308278, 2024
144. C. L. Rooney<sup>†</sup>, M. Lyons<sup>†</sup>, Y. Wu, G. Hu, *M. Wang*, C. Choi, Y. Gao, *C.-W. Chang*, G. W. Brudvig, **Z. Feng\***, H. Wang\*, “Active Sites of Cobalt Phthalocyanine in Electrocatalytic CO<sub>2</sub> Reduction to Methanol”, *Angewandte Chemie International Edition*, 136, e202310623, 2024

## 2023

143. Y. Zeng, C. Li, B. Li, J. Liang, M. J. Zachman, R. P. Hermann, E. E. Alp, B. Lavina, S. Karakalos, *M. Lucero*, B. Zhang, *M. Wang*, **Z. Feng**, G. Wang, J. Xie, D. A. Cullen, D. J. Myers, J.-P. Dodelet, G. Wu, “Tuning the thermal activation atmosphere breaks the activity–stability trade-off of Fe–N–C oxygen reduction fuel cell catalysts”, *Nature Catalysis*, 6, 1215-1227, 2023
142. M. Wang, K. C. Chukwu, B. A. Muhich, W. S. Samarakoon, Z. He, M. Lucero, C.-W. Chang, A. Chang, D. Yang, S. Kaur, A. T. N'Diaye, G. E. Sterbinsky, Y. Du, L. Fei, L. Árnadóttir, **Z. Feng\***, “The role of nonmetallic ion substitution in

- perovskite  $\text{LaCoO}_3$  for improved oxygen evolution reaction activity”, *Electrochimica Acta*, 466, 143034, 2023
141. Y. Zeng, J. Liang, C. Li, Z. Qiao, B. Li, S. Hwang, N. N. Kariuki, C.-W. Chang, M. Wang, M. Lyons, S. Lee, **Z. Feng**, G. Wang, J. Xie, D. A. Cullen, D. J. Myers, G. Wu, “Regulating Catalytic Properties and Thermal Stability of Pt and PtCo Intermetallic Fuel-Cell Catalysts via Strong Coupling Effects between Single-Metal Site-Rich Carbon and Pt”, *Journal of the American Chemical Society*, 145, 17643-17655, 2023
140. M. Lucero, D. B. Armitage, X. Yang, S. K. Sandstrom, M. Lyons, R. C. Davis, G. E. Sterbinsky, N. Kim, D. M. Reed, X. Ji, X. Li, **Z. Feng\***, “Ball Milling-Enabled  $\text{Fe}^{2.4+}$  to  $\text{Fe}^{3+}$  Redox Reaction in Prussian Blue Materials for Long-Life Aqueous Sodium-Ion Batteries”, *ACS Applied Materials & Interfaces*, 15, 36366-36372, 2023
139. S. Chang, S. Qiu, S. Katiyar, J. F. F. Gomez, **Z. Feng\***, X. Wu\*, “Research Progress on Iron-Based Materials for Aqueous Sodium-Ion Batteries”, *Batteries*, 9, 349, 2023
138. M. E. Vitale-Sullivan, A. Chang, K.-H. Chou, **Z. Feng\***, K. A. Stoerzinger\*, “Surface transformations of electrocatalysts during the oxygen evolution reaction”, *Chemical Physics Reviews*, 4, 021309, 2023
137. H. Wang, Y. Li, M. Wang, S. Chen, M. Yao, J. Chen, X. Liao, Y. Zhang, X. Lu, E. Matios, J. Luo, W. Zhang, **Z. Feng\***, J. Dong, Y. Liu, W. Li\*, “Precursor-mediated in situ growth of hierarchical N-doped graphene nanofibers confining nickel single atoms for  $\text{CO}_2$  electroreduction”, *Proceedings of the National Academy of Sciences*, 120, e2219043120, 2023.
136. S. Ding, J. A. Barr, Z. Lyu, F. Zhang, M. Wang, P. Tieu, X. Li, M. H. Engelhard, **Z. Feng**, S. P. Beckman, X. Pan, J.-C. Li, D. Du, Y. Lin, “Effect of Phosphorus Modulation in Iron Single-Atom Catalysts for Peroxidase Mimicking”, *Advanced Materials*, 35, 2209633, 2023.
135. C. Cai, K. Liu, L. Zhang, F. Li, Y. Tan, P. Li, Y. Wang, M. Wang, **Z. Feng**, D. M. Meira, W. Qu, A. Stefancu, W. Li, H. Li, J. Fu, H. Wang, D. Zhang, E. Cortés, M. Liu, “Atomically Local Electric Field Induced Interface Water Reorientation for Alkaline Hydrogen Evolution Reaction”, *Angewandte Chemie International Edition*, 62, e202300873, 2023.
134. S. K. Sandstrom, Q. Li, Y. Sui, M. Lyons, C.-W. Chang, R. Zhang, H. Jiang, M. Yu, D. Hoang, W. F. Stickle, H. L. Xin, **Z. Feng**, D. Jiang, X. Ji, “Reversible  $\text{Cl}/\text{Cl}^-$  Redox in a Spinel  $\text{Mn}_3\text{O}_4$  Electrode”, *Chemical Science*, 14, 12645-12652, 2023.
133. V. V. K. Doddapaneni, A. Chang, H.-Y. Jun, C.-H. Choi, **Z. Feng**, C.-H. Chang, “Recent advances in microfluidics-enabled controlled reaction, assembly and exfoliation of inorganic nanomaterials”, *CyrstEngComm*, 25, 5606-5628, 2023
- 2022**
132. H. Tian, G. Feng, Q. Wang, Z. Li, W. Zhang, M. Lucero, **Z. Feng**, Z.-L. Wang, Y. Zhang, C. Zhen, M. Gu, X. Shan, Y. Yang, “Three-dimensional Zn-based alloys for dendrite-free aqueous Zn battery in dual-cation electrolytes”, *Nature Communications*, 13, 7922, 2022
131. W. S. Samarakoon, P. V. Sushko\*, D. Lee, B. Jalan, H. Zhou, Y. Du, **Z. Feng\***, and S. A. Chambers, “Transient electron scavengers modulate carrier density at a polar/nonpolar perovskite oxide heterojunction”, *Physical Review Materials*, 6, 103405, 2022

130. Y. Chen, J. K. Seo, Y. Sun, T. A. Wynn, M. Olguin, M. Zhang, J. Wang, S. Xi, Y. Du, K. Yuan, W. Chen, A. C. Fisher, M. Wang, **Z. Feng**, J. Gracia, L. Huang, S. Du, H.-J. Gao, Y. S. Meng, and Z. J. Xu, “Enhanced oxygen evolution over dual corner-shared cobalt tetrahedra”, *Nature Communications*, 13, 5510, 2022
129. W. Samarakoon, J. Hu, M. Song, M. Bowden, N. Lahiri, J. Liu, L. Wang, T. Droubay, K. Koirala, H. Zhou, **Z. Feng**, J. Tao, and Y. Du, “Direct Imaging of the Structural and Morphological Evolution of Epitaxial LiCoO<sub>2</sub> Films during Charge and Overcharge”, *Journal of Physical Chemistry C*, 126, 15882-15890, 2022
128. X. Li, S. Ding, Z. Lyu, P. Tieu, M. Wang, **Z. Feng**, X. Pan, Y. Zhou, X. Niu, D. Du, W. Zhu, Y. Lin, “Single-Atomic Iron Doped Carbon Dots with Both Photoluminescence and Oxidase-Like Activity”, *Small*, 18, 2203001, 2022
127. Z. Weng, Y. Wu, M. Wang, G. W. Brudvig, V. S. Batista, Y. Liang\*, **Z. Feng\***, H. Wang\*, “Reply To: Confined molecular catalysts provide an alternative interpretation to the electrochemically reversible demetallation of copper complexes”, *Nature Communications*, 13, 4191, 2022
126. L. Wang, Z. Yang, W. S. Samarakoon, Y. Zhou, M. E. Bowden, H. Zhou, J. Tao, Z. Zhu, N. Lahiri, T. C. Droubay, Z. Lebens-Higgins, X. Yin, C. S. Tang, **Z. Feng**, L. F. J. Piper, A. T. S. Wee, S. A. Chambers, and Y. Du, “Spontaneous Lithiation of Binary Oxides during Epitaxial Growth on LiCoO<sub>2</sub>”, *Nano Letters*, 22, 5530-5537, 2022.
125. S. Liu, C. Li, M. J. Zachman, Y. Zeng, H. Yu, B. Li, M. Wang, J. Braaten, J. Liu, H. M. Meyer III, M. Lucero, A. J. Kropf, E. E. Alp, Q. Gong, Q. Shi, **Z. Feng**, G. Wang, H. Xu, D. J. Myers, J. Xie, D. A. Cullen, S. Litster, and G. Wu, “Atomically dispersed iron sites with a nitrogen– carbon coating as highly active and durable oxygen reduction catalysts for fuel cells”, *Nature Energy*, 7, 652-663, 2022.
124. T. C. Gallagher, C. Wu, M. Lucero, S. K. Sandstrom, L. Hagglund, H. Jiang, W. Stickle, **Z. Feng\***, X. Ji\*, “From Copper to Basic Copper Carbonate: A Reversible Conversion Cathode in Aqueous Anion Batteries”, *Angewandte Chemie International Edition*, 2022, DOI: 10.1002/anie.202203837
123. Y. Li<sup>†</sup>, W. Shan<sup>†</sup>, M. J. Zachman<sup>†</sup>, M. Wang<sup>†</sup>, S. Hwang, H. Tabassum, J. Yang, X. Yang, S. Karakalos, **Z. Feng\***, G. Wang\*, G. Wu\*, “Atomically Dispersed Dual-Metal Site Catalysts for Enhanced CO<sub>2</sub> Reduction: Mechanistic Insight into Active Site Structures”, *Angewandte Chemie International Edition*, 61, e202205632, 2022.
122. Y. Li, J. J. G. Moreno, Z. Song, D. Liu, M. Wang, A. Ramiere, **Z. Feng**, Q. J. Niu, T. Sasaki, and X. Cai, “Controlled Synthesis of Perforated Oxide Nanosheets with High Density Nanopores Showing Superior Water Purification Performance”, *ACS Appl. Mater. Interfaces*, 14, 18513–18524, 2022.
121. Y. Li<sup>†</sup>, N. M. Adli<sup>†</sup>, W. Shan<sup>†</sup>, M. Wang<sup>†</sup>, M. J. Zachman, S. Hwang, H. Tabassum, S. Karakalos, **Z. Feng\***, G. Wang\*, Y. C. Li\*, and G. Wu\*, “Atomically Dispersed Single Ni Site Catalysts for High-Efficiency CO<sub>2</sub> Electroreduction at Industrial-Level Current Densities”, *Energy & Environmental Science*, 15, 2108-2119, 2022.
120. W. Zhang, J. Chang, G. Wang, Z. Li, M. Wang, Y. Zhu, B. Li, H. Zhou, G. Wang, M. Gu, **Z. Feng\***, and Y. Yang\*, “Surface oxygenation induced strong interaction between Pd catalyst and functional support for zinc–air batteries”, *Energy & Environmental Science*, 15, 15753-1584, 2022.

119. M. Kim, J. Park, M. Wang, Q. Wang, M. J. Kim, J. Y. Kim, H.-S. Cho, C.-H. Kim, **Z. Feng**, B.-H. Kim, S. W. Lee, “Role of surface steps in activation of surface oxygen sites on Ir nanocrystals for oxygen evolution reaction in acidic media”, *Applied Catalysis B: Environmental*, 302, 120834, 2022.
118. S. Qiu, M. Lucero, X. Wu, Q. Wang, M. Wang, Y. Wang, W. S. Samarakoon, M. R. Bolding, Z. Yang, Y. Huang, Z. J. Xu, M. Gu, and **Z. Feng\***, “Revealing the fast and durable Na<sup>+</sup> insertion reactions in a layered Na<sub>3</sub>Fe<sub>3</sub>(PO<sub>4</sub>)<sub>4</sub> anode for aqueous Na-ion batteries”, *ACS Materials Au*, 2, 63-71, 2022. highlighted as the Journal Front Cover.
117. Marcos Lucero, Tucker M. Holstun, Yudong Yao, Ryan Faase, Maoyu Wang, Alpha T. N'Diaye, David P. Cann, Joe Baio, Junjing Deng, **Zhenxing Feng\***, “Dual-shell silicate and alumina coating for long lasting and high capacity lithium ion batteries”, *Journal of Energy Chemistry*, 68, 314-323, 2022.
- 2021**
116. M. Wang, Q. Wa, X. Bai, Z. He, W. S. Samarakoon, Q. Ma, Y. Du, Y. Chen, H. Zhou\*, Y. Liu\*, X. Wang\*, and **Z. Feng\***, “The Restructuring-Induced CoO<sub>x</sub> Catalyst for Electrochemical Water Splitting”, *JACS Au*, 1, 2216-2223, 2021.
115. Jinfang Chang, Guanzhi Wang, Maoyu Wang, Qi Wang, Boyang Li, Hua Zhou, Yuanmin Zhu, Wei Zhang, Mahmoud Omer, Nina Orlovskaya, Qing Ma, Meng Gu\*, **Zhenxing Feng\***, Guofeng Wang\*, Yang Yang\*, “Improving Pd-N-C fuel cell electrocatalysts through fluorination-driven rearrangements of local coordination environment”, *Nature Energy*, 6, 1144-1153, 2021.
114. Yubo Chen, Yuanmiao Sun, Maoyu Wang, Jingxian Wang, Haiyan Li, Shibo Xi, Chao Wei, George E. Sterbinsky, John W. Freeland, Adrian C. Fisher, Joel W. Ager III, **Zhenxing Feng\***, and Zhichuan J. Xu\*, “Lattice-site-dependent metal leaching in perovskites towards a honeycomb-like water oxidation catalyst”, *Science Advances*, 7, eabk1788, 2021.
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28. B. Pan, **Z. Feng**, N. Sa, S.-D. Han, Q. Ma, P. Fenter, J. T. Vaughey, Z. Zhang, C. Liao, "Advanced hybrid batteries with magnesium metal anode and spinel LiMn<sub>2</sub>O<sub>4</sub> cathode", *Chemical Communications*, 52, 9961-9964, 2016.
27. **Z. Feng\***, W.T. Hong, D.D. Fong, Y.-L. Lee, Y. Yacoby, D. Morgan and Y. Shao-Horn\*, "Catalytic activity and stability of oxides: the role of near-surface atomic structures and compositions", *Accounts of Chemical Research*, 49, 996-973, 2016.
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25. N. Sa, H. Wang, D. L. Proffit, A. L. Lipson, B. Key, M. Liu, **Z. Feng**, T. T. Fister, Y. Ren, C.-J. Sun, J. T. Vaughey, P. A. Fenter, K. Persson, A. K. Burrell, "Is alpha-V<sub>2</sub>O<sub>5</sub> a cathode material for Mg insertion batteries?", *Journal of Power Sources*, 323, 44-50, 2016.
24. B. Pan, J. Huang, **Z. Feng**, L. Zeng, L. Zhang, J.T. Vaughey, M.J. Bedzyk, P. Fenter, Z. Zhang, A.K. Burrell, and C. Liao, "Polyanthraquinone-based organic cathode for high-performance rechargeable magnesium-ion batteries", *Advanced Energy Materials*, 6, 1600140, 2016.
23. M. He, C.-C. Su, C. Peebles, **Z. Feng**, J. Connell, C. Liao, Y. Wang, I. Shkrob, Z. Zhang, "Mechanistic insight in the function of phosphite additives for protection of LiNi<sub>0.5</sub>Co<sub>0.2</sub>Mn<sub>0.3</sub>O<sub>2</sub> cathode in high voltage Li-ion cells", *ACS Applied Materials & Interfaces*, 8, 11450-11458, 2016.
22. N. Hu, L. Zhang, C. Yang, J. Zhao, Z. Yang, H. Wei, H. Liao, **Z. Feng**, A. Fisher, Y. Zhang, Z. J. Xu, "Three-dimensional skeleton networks of graphene wrapped polyaniline nanofibers: an excellent structure for high-performance flexible solid-state supercapacitors", *Scientific Reports*, 6, 19777, 2016.

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20. **Z. Feng\***, Q. Ma, J. Lu, H. Feng, P.C. Stair, J. W. Elam, M.J. Bedzyk\*, “Atomic-scale cation dynamics in monolayer VO<sub>x</sub>/α-Fe<sub>2</sub>O<sub>3</sub> catalyst”, *RSC Advances*, 5, 103834-103840, 2015.
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18. D. L. Proffit, A. L. Lipson, B. Pan, S.-D. Han, T. F. Fister, **Z. Feng**, B. J. Ingram, A. K. Burrell, and J. T. Vaughey, “Reducing side reactions using PF<sub>6</sub>-based electrolytes in multivalent hybrid cells”, *Mater. Res. Soc. Symp. Proc.*, 1773, 27-32, 2015.
17. Y. Zhao, **Z. Feng**, Z. Xu, “Yolk-shell Fe<sub>2</sub>O<sub>3</sub>@C composites anchored on MWNTs with enhanced lithium and sodium storage”, *Nanoscale* 7, 9520-9525, 2015.

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15. **Z. Feng**, Y. Yacoby, M.J. Gadre, Y.-L. Lee, W.T. Hong, H. Zhou, M.D. Biegaski, H. M. Christen, S. B. Adler, D. Morgan and Y. Shao-Horn, “Anomalous interface/surface strontium segregation in (La<sub>1-y</sub>Sr<sub>y</sub>)<sub>2</sub>CoO<sub>4+δ</sub>/La<sub>1-x</sub>Sr<sub>x</sub>CoO<sub>3-δ</sub> heterostructured thin films”, *Journal of Physical Chemistry Letters*, 5, 1027-1034, 2014.
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#### 2013

13. D. Lee, A. Grimaud, E. J. Crumlin, K. Mezghani, M.A. Habib, **Z. Feng**, W.T. Hong, M.D. Biegaski, H.M. Christen, and Y. Shao-Horn, “Strain influence on the oxygen electrocatalysis of the (100)-oriented epitaxial La<sub>2</sub>NiO<sub>4+δ</sub> thin Films at elevated temperatures”, *Journal of Physical Chemistry C*, 117, 18789-18795, 2013.
12. **Z. Feng**, E. J. Crumlin, W.T. Hong, D. Lee, E. Mutoro, M.D. Biegaski, H. Zhou, H. Bluhm, H.M. Christen, and Y. Shao-Horn, “*In situ* studies of temperature-dependent surface structure and chemistry of single-crystalline (001)-oriented perovskite thin films”, *Journal of Physical Chemistry Letters*, 4, 1512-1518, 2013.
11. **Z. Feng**, J. Lu, H. Feng, P.C. Stair, J.W. Elam, and M.J. Bedzyk, “Catalysts transform while molecules react: an atomic-scale view”, *Journal of Physical Chemistry Letters*, 4, 285-291, 2013.

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6. **Z. Feng**, C.-Y. Kim, J.W. Elam, Q. Ma, Z. Zhang and M.J. Bedzyk, "Direct atomic-scale observation of redox-induced cation dynamics in an oxide supported monolayer catalyst: WO<sub>x</sub>/α-Fe<sub>2</sub>O<sub>3</sub>(0001)", *Journal of American Chemical Society* 131, 18200-18201, 2009.
  5. S.T. Christensen, B. Lee, **Z. Feng**, M.C. Hersam, M.J. Bedzyk, "Hierarchical nanoparticle morphology for platinum supported on SrTiO<sub>3</sub> (001): A combined microscopy and X-ray scattering study", *Applied Surface Science*, 256, 423-427, 2009.
  4. S.T. Christensen, J.W. Elam, B. Lee, **Z. Feng**, M.J. Bedzyk and M.C. Hersam, "Nanoscale structure and morphology of atomic layer deposition platinum on SrTiO<sub>3</sub> (001)", *Chemistry of Materials*, 21, 516-521, 2009.
- 2006**
3. C.Y. Hu, Z.X. Qin, **Z. Feng**, Z.Z. Chen, Z.J. Yang, T.J. Yu, X.D. Hu, S.D. Yao and G.Y. Zhang "Temperature dependent diffusion and epitaxial behavior of oxidized Au/Ni/p-GaN ohmic contact", *Material Science and Engineering B*, 128, 37-43, 2006.
- 2005**
2. C.Y. Hu, Z.X. Qin, **Z. Feng**, Z.Z. Chen, H. Yang, Z.J. Yang, T.J. Yu, X.D. Hu, S.D. Yao, G.Y. Zhang "Investigation on Mechanism of Oxidized Au/Ni/p-GaN Ohmic Contact", *Chinese Journal of Semiconductors*, vol. 26, No. 6, 1154-1158, 2005.
  1. **Z. Feng**, S. Yao, L. Hou, and R. Jin, "Depth dependent elastic strain in ZnO epilayer: combined Rutherford backscattering / channeling and X-ray diffraction", *Nuclear Instruments and Methods in Physics Research Section B*, 229, 246-252, 2005.

#### STUDENT/ADVISEE HONORS and AWARDS:

47. Alvin Chang (PhD student), NSF Non-Academic Research Internships for Graduate Students (INTERN) at De Nora Tech LLC, September – December, 2025
46. Saowaluk Soonthornkit (PhD student), NSF Non-Academic Research Internships for Graduate Students (INTERN) at De Nora Tech LLC, March – September, 2025
45. Alvin Chang (PhD student), Poster awards, 3<sup>rd</sup> prize in annual PNW-AVS, Pacific Northwest National Laboratory, Richland, WA, August 2024
44. Saowaluk Soonthornkit (PhD student), Poster awards, 2<sup>nd</sup> prize in annual PNW-AVS, Pacific Northwest National Laboratory, Richland, WA, August 2024

43. Mason Lyons (PhD student), NSF Non-Academic Research Internships for Graduate Students (INTERN) at ZincFive, March – September, 2024
42. Chun-Wai Chang (PhD student), Internship at Telsa Motors, January – August 2024
41. Alvin Chang (PhD student), International Internship Pilot Program in Taiwan, January – March 2024
40. Chun-Wai Chang (PhD student), *Next Best Lecture Award*, Next Journal and MRS, November 2023
39. Chun-Wai Chang (PhD student), Student Award 2<sup>nd</sup> Place, Applied Surface Science Division, November 2023
38. Jackson Mitchell (Undergraduate student), Clean Water Initiative REU Awardee, Oregon State University, June-September 2023
37. Alvin Chang (PhD student), 2023 ICDD Ludo Frevel Crystallography Scholarship, February 2023
36. Meilani Bolding (Undergraduate student), Clean Water Initiative REU Awardee, Oregon State University, June-September 2022
35. Jackson Mitchell (Undergraduate student), Johnson Scholar Internship, Oregon State University, June-September 2022
34. Brian Muhich (honors thesis advisee), 2022 Chemical Engineering Academic Achievement Award, June 2022
33. Brian Muhich (honors thesis advisee), Honors College Outstanding Thesis, June 2022
32. Marcos Lucero (PhD student), NGenE Summer Workshop Awardee, June 2022.
31. Kamen Schaeffle (undergraduate student), URSA Internship, Oregon State University, February-June 2022.
30. Chao Chen (undergraduate student), URSA Internship, Oregon State University, February-June 2022.
29. Gage Ekstrom (undergraduate student), STEM Leadership Internship, Oregon State University, February-June 2022.
28. Marcos Lucero (PhD student), 3<sup>rd</sup> prize of Graduate Student Oral Competition in annual PNW-AVS, September 2021.
27. Widitha Samarakoon (PhD student), Honorable mention of Graduate Student Oral Competition in annual PNW-AVS, September 2021.
26. William Guo (High School student), Outstanding Performance Award in annual PNW-AVS, September 2021.
25. Maoyu Wang (PhD student), MRS Spring EN10 Symposium Best Oral Presentation Award, April 2021
24. Brian Muhich (honors thesis advisee), MRS Spring EN10 Symposium Best Poster Presentation Award, April 2021
23. Maoyu Wang (PhD student), College of Engineering Graduate Research Assistant Award, Oregon State University, Corvallis, Oregon, 2020
22. Marcos Lucero (PhD student), Energy Efficiency & Renewable Energy (EERE) Energy Storage Internship from Department of Energy (DOE), Lawrence Livermore National Laboratory, Livermore, CA, June-September 2020.
21. Brian Muhich (honors thesis advisee), 1<sup>st</sup> prize of Undergraduate Student Oral Competition in annual PNW-AVS, September 2021.
20. Brian Muhich (honors thesis advisee), Science Undergraduate Laboratory Internship (SULI), Pacific Northwest National Laboratory, June-September 2020.
19. Brian Muhich (honors thesis advisee), Johnson Scholar Internship, Oregon State University, June-September 2020.
18. Maoyu Wang (PhD student), Graduate Research Assistant award from College of Engineering (COE) of Oregon State University, June 2020.

17. Marcos Lucero (PhD student), award from Department of Energy to attend 2020 National School on Neutron and X-ray, June 2020
16. Tucker M. Holstun (honors thesis advisee), Barry Goldwater Scholarship, April 2020
15. Widitha Saramakoon (PhD student), PNNL-OSU Distinguished Graduate Fellowship, October 2019 – April 2021
14. Román Vega (undergraduate student), STEM Leadership Internship, Oregon State University, February-June 2020.
13. Marcos Lucero (PhD student), Poster awards, 3<sup>rd</sup> prize in annual PNW-AVS, Washington State University, Pullman, WA, September 2019.
12. Megan Williams (Undergraduate student), Clean Water Initiative REU Awardee, Oregon State University, June-September 2019.
11. Brian Muhich (honors thesis advisee), Johnson Scholar Internship, Oregon State University, June-September 2019.
10. Tucker M. Holstun (honors thesis advisee), Science Undergraduate Laboratory Internship (SULI), Argonne National Laboratory, June-September 2019.
9. Maoyu Wang (PhD student), award from Department of Energy to attend 2020 National School on Neutron and X-ray, July 2019
8. Maoyu Wang (PhD student), MRS Spring ES03 Symposium Best Oral Presentation Award, Phoenix, AZ, April 2019
7. Maoyu Wang (PhD student), OSU travel awards to attend MRS national meeting in Phoenix, AZ, April 2019
6. Megan Williams (undergraduate student), URSA Internship, Oregon State University, February-June 2019.
5. Tucker M. Holstun (honors thesis advisee), Johnson Scholar Internship, Oregon State University, June-September 2018.
4. David So (undergraduate student), URSA Internship, Oregon State University, February-June 2018.
3. Morgan Messer (undergraduate student), URSA Internship, Oregon State University, February-June 2017.
2. Michael Barden (undergraduate student), URSA Internship, Oregon State University, February-June 2017.
1. Maoyu Wang (PhD student), Poster awards, 3<sup>rd</sup> prize in annual PNW-AVS, Washington State University, Corvallis, OR, September 2017.

### **COURSES PRESENTED**

2025	<b>Thermodynamics</b> , Oregon State University
Winter	CHE 311: Total enrollment of 10 students; Instructor Rating: 6.0/6.0
2025	<b>Thin Film Materials Processing</b> , Oregon State University
Winter	CHE 444/544: Total enrollment of 11 students; Instructor Rating: 4.5/6.0
2024	<b>Thermodynamics</b> , Oregon State University
Fall	CHE 311: Total enrollment of 92 students; Instructor Rating: 4.8/6.0
2024	<b>Electrochemical Energy Systems</b> , Oregon State University
Spring	CHE 452/552: Total enrollment of 16 students; Instructor Rating: 5.7/6.0
2024	<b>Thermodynamics</b> , Oregon State University
Winter	CHE 311: Total enrollment of 13 students; Instructor Rating: 5.5/6.0
2024	<b>Thin Film Materials Processing</b> , Oregon State University
Winter	CHE 444/544: Total enrollment of 27 students; Instructor Rating: 5.8/6.0
2023	<b>Thermodynamics</b> , Oregon State University
Fall	CHE 311: Total enrollment of 83 students; Instructor Rating: 4.8/6.0

2022	<b>Electrochemical Energy Systems</b> , Oregon State University
Spring	CHE 452/552: Total enrollment of 17 students; Instructor Rating: 5.8/6.0
2022	<b>Thermodynamics</b> , Oregon State University
Winter	CHE 311: Total enrollment of 22 students; Instructor Rating: 5.8/6.0
2022	<b>Thin Film Materials Processing</b> , Oregon State University
Winter	CHE 444/544: Total enrollment of 22 students; Instructor Rating: 5.8/6.0
2021	<b>Thermodynamics</b> , Oregon State University
Fall	CHE 311: Total enrollment of 178 students; Instructor Rating: 5.2/6.0
2021	<b>Thin Film Materials Processing</b> , Oregon State University
Spring	CHE 444/544: Total enrollment of 12 students; Instructor Rating: 6.0/6.0
2021	<b>From Lab to Industries: Electrochemical Energy Systems</b> , OSU
Spring	ENRG 299H: Total enrollment of 8 students; Instructor Rating: 5.0/6.0
2021	<b>Electrochemical Energy Systems</b> , Oregon State University
Winter	CHE 452/552: Total enrollment of 13 students; Instructor Rating: 5.0/6.0
2020	<b>Thermodynamics</b> , Oregon State University
Fall	CHE 311: Total enrollment of 185 students; Instructor Rating: --/6.0
2020	<b>Electrochemical Energy Systems</b> , Oregon State University
Spring	CHE 452/552: Total enrollment of 10 students; Instructor Rating: --/6.0
2020	<b>Thin Film Materials Processing</b> , Oregon State University
Winter	CHE 444/544: Total enrollment of 19 students; Instructor Rating: 5.4/6.0
2019	<b>Thermodynamics</b> , Oregon State University
Fall	CHE 311: Total enrollment of 218 students; Instructor Rating: 4.6/6.0
2019	<b>Electrochemical Energy Systems</b> , Oregon State University
Spring	CHE 452/552: Total enrollment of 6 students; Instructor Rating: --/6.0
2019	<b>Thin Film Materials Processing</b> , Oregon State University
Winter	CHE 444/544: Total enrollment of 36 students; Instructor Rating: 4.4/6.0
2018	<b>Thermodynamics</b> , Oregon State University
Fall	CHE 311: Total enrollment of 191 students; Instructor Rating: 4.7/6.0
2018	<b>Electrochemical Energy Systems</b> , Oregon State University
Spring	CHE 499/599: Total enrollment of 10 students; Instructor Rating: 5.6/6.0
2018	<b>Thin Film Materials Processing</b> , Oregon State University
Winter	CHE 444/544: Total enrollment of 42 students; Instructor Rating: 4.3/6.0
2017	<b>Electrochemical Energy Systems</b> , Oregon State University
Spring	CHE 499/599: Total enrollment of 20 students; Instructor Rating: 5.5/6.0
2017	<b>Thin Film Materials Processing</b> , Oregon State University
Winter	CHE 444/544: Total enrollment of 44 students; Instructor Rating: 4.4/6.0

#### PROFESIONAL MEMBERSHIPS

- Materials Research Society (MRS)
- Electrochemical Society (ECS)
- The American Institute of Chemical Engineers (AIChE)
- American Vacuum Society (AVS)
- American Ceramic Society (ACerS)