CURRICULUM VITAE

Gang Wu, *Ph. D., Professor*

Department of Chemical and Biological Engineering
University at Buffalo (UB), The State University of New York (SUNY),
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Education

- 2004. Ph.D.: Environmental Engineering, Harbin Institute of Technology, Harbin, China.
- 1999. M.S.: Applied Chemistry, Harbin Institute of Technology, Harbin, China.
- 1997. B.S: Electrochemical Engineering, Harbin Institute of Technology, Harbin, China.

Employment History

- Aug 2020- present, *Professor,* University at Buffalo, SUNY, USA
- Aug 2018-Aug 2020, *Associate Professor*, University at Buffalo, SUNY, USA
- Aug 2014-Aug 2018, *Assistant Professor*, University at Buffalo, SUNY, USA
- May 2010-Aug 2014, *Staff Scientist*, Los Alamos National Laboratory (LANL), USA
- Jan 2008-May 2010, *Postdoc*, Los Alamos National Laboratory, USA
- Feb 2006-Jan 2008, *Postdoc*, University of South Carolina, USA
- Jan 2004-Jan 2006, *Postdoc*, Tsinghua University**,** Beijing, China

Major Research Interest

- Electrochemical Science and Engineering for Energy Technologies;
- Electrocatalysis and photocatalysis for clean energy conversion: fuel cells, electrolyzers, CO_2 reduction; electrosynthesis;
- Electrochemical energy power sources for energy storage: batteries and supercapacitors;
- Renewable fuel: NH_3 (electrosynthesis, oxidation, and carking for H_2 generation).

Key Achievements and Recognition

- Dr. Wu is internationally recognized as the leading researcher in the field of fuel cells and other sustainable electrochemical energy technologies.
- Awarded more than **$5.0 M** in grant funding from federal agencies (DOE and NSF) since joining UB in August 2014. Those **14** projects (3 NSF and 11 DOE) focus on the development of advanced materials for electrochemical energy conversion and storage technologies such as fuel cells, water splitting, batteries, and renewable fuel (*e.g.*, NH_3).
- Published more than **250** peer-reviewed scientific papers in prestigious journals including *Science, Nature Catalysis, J. Am. Chem. Soc., Angew. Chem. Int. Ed., Advanced Materials, Energy Environ. Sci., Chemical Reviews, Chemical Society Reviews, Materials Today, Nano Today, ACS Nano, ACS Catalysis,* etc., along with **9** patents and patent applications, **9** invited book chapters, and over **100** presentations.
- Work has garnered over **27,000** citations by Feb 2021, leading to citation metrics of *h* index: **82,** *i*10 index: 219 [Google Scholar].
- Continuously named a Highly Cited Researchers by Clarivate Analytics in **2018, 2019**, and **2020** in recognition of exceptional research performance demonstrated by the production of multiple highly cited papers that ranked in the top 1% in Web of Science.

- Completed more than 1000 manuscript peer-reviews (~3-5 per week) for renowned journals including *Science*, *Nature, PNAS, Nature Chemistry, Nature Nanotechnology, Nature Communications, Nature Energy*, *Nature Catalysis*, *Journal of the American Chemical Society, Angewandte Chemie*, *Advanced Materials, Nano Letters, ACS Nano, Materials Today*, *Nano Today*, *Energy and Environmental Science, Advanced Energy Materials, Advanced Functional Materials, Small, Chemistry of Materials, Nano Energy,* and many others.
- Served as a panelist or proposal reviewer for the *U.S. National Science Foundation (NSF), U.S. DOE Office of Science, Office of Energy Efficiency and Renewable Energy (EERE), Czech Science Foundation, Research Grants Council of Hong Kong, National Research Foundation of Singapore, United States-Israel Binational Science Foundation, Estonian Research Council, and Natural Sciences and Engineering Research Council of Canada.*

Academic Awards / Scholarships

- UB's Exceptional Scholar – Sustained Achievement Award, 2020
- UB SEAS (Engineering School) Senior Research Award, 2019
- UB SEAS (Engineering School) Early Career Research Award, 2017
- LANL LDRD-ER Award, 2014
- DOE, EERE office Outstanding Research Team Award, 2011
- LANL Early Career LDRD Award, 2010
- Fuel Cell Tech Team's 2009 highlights by USCAR, 2010

Honors

- Named a 2018, 2019, and 2020 Highly Cited Researcher by Thomson Reuters, Clarivate Analytics
- Elected an at-large Member of Energy Technology Division, Electrochemical Society
- Selected as "Professor of the Year" by the UB AIChE student chapter, 2016.
- Rank as a Top 1% reviewer for *ACS Catalysis*, 2015
- 2011 *Science* paper was ranked among the top 10 most-cited articles in Chemistry, 2013
- Selected as a Featured Scientist at LANL, 2011
- Recognized for a Top 10 most-cited paper in *Electrochemistry Communications*, 2010

Professional Memberships and Activities

- Member of the American Institute of Chemical Engineers (AIChE), 2014-
- Member of the Electrochemical Society (ECS), 2008-
- Member of the American Chemical Society (ACS), 2008-
- Member of the Materials Research Society (MRS), 2013-
- Board Committee Member of The International Academy of Electrochemical Energy Science
- Editorial Board of *ChemistrySelect* (a new journal from ChemPubSoc Europe, Wiley-VCH Publisher) 2015- present
- Editorial Board Member for *Scientific Reports*, (Nature Publishing Group), 2016- present
- Associate Editor of *RSC Advances* (a journal in the Royal Society of Chemistry, UK), 2016-present

University Service

- Panel reviewer for "IMPACT" proposals, 2016 and 2017.
- Panel reviewer for pre-selection of NSF Major Research Instrumentation Program (MRI) proposals at UB, 2016
- Reviewer for "RENEW" seed proposals, 2017 and 2018

School of Engineering Service

- *Tenure and Promotion Committee* member in the School of Engineering and Applied Science, Alternative: 2018 and Primary: 2019-
- Taught 4th Grade students about battery principles and fabrication during the field trip of Westminster Elementary School (an event hosted by SEAS), 2015.
- Participated in "Science is Elementary" (SIE) program organized by the School of Engineering and Applied Science, 2015-2016.

Departmental Service

- Served as a co-organizer for the annual Graduate Research Symposium in Department of Chemical and Biological Engineering at UB, 2014-2016.
- Scientific advisor for Chem-E-Car for AIChE UB student chapter, 2018- present
- Member of the department undergraduate committee, 2019- present
- Member of faculty search committee, 2019

Professional Service

- One of the Directors and Area Chairs for Transport and Energy Processes (TEP) Division at the American Institute of Chemical Engineers (AIChE);
- Award Committee Member, Energy Technology Division, Electrochemical Society, 2018-present.
- National Science Foundation (NSF) Panel Reviewer for CAREER proposals in *Electrochemical Systems* and *Catalysis* program; Ad Hoc review for NSF Engineering Research Center (ERC) proposals, 2019.
- National Science Foundation (NSF) Panel Reviewer for *Catalysis* and *Energy Sustainability* programs, 2019.
- National Science Foundation (NSF) Panel Reviewer for *Chemical Catalysis* program, 2018.
- Lead organizer for symposia *"Fundamentals of Electrochemical Processes"* and *"Materials for Electrochemical Energy Storages"*; co-organizer for "*Electrocatalysis and Photocatalysis*" at the American Institute of Chemical Engineers (AIChE) meeting, 2016, 2017, 2018, and 2019.
- Lead organizer for the symposium "*Energy Conversion Systems Based on Nitrogen* 3" at the 237th *Electrochemical Society Meeting* (ECS), Montreal, Canada, May 2020.
- Symposium co-organizer for "*Innovative Chemistry & Electrocatalysis for Low-Carbon Energy & Fuels: Discovery to Application*" at the 257th American Chemical Society National Meeting, Orlando FL, March 2018.

- Co-organizer for symposia "*Advances and Perspectives on Modern Polymer Electrolyte Fuel Cells - Symposium in Honor of Shimshon Gottesfeld*", "*Energy Conversion Systems Based on Nitrogen*", and "*Materials for Low Temperature Electrochemical Systems"* at the 235th Electrochemical Society (ECS) Meeting in Dallas, May 2019.
- Lead organizer for symposium "*Energy Conversion Systems Based on Nitrogen*" and co-organizer for symposia "*Materials for Low Temperature Electrochemical Systems*" and "*Oxygen or Hydrogen Evolution Catalysis for Water Electrolysis*" at the 233rd Electrochemical Society (ECS) Meeting in Seattle, May 2018.
- Lead organizer for symposium "*Advanced Electrocatalysis for Clean Energy and Environment"* at the 256th American Chemical Society National Meeting, Boston, MA, August 2018.
- Symposium co-organizer for "*Innovative Chemistry & Electrocatalysis for Low-Carbon Energy & Fuels: Discovery to Application*" at the 254th American Chemical Society National Meeting, Washington DC, August 2017.
- Co-organizer for *"Electrocatalysis and Photoelectrocatalysis"*, and *"Composites for Environmental applications"*, at the American Institute of Chemical Engineers (AIChE) meeting, 2015, 2016, and 2017.
- Co-organizer for symposium "*Multiple electron redox for battery technologies*" at the 232nd Electrochemical Society Meeting (ECS), National Harbor, MD, October, 2017.
- Co-organizer for symposium "*Innovative Chemistry & Electrocatalysis for Low-Carbon Energy & Fuels: Discovery to Application"* at the 254th American Chemical Society (ACS) National Meeting, August, Washington DC, 2017.
- Lead organizer for symposium "*Electrochemical energy materials"* at the Northeastern Regional Meeting of the American Chemical Society (NERM), Binghamton, NY, 2016.
- Co-organizer and session chair for symposium "*Electrochemical energy production, conversion, and storage*" at the 252rd American Chemical Society (ACS) National Meeting, Philadelphia, PA, August, 2016
- Session chair in *Electrochemical Society Meetings (ECS)*, 2015, 2016, and 2017.
- Completed more than 1000 manuscript peer-reviews (~3-4 per week) for renowned journals including *Science*, *Nature, PNAS, Nature Chemistry, Nature Nanotechnology, Nature Communications, Nature Energy*, *Nature Catalysis*, *Journal of the American Chemical Society, Angewandte Chemie*, *Advanced Materials, Nano Letters, ACS Nano, Nano Today*, *Energy and Environmental Science, Advanced Energy Materials, Advanced Functional Materials, Small, Chemistry of Materials, Nano Energy,* and many others.
- Served as a panelist or proposal reviewer for the *U.S. National Science Fondation (NSF), U.S. DOE Office of Science, Office of Energy Efficiency and Renewable Energy (EERE), Czech Science Foundation, Research Grants Council of Hong Kong, National Research Foundation of Singapore, United States-Israel Binational Science Foundation, Estonian Research Council, and Natural Sciences and Engineering Research Council of Canada.*

Courses Taught

- CE 328 Chemical Engineering Lab and Lectures (*Spring*), 70-90 undergraduate: 2019-present
- CE 433/534, Materials Science and Corrosion (*Spring*), 90-110 undergraduate/graduate students: 2015-2018 and 2021-

- CE 422/522, Electrochemical Energy and Environment (*Fall*), 40-50 undergraduate/graduate students: 2015-present

Research Supervision

Prior Graduate Students

Ph.D. students (**4**): *Shiva Gupta* (2017, *Research scientist*, Intel); *Hanguang Zhang* (2019, *Postdoc* at Los Alamos National Laboratory); *Zhi Qiao* (2020, *Postdoc* at Texas A&M); Yanghua He (2020) (*Postdoc* at Rice University)

M.S. students (**15**): Anix Casimir (*African American*); Haiyang Sheng; Kuo Ma; Surya Vamsi Devaguptapu, Min Wei, Zhi Qiao, Shuo Ding, Qing Lan, Benjamin Hultman, Bryan Matthew, Kemakorn Ithisuphalap, Kate Chen, Yingjie Chen, Jing Xue, Jingyun Wang

Current Advisees

- Postdocs (**5**): Qiurong Shi (*female*), Shengwen Liu; Lin Guo, Yachao Zeng; Hassina Tabassum (*female*)
- Ph.D. students (**6**): Shreya Mukherjee (*female*), Mengjie Chen, Nadia Mohd Adli (*female*), Kate Chen, Cameron Priest; and Joshua Sokolowski
- M.S. students (**10**): Yingjie Chen, Kemakorn Ithisuphalap (*female*), Janel Abbott (*female*), Bryan Matthews, Kate Chen, Joshua Sokolowski, Vishal Tuli, Bingzhang Zhang, Viswa Phani Marthi, Zimin Wang
- Undergraduate researchers (**17**): Vyomika Sangwan (*female*), Obianuju Joy Obiano (*African American female*), Jing Xue, Hannah Osgood (*female*), Ana Santandreu (*female*), Emmanuel Nsengiyumva (*African American*), Hengyu Pan, Jingyun Wang (*female*), William Kellogg, Daniel Matera, Qinqin Xiao (*female*), Victor Pang, Anna Sviripa (*female*), Ziming Wang (*female*), Dylan Tiffany, Cameron Priest, Jieun Chang (*female*)

Grant Support (3 NSF and 11 DOE projects)

To date (September 2020), secured more than **$5.0 M** ($4,6545,445) *for UB from federal funding since joining UB in August 2014. (All of the funding amounts shown in* ***bold*** *are for UB portion of projects)*

The PI of the National Science Foundation (NSF) Awards

- "*Collaborative Research: Designing Nitrogen Coordinated Single Atomic Metal Electrocatalysts for Selective CO_2 Reduction to CO*", National Science Foundation (NSF) - CBET-Catalysis-1804326, **$200,000**, (***PI****, 100%*), 2018-2021.
- "*Engineering Nanocarbon Air Cathodes for High-Temperature Solid-State Li-O_2 Batteries*", National Science Foundation (NSF) - CBET-Process & Reaction Engineering-1604392, **$300,000**, (***PI,*** *85%*); co-PI: Edward Furlani (15%, *passed away in 2018*), 2016-2021.
- "*Three-dimensional porous nanographene for highly efficient energy storage in Li-ion batteries*", National Science Foundation (NSF) - CBET-Energy Sustainability-1511528, **$300,000**, (***PI,*** *80%*); co-PIs: Chong Cheng (10%) and Johannes Hachmann (10%), 2015-2019.

The PI at UB from the Department of Energy (DOE)

- *"Mesoporous Carbon based PGM-free Catalyst Cathodes",* U.S. Department of Energy, Energy Efficiency Renewable Energy (EERE) Office, UB Funding: **$397,000**, PI at UB (100%), led by Prof. Jian Xi at *Indiana University Purdue University*; *Teams includes UB and United Technologies Corporation*; *Total funding: $1,000,000,* 2019-2021.
- "Advanced Electrocatalysts through crystallographic enhancement" U.S. Department of Energy, EERE, Fuel Cell Technologies Office, UB Funding: **$320,000**, *PI at UB (100%), led by Dr. Jacob Spendelow at Los Alamos National Laboratory; Teams include UB, Brown University, University of Pennsylvania, and* TW-II Inc. Total funding: $2,000,000, 2016-2021.
- *"Stationary Direct Methanol Fuel Cells Using Pure Methanol",* U.S. Department of Energy, Energy Efficiency Renewable Energy (EERE) Office, UB Funding: **$240,000**, PI at UB (100%), led by Prof. Xianglin Li at *University of Kansas; Teams include UB, Carnegie Mellon University, and Kansas State University; Total Funding: $1,000,000,* 2019-2022.
- *High-Efficiency Reversible Alkaline Membrane Fuel Cells,* U.S. Department of Energy, Energy Efficiency Renewable Energy(EERE) Office, UB Funding: **$150,000**, PI at UB (100%), led by Dr. Hui Xu at *Giner; Teams include UB, University of Delaware, and National Renewable Energy Laboratory; Total Funding: $1,000,000,* 2019-2021.
- "*PGM-free OER Catalysts for PEM Electrolyzer"*, U.S. Department of Energy, Energy Efficiency Renewable Energy (EERE) Office, UB Funding: **$65,000** (Phase II), PI at UB (100%), led by Dr. Di-jia Liu at *Argonne National Laboratory; Teams include UB and Giner Inc; Total Funding: $250,000,* 2019-2020.
- "*Durable Mn-based PGM-Free Catalysts for Polymer Electrolyte Membrane Fuel Cells*", U.S. Department of Energy, Energy Efficiency Renewable Energy (EERE) Office, UB Funding: **$640,000**, PI at UB (100%), led by Dr. Hui Xu at *Giner Inc; Teams include UB, General Motor, and University of Pittsburg; Total Funding: $2,000,000,* 2018-2021.
- "*Advanced PGM-free Cathode Engineering for High Power Density and Durability*", U.S. Department of Energy, Energy Efficiency Renewable Energy(EERE) Office, UB Funding: **$528,000**, PI at UB (100%), led by Prof. Shawn Lister at *Carnegie Mellon University; Teams include UB, 3M, and Giner Inc; Total Funding: $2,000,000*, 2017-2021.
- "*PGM-free OER Catalysts for PEM Electrolyzer"*, U.S. Department of Energy, Energy Efficiency Renewable Energy (EERE) Office, UB Funding: **$75,000** (Phase I), PI at UB (100%), led by Dr. Dijia Liu at *Argonne National Laboratory; Teams include UB and Giner Inc; Total funding: $250,000,* 2017-2018.
- "*Low Temperature NH_3 Cracking Membrane Reactor for H_2 Generation*" U.S. Department of Energy, Advanced Research Projects Agency-Energy (APRA-e) Office, UB Funding: **$285,000**, *PI at UB (100%), led by Dr. Zhong Tang at Bettergy Corp; Total funding: $800,000,* 2017-2020.
- "High-Efficiency Ammonia Production from Water and Nitrogen" U.S. Department of Energy, Advanced Research Projects Agency-Energy (APRA-e) Office, UB Funding: **$320,000**, *PI at UB (100%), led by Dr. Hui Xu at Giner Inc.; Teams include UB, University of Delaware, and National Renewable Energy Laboratory; Total funding is $1,500,000,* 2017-2020.
- "*Advanced catalysts and MEAs for reversible alkaline fuel cells*", U.S. Department of Energy, EERE, Fuel Cell Technologies Office, UB Funding: **$280,000**, *PI at UB (100%), led by Dr. Hui*

Xu at Giner Inc.; Teams include UB and National Renewable Energy Laboratory; Total funding: $1,000,000, 2015-2017.

National Laboratories and Industry Funding

- *"Stratigic collaborations between UB and LANL to develop high-performance fuel cell catalysts",* Los Alamos National Laboratory*: **$170,000,** 2021-2023. (PI at UB, 100%)*
- *"High-temperature electrolyzers for Hydrogen production", Idaho National Laboratory, UB Funding: **$180,000**, 2021-2023* (*PI, 100%)*.
- "*Nanographene anode for highly efficient energy storage",* Los Alamos National Laboratory, UB Funding: **$150,000**, 2014-2017 (*PI, 100%)*.

New York State, SUNY, and UB internal funding

- "*High-performance Hydrogen Fuel Cell Catalysts for Transportation*" *UB Accelerator Fund,* **$87, 000,** PI (100% share) 2021/2 to 2021/11.
- "*High-efficient ammonia cracking for hydrogen generation*" New York State Energy Research and Development Authority (NYSERDA), **$90,000**, PI at UB (100%), collaborating with *Bettergy Corp* (Peekskill, NY); *Total funding: $300,000,* 2019-2021.
- *Buffalo Blue Sky Golden Award*: **$20,000**, University at Buffalo, SUNY, 2018-2020.
- "*Atomic-metal-rich carbon electrocatalysts for sustainable energy via CO_2 reduction*" **$35, 000,** RENEW Award (co-PI, 33%); PI: Luis Velarde (CHE, 34%), Michel Dupuis (CBE, 33%), 2017-2018.
- "*Si Nanocomposite Anode Coated with Lithium-Rich Ferroelectric Layer for High-Performance Lithium-Ion Batteries*", **$35,000,** SMART Award (co-PI, 30%): PI Fei Yao (40% and Quanxi Jia (30%) at MDI, 2017-2018.
- "*Engineering graphene tubes as fuel cell supports*", New York State Center of Excellence in Materials Informatics, **$27, 000**, (*PI, 100%*), 2016-2017.
- "*3D Printing Flexible Solid-State High-Energy-Density Graphene Supercapacitors*", UB SMART Award **$34,500** (co-PI, 50%); PI: Chi Zhou (50%) from Industrial and Systems Engineering, 2016-2017.
- "*Engineering Photocatalysts for Clean H_2 Generation*" IMPACT Award, **$33,000**, (PI, 40%); Co-PIs: Hao Zeng (30%) and Peihong Zhang (30%), 2016-2017.
- "*Advanced carbon nanomaterials for supercapacitor energy storage*", SUNY Network of Excellence in Materials and Advanced Manufacturing. **$12,500**, (*PI at UB, 100%, led by Stony Brook,* 2015-2016.
- "*Solid-state graphene-based high-performance supercapacitors*", New York State Center of Excellence in Materials Informatics, **$25,000**, 2015 (*PI, 100%*), 2014-2015.

Peer - Refereed Publication List

*(More than **250** publications in total with >**27,000** citations [Google Scholar], h-index: **82** i10 index: **219**);*
Google Scholar profile: http://scholar.google.com/citations?user=fRf374gAAAAJ&hl=en

- Graduate students or postdocs from Wu's group are marked using **Bold;**
- Corresponding authors are marked using an **asterisk (*)**
- **Top journals** in the field are highlighted.

2021

1. **Y. He**, Q. Shi, W. Shan, X. Li, A. J. Kropf, E. C. Wegener, J. Wright, S. Karakalos, D. Su, D. A. Cullen, G. Wang, D. J. Myers, G. Wu*, "Dynamically Unveiling Metal-Nitrogen Coordination during Thermal Activation to Design High-Efficient Atomically Dispersed CoN4 Active Sites", ***Angew. Chem.-Int. Edit***. , doi: 10.1002/anie.202017288, , **2021**.
2. X Cheng, Y Lu, L Zheng, **M Pupucevski**, H Li, G Chen, S Sun, G Wu*, Engineering Local Coordination Environment of Atomically Dispersed Platinum Catalyst via Lattice Distortion of Support for Efficient Hydrogen Evolution Reaction, ***Materials Today Energy***, 100653, **2021**.
3. **S. Liu**, Q. Shi, G. Wu*, "Solving the activity–stability trade-off riddle", ***Nature Catalysis*** 4, 6-7, , **2021**.
4. **Y. Li**, H. S. Pillai, E. Wang, S. Hwang, Y. Zhao, Z. Qiao, Q. Mu, S. Karakalos, M. Chen, J. Yang, D. Su, H. Xin, Y. Yan, G. Wu*, "High-Performance Ammonia Oxidation Catalysts for Anion-Exchange Membrane Direct Ammonia Fuel Cells ", ***Energy Environ. Sci***. 14, doi: 10.1039/D0EE03351K, **2021**.
5. L. Xie, J. Liang, **C. Priest**, T. Wang, D. Ding, G. Wu*, Q. Li, "Engineering Atomic Arrangement of Bimetallic Catalysts for Electrochemical CO_2 reduction", ***Chem. Commun***. , doi:10.1039/D0CC07589B, **2021**.
6. **X. Yang**, S. Sun, L. Meng, K. Li, S. Mukherjee, X. Chen, J. Lv, S. Liang, H-Y. Zang, L. K. Yan, G. Wu*, "Molecular Single Iron Site Catalysts for Electrochemical Nitrogen Fixation under Ambient Conditions", ***Appl. Catal. B-Environ***. 285, 119794, **2021**.
7. Z. Li, A. Cao, Q. Zheng, Y. Fu, T. Wang, K. T. Arul, J. L. Chen, B. Yang, **N. M. Adli**, L. Lei, C. L. Dong, J. Xiao, G. Wu*, Y. Hou, "Elucidation of the Synergistic Effect of Dopants and Vacancies on Promoted Selectivity for CO_2 Electroreduction to Formate", ***Adv. Mater***. 33, 2005113, **2021**.
8. Y. Zhu, **X. Yang**, C. Peng, **C. Priest**, Y. Mei, G. Wu*, "Carbon-supported Single Metal Site Catalysts for Electrochemical CO_2 Reduction to CO and Beyond", ***Small*** , 10.1002/smll.202005148, **2021**.
9. **N. M. Adli**, W. Shan, S. Hwang, W. Samarakoon, S. Karakalos, Y. Li, D. A. Cullen, D. Su, Z. Feng, G. Wang, G. Wu*, "Engineering Atomically Dispersed FeN4 Active Sites for CO_2 Electroreduction", ***Angew. Chem.-Int. Edit***. 60, 1022-1032, **2021**.

2020

10. H. Xie, Y. Wan, X. Wang, J. Liang, G. Lu, T. Wang, G. Chai, **N. M. Adli, C. Priest**, Y. Huang, G. Wu, Q. Li, "Boosting Pd-catalysis for electrochemical CO_2 reduction to CO on Bi-Pd single atom alloy nanodendrites", ***Appl. Catal. B-Environ***. , doi: 10.1016/j.apcatb.2020.119783, **2020**.

11. R. Abbasi, **H. Wang**, J. R. Lattimer, H. Xu, G. Wu, Y. Yan*, "Effect of Ammonia on the Electrocatalysis of Oxygen Reduction Reaction in Base", ***J. Electrochem. Soc***. 167, 164510, **2020**.
12. X. Xie, C. He, B. Li, **Y. He**, D. A. Cullen, E. C. Wegener, A. J. Kropf, U. Martinez, Y. Cheng, M. H. Engelhard, M. E. Bowden, M. Song, T. Lemmon, X. S. Li, Z. Nie, J. Liu, D. J. Myers, P. Zelenay, G. F. Wang, G. Wu*, V. Ramani*, Y. Shao*, "Performance enhancement and degradation mechanism identification of a single-atom Co–N–C catalyst for proton exchange membrane fuel cells", ***Nature Catalysis*** 3, 1044-1054, **2020**.
13. R. Liu, W. Liu, Y. Bu, W. Yang, C. Wang, **C. Priest**, Z. Liu, Y. Wang, J. Chen, Y. Wang, J. Cheng, X. Lin, X. Feng, G. Wu*, Y. Ma, W. Huang, "Conductive Porous Laminated Vanadium Nitride as Carbon-Free Hosts for High-Loading Sulfur Cathodes in Lithium−Sulfur Batteries", ***ACS Nano*** 14, 17308-17320, **2020**.
14. C. Z. Wu, G. G. Wu. H. Yu, "Preface: Special topic on electrocatalysis & energy science", ***Sci. China-Chem***. 63, 1515-1516, **2020**.
15. X. Wang, Y. Wang, X. Sang, W. Zheng, S. Zhang, L. Shuai, B. Yang, Z. Li, J. Chen, L. Lei, **N. M. Adli**, M. K. Leung, M. Qiu, G. Wu*, Y. Hou*, "Dynamic Activation of Adsorped Intermediates via Axial Traction for the Promoted Electrochemical CO_2 Reduction", ***Angew. Chem.-Int. Edit***. , doi:10.1002/anie.202013427, **2020**.
16. Y. Wang, H. Su, **Y. He**, L. Li, S. Zhu, H. Shen, P. Xie, X. Fu, G. Zhou, C. Feng, D. Zhao, F. Xiao, X. Zhu, Y. Zeng, M. Shao, S. Chen, G. Wu*, J. Zeng*, C. Wang*, "Advanced Electrocatalysts with Single-Metal-Atom Active Sites", ***Chem. Rev***. 120, 12217-12314, **2020**.
17. **Y. Zeng**, **C. Priest**, G. Wang, G. Wu*, "Restoring Nitrogen Cycle by Electrochemical Reduction of Nitrate: Progress and Prospects", ***Small Methods*** 4, 2000672, **2020**.
18. S. Y. Qiu, C. Wang, L. S. Zhang, L. L. Gu, Z. Jiang, J. Gao, **J. Sokolowski**, G. Wu*, X. D. Zhu*, "Hollow C@TiO_2 array nanospheres as efficient sulfur host for lithium-sulfur batteries", ***Sustainable Energy & Fuels*** 4, 5493-5497, **2020**.
19. **Y. He**, H. Guo, S. Hwang, X. Yang, Z. He, J. Braaten, S. Karakalos, W. Shan, M. Wang, H. Zhou, Z. Feng, K. L. More, G. Wang, D. Su, D. A. Cullen, L. Fei, S. Litster, G. Wu*, "Single Cobalt Sites Dispersed in Hierarchically Porous Nanofiber Networks for Durable and High-Power PGM-free Cathodes in Fuel Cells", ***Adv. Mater***. 32, 2003577, **2020**.
20. **M. Chen**, X. Li, F. yang, B. Li, T. Stracensky, S. Karakalos, S. Mukerjee, Q. Jia, D. Su, G. Wang, G. Wu*, H. Xu, "Atomically Dispersed MnN4 Catalysts via Environmentally Benign Aqueous Synthesis for Oxygen Reduction: Mechanistic Understanding of Activity and Stability Improvements", ***ACS Catalysis*** 10, 10523-10534, **2020**.
21. **S. Liu**, M. Wang, X. Yang, Q. Shi, Z. Qiao, M. Lucero, Q. Ma, K. L. More, D. A. Cullen, Z. Feng, G. Wu*, "Chemical Vapor Deposition for Atomically Dispersed and Nitrogen Coordinated Single Metal Site Catalysts", ***Angew. Chem.-Int. Edit***. 59, 21698-21705, **2020**.
22. **Q. Shi**, Y. He, X. Bai, M. Wang, D. A. Cullen, M. Lucero, X. Zhao, K. L. More, H. Zhou, Z. Feng, Y. Liu, G. Wu*, "Methanol Tolerance of Atomically Dispersed Single Metal Site Catalysts: Mechanistic Understanding and High-performance Direct Methanol Fuel Cells ", ***Energy Environ. Sci***. 13, 3544-3555, **2020**.
23. S. K. Babu, D. Spernjak, R. Mukundan, D. S. Hussey, D. L. Jacobson, H. T. Chung, G. Wu, A. J. Steinbach, S. Litster, R. L. Borup, P. Zelenay, "Understanding water management in platinum group metal-free electrodes using neutron imaging", ***J. Power Sources*** 472, 228442, **2020**.

24. X. Qiao, H. Kang, Y. Li, K. Cui, X. Jia, H. Liu, W. Qin, **M. Pupucevski**, G. Wu*, "Porous Fe-doped β Ni (OH) 2 Nanopyramid Array Electrodes for Water Splitting", ***ACS Appl. Mater. Interfaces*** 12, 36208-36219, **2020**.
25. K. Wang, X. Wang, Z. Li, B. Yang, M. Ling, X. Gao, J. Lu, **Q. Shi**, L. Lei, G. Wu*, Y. Hou, "Designing 3d dual transition metal electrocatalysts for oxygen evolution reaction in alkaline electrolyte: Beyond oxides", ***Nano Energy*** 77, 105162, **2020**.
26. S. Y. Qiu, C. Wang, Z. X. Jiang, L. S. Zhang, L. L. Gu, K. X. Wang, J. Gao, X. D. Zhu, G. Wu*, "Rational design of MXene@ TiO2 nanoarray enabling dual lithium polysulfides chemisorption towards high-performance lithium-sulfur batteries", ***Nanoscale*** 12, 16678-16684, **2020**.
27. J. Liang, L. Zhu, S. Chen, **C. Priest**, X. Liu, H. L. Wang, G. Wu, Q. Li*, "Defect-Rich Copper-doped Ruthenium Hollow Nanoparticles for Efficient Hydrogen Evolution Electrocatalysis in Alkaline Electrolyte", ***Chem.-Asian J***. , doi: 10.1002/asia.202000695, **2020**.
28. **X. Zhao**, X. Yang, M. Wang, S. Hwang, S. Karakalos, M. Chen, Z. Qiao, L. Wang, B. Liu, Q. Ma, D. A. Cullen, D. Su, H. Yang, H. Y. zang, Z. Feng, G. Wu*, "Single-Iron Site Catalysts with Self-Assembled Dual-size Architecture and Hierarchical Porosity for Proton-Exchange Membrane Fuel Cells", ***Appl. Catal. B-Environ***. 279, 119400, **2020**.
29. **Y. He**, S. Liu, C. Priest, Q. R. Shi, G. Wu*, "Atomically Dispersed Metal-Nitrogen-Carbon Catalysts for Fuel Cells: Advances in Catalyst Design, Electrode Performance, and Durability Improvement", ***Chem. Soc. Rev***. 49, 3484-3524, **2020**.
30. C. Liu, Z. Wang, Z. Zong, Y. Jin, D. Li, Y. Xiong*, G. Wu*, "N & S co-doped carbon nanofiber network embedded with ultrafine NiCo nanoalloy for efficient oxygen electrocatalysis and Zn-air battery ", ***Nanoscale*** 12, 9581-9589, **2020**.
31. **X. X. Wang**, J. Sokolowski, H. Liu, G. Wu*, "Pt alloy oxygen-reduction electrocatalysts: Synthesis, structure, and property", ***Chinese Journal of Catalysis*** 41, 739-755, **2020**.
32. **Y. Li**, H. Wang, C. Priest, S. Li, P. Xu, G. Wu*, "Advanced Electrocatalysis for Energy and Environmental Sustainability via Water and Nitrogen Reactions", ***Adv. Mater***. 32, doi:10.1002/adma.202000381, **2020**.
33. G. Chen, P. Liu, Z. Liao, F. Sun, **Y. He**, H. Zhong, T. Zhang, E. Zschech, M. Chen, G. Wu, J. Zhang, X. Feng, "Zinc-Mediated Template Synthesis of Fe-N-C Electrocatalysts with Densely Accessible Fe-Nx Active Sites for Efficient Oxygen Reduction", ***Adv. Mater***. 32, 1907399, **2020**.
34. **Q. Shi**, S. Hwang, H. Yang, F. Ismail, D. Su, D. Higgins, G. Wu*, "Supported and Coordinated Single Metal Site Electrocatalysts", ***Materials Today*** 37, 93-111, **2020**.
35. **Y. Li**, X. Li, H.S. Pillai, J. Lattimer, N. M. Adli, S. Karakalos, M. Chen, L. Guo, H. Xu, J. Yang, D. Su, H. Xin, G. Wu*, "Ternary PtIrNi Catalysts for Efficient Electrochemical Ammonia Oxidation", ***ACS Catalysis*** 10, 3945-3957, **2020**.
36. Z. Wei, Y. Ren, **J. Sokolowski**, X. Zhu, G. Wu*, "Mechanistic understanding of the role separators playing in advanced lithium-sulfur batteries", ***InfoMat*** 2, 483-508, **2020**.
37. **S. Mukherjee**, X. Yang, W. Shan, W. Samarakoon, S. Karakalos, D. A. Cullen, K. L. More, M. Wang, Z. Feng, G. F. Wang, G. Wu*, "Atomically Dispersed Single Ni Site Catalysts for Nitrogen Reduction toward Electrochemical Ammonia Synthesis Using N_2 and H_2O", ***Small Methods*** 4, 1900821, **2020**.
38. H. Xu, **K. Ithisuphalap, Y. Li, S. Mukherjee**, J. Lattimer, G. Soloveichik, G. Wu*, "Electrochemical Ammonia Synthesis through N_2 and H_2O under Ambient Conditions:

Theory, Practices, and Challenges for Catalysts and Electrolytes", ***Nano Energy*** 69, 104469, **2020**.

39. F. Pan, B. Li, E. Sarnello, S. Hwang, Y. Gang, X. Feng, X. Xiang, **N. M. Adli**, T. Li, D. Su, G. Wu*, G. Wang, Y. Li, "Boosting CO2 Reduction on Fe-NC with Sulfur Incorporation: Synergistic Electronic and Structural Engineering", ***Nano Energy*** 68, 104384, **2020**.
40. A Uddin, L. Langhorst, **H. Zhang**, L. Hu, G. Wu, S. Litster, "High Power Density PGM-Free Cathodes for Polymer Electrolyte Fuel Cells", ***ACS Appl. Mater. Interfaces*** 12, 2216-2224, **2020**.
41. Y. Zhu, **J. Sokolowski**, X. Song, **Y. He**, Y. Mei, G. Wu*, "Engineering Local Coordination Environments of Atomically Dispersed and Heteroatom-coordinated Single Metal Site Electrocatalysts for Clean Energy-Conversion", ***Adv. Energy Mater***. 10, 1902844, **2020**.
42. A. Liu, Q. Yang, X. Ren, F. Meng, L. Gao, Y. Yang, T. Ma, G. Wu*, "Energy- and cost-efficient NaCl-assisted synthesis of MAX-phase Ti3AlC2 at lower temperature", ***Ceramics International*** 46, 6934-6939, **2020**.
43. J. Hou, M. Yang, C. Ke, G. Wei, **C. Priest, Z. Qiao**, G. Wu*, J. Zhang*, "Platinum-group-metal catalysts for proton exchange membrane fuel cells: from catalyst design to electrode structure optimization", ***EnergyChem*** 2, 100023, **2020**.
44. X. Ren, Q. Lv, L. Liu, B. Liu, Y. Wang, A. Liu*, G. Wu*, "Current progress of Pt and Pt-based electrocatalysts used for fuel cells", ***Sustainable Energy & Fuels*** 4, 15-30, **2020**.

2019

45. **J. Li, H. Zhang**, W. Samarakoon, W. Shan, D. Cullen, S. Karakalos, **M. Chen**, D. Gu, K. More, G. Wang, Z. Feng, Z. Wang and G. Wu*, Thermally Driven Structure and Performance Evolution of Atomically Dispersed Fe-N_4 Sites for Oxygen Reduction. ***Angew. Chem. Int. Ed****., 58,* 18971-18980, **2019.**
46. **X. X. Wang,** M. T. Swihart, G. Wu*, Achievements, challenges and perspectives on cathode catalysts in proton-exchange membrane fuel cells for transportation, ***Nature Catalysis*** 2, 578-589, **2019**. (*an invited Review Article for a Special Issue on Catalysis for Transportation*)
47. **Z. Qiao**, S. Hwang, X. Li, C. Wang, W. Samarakoon, S. Karakalos, D. Li, **M. Chen**, **Y. He**, M. Wang, Z. Liu, H. Zhou, G. Wang, Z. Feng, D. Su, J. S. Spendelow, G. Wu*, 3D Porous Graphitic Nanocarbon for Enhancing Performance and Durability of Pt Catalysts: Balance between Graphitization and Hierarchical Porosity, ***Energy & Environmental Science*** 12 (9), 2830-2841, **2019**.
48. **M. Chen**, Y. He, J. S. Spendelow, G. Wu*, Atomically Dispersed Metal Catalysts for Oxygen Reduction, ***ACS Energy Letters*** 4, 1619-1633, **2019**. (*Impact Factor: 16.5; Invited Perspective Article*).
49. **H. Zhang**, H. T. Chung, D. A. Cullen, S. Wagner, U. I. Kramm, K. L. More, P. Zelenay, G. Wu*, High-performance fuel cell cathodes exclusively containing atomically dispersed iron active sites, ***Energy & Environmental Science***, 12, 2548-2558, **2019**.
50. **Q. Tan**, C. Y. Shu, **J. Abbott**, Q. Zhao, L. Liu, T. Qu, Y. Chen, H. Zhu, Y. Ni. Liu, G. Wu*, "Highly dispersed Pd-CeO_2 Nanoparticles Supported on N-doped Core-Shell Structured Mesoporous Carbon for Methanol Oxidation in Alkaline Media", *ACS Catalysis* 9, 6362-6371, **2019**.
51. **Y. He**, S. Hwang, D.A. Cullen, M.A. Uddin, L. Langhorst, B. Li, S. Karakalos, A.J. Kropf, E.C. Wegener, **J. Sokolowski**, **M. Chen**, D.J. Myers, D. Su, K.L. More, G. Wang, S. Litster, G. Wu*, Highly active atomically dispersed con4 fuel cell cathode catalysts derived from

surfactant-assisted MOFs: Carbon-shell confinement strategy. ***Energy & Environmental Science***, 12 (1), 250-260, **2019**.

52. **Ogoke,** S. Hwang, B. Hultman, M. Chen, S. Karakalos, Y. He, A. Ramsey, D. Su, P. Alexandridis* G. Wu,* Large-diameter and Heteroatom-doped Graphene Nanotubes Decorated with Transition Metals as Carbon Hosts for Lithium-Sulfur Batteries. *Journal of Materials Chemistry A,* 7, 13389-13399, **2019**.
53. **H. Zhang**, **S. Ding**, S. Hwang, X. Zhao, D. Su, H. Xu, H. Yang, G. Wu*, Atomically Dispersed Iron Cathode Catalysts Derived from Binary Ligand-Based Zeolitic Imidazolate Frameworks with Enhanced Stability for PEM Fuel Cells, *J. Electrochem. Soc*. 166, F3116-F3122, **2019**. (*Invited submission to a Focus Issue on Advances in Modern Polymer Electrolyte Fuel Cells in Honor of Shimshon Gottesfeld*.)
54. **Y. He**, Q. Tang, L. Lu, J. Sokolowski, G. Wu*, Metal-Nitrogen-Carbon Catalysts for Oxygen Reduction in PEM Fuel Cells: Self-Template Synthesis Approach to Enhancing Catalytic Activity and Stability, *Electrochemical Energy Reviews* 2, 231-251, **2019**. (*Invited Review Article*).
55. K. Liu, **Z. Qiao** (co-first author), S. Hwang, Z. Liu, H. Zhang, D. Su, H. Xu, G. Wu*, G. F. Wang*, Mn-and N-doped Carbon as Promising Catalysts for Oxygen Reduction Reaction: Theoretical Prediction and Experimental Validation, ***Appl. Catal. B-Environ.*** 243, 195-203, **2019**.
56. **K. Ithisuphalap, H. Zhang, L. Guo**, Q. Yang, H.P. Yang, G. Wu*, Photocatalysis and Photoelectrocatalysis Methods of Nitrogen Reduction for Sustainable Ammonia Synthesis. *Small Methods*, 3(6), 1800352, **2019.** (Invited submission to a special issue on Nitrogen Reduction Reaction)
57. **X. X. Wang**, V. Prabhakaran, Y. He, Y. Shao, G. Wu*, PGM- and Iron-free Cathode Catalysts for Proton Exchange Membrane Fuel Cells: Cobalt Catalysts and Peroxide Mitigation Approach, ***Advanced Materials***, 31, 1805126, **2019**. *Invited submission for a special issue on Electrochemical Energy Materials)*
58. F. Pan, B. Li, E. Sarnello, S. Hwang, Y. Gang, X. Feng, X. Xiang, **N.M. Adli**, T. Li, D. Su, G. Wu*, G. Wang*, Y. Li*, Boosting CO_2 Reduction on Fe-N-C with Sulfur Incorporation: Synergistic Electronic and Structural Engineering, *Nano Energy*, (2019) 104384.
59. F. Pan, **H. Zhang** (co-first author), Z. Liu, D.A. Cullen, K. Liu, K.L. More, G. Wu*, G. Wang*, Y. Li*, Atomic-Level Active Sites of Efficient Imidazolate Frameworks-Derived Nickel Catalysts for CO_2 Reduction, *Journal of Materials Chemistry A*, 7, 26231-26237, **2019.**
60. X. Ren, Q. Lv, L. Liu, B. Liu, Y. Wang, A. Liu and G. Wu*, Current progress of Pt and Pt-based electrocatalysts used for fuel cells, *Sustainable Energy & Fuels*, 4, 15-30, **2019**.
61. C. Lei, S. Lyu, J. Si, B. Yang, Z. Li, Z. Wen, L. Lei, **J. Abbott**, G. Wu* and Y. Hou, Nanostructured Carbon Based Heterogeneous Electrocatalysts for Oxygen Evolution Reaction in Alkaline Media, *ChemCatChem*, 11, 5855-5874, **2019**.
62. X. Wang, Q. Zhao, B. Yang, Z. Li, Z. Bo, K.-h. Lam, **N. M. Adli**, l. lei, Z. Wen, G. Wu* and Y. Hou, Emerging Nanostructured Carbon-based Non-Precious Metal Electrocatalysts for Selectively Electrochemical CO_2 Reduction to CO, *Journal of Materials Chemistry A*, 7, 25191-25202, **2019.**
63. Liang, J.; Ma, F.; Hwang, S.; **Wang, X.; Sokolowski, J**.; Li, Q.; Wu, G*.; Su, D*., Atomic Arrangement Engineering of Metallic Nanocrystals for Energy-Conversion Electrocatalysis. ***Joule***, *3* (4), 956-991, **2019.**
64. Y. Li, **J. Abbott**, Y. Sun, Y. Du, X. Han, G. Wu*, P. Xu*, Ru Nanoassembly Catalysts for Hydrogen Evolution and Oxidation Reactions in Electrolytes at Various pH Values, ***Appl. Catal. B-Environ***., 258, 117952, **2019**.

65. N. Wang, W. Li, Y. Huang, G. Wu*, M. Hu, G. Li, Z. Shi*, Wrought Mg-Al-Pb-RE alloy strips as the anodes for Mg-air batteries", *J. Power Sources* 436, 226855, **2019**.
66. Zheng, W.; Guo, C.; Yang, J.; He, F.; Yang, B.; Li, Z.; Lei, L.; Xiao, J.; Wu, G*.; Hou, Y*., Highly active metallic nickel sites confined in N-doped carbon nanotubes toward significantly enhanced activity of CO_2 electroreduction. *Carbon* 150, 52-59, **2019**.
67. Wang, T.; Zhao, Q.; Fu, Y.; Lei, C.; Yang, B.; Li, Z.; Lei, L.; Wu, G*.; Hou, Y*., Carbon-Rich Nonprecious Metal Single Atom Electrocatalysts for CO_2 Reduction and Hydrogen Evolution. *Small Methods,* doi:10.1002/smtd.201900210, **2019**.
68. Chen, G.; An, J.; Meng, Y.; Yuan, C.; **Matthews, B**.; Dou, F.; Shi, L.; Zhou, Y.; Song, P.; Wu, G.*; Zhang D.*, Cation and Anion Co-doping Synergy to Improve Structural Stability of Li- and Mn-rich Layered Cathode Materials for Lithium-ion Batteries. *Nano Energy, 57*, 157-165, **2019**.
69. Guan, Y.; Hu, Y.; **Zhang, H**.; Wu, G.*; Yan, H.; Ren, S.*, Highly Conductive, Transparent Molecular Charge-Transfer Salt with Reversible Lithiation. *Chemical Communications* 55, 7179-7182, **2019**.
70. Huang, Z.; Qin, X.; Li, G.; Yao, W.; Liu, J.; Wang, N.; **Ithisuphalap, K**.; Wu, G.*; Shao, M.*; Shi, Z.*, Co_3O_4 Nanoparticles Anchored on Nitrogen-Doped Partially Exfoliated Multiwall Carbon Nanotubes as an Enhanced Oxygen Electrocatalyst for the Rechargeable and Flexible Solid-State Zn–Air Battery. *ACS Applied Energy Materials,* 2, 4428-4438, **2019**.
71. Chen, S.; Zhang, N.; Narváez Villarrubia, C. W.; Huang, X.; Xie, L.; Wang, X.; Kong, X.; Xu, H.; Wu, G.; Zeng, J.; Wang, H.-L.*, Single Fe atoms anchored by short-range ordered nanographene boost oxygen reduction reaction in acidic media., *Nano Energy*, 66, 104164, **2019**.
72. Uddin, A.; Dunsmore, L.; Zhang, H.; Hu, L.; Wu, G.; Litster, S.*, High Power Density Platinum Group Metal-free Cathodes for Polymer Electrolyte Fuel Cells. *ACS Applied Materials & Interfaces*, 10.1021/acsami.9b13945, **2019**.
73. Shao, Y.*; Dodelet, J.-P.; Wu, G.; Zelenay, P., PGM-Free Cathode Catalysts for PEM Fuel Cells: A Mini-Review on Stability Challenges.. ***Advanced Materials***, 31, 1807615, **2019**.
74. R. Abbasi, B. P. Setzler, S. Lin, J. Wang, Y. Zhao, H. Xu, B. Pivovar, B. Tian, X. Chen, G. Wu, Y. Yan*, "A Roadmap to Low-Cost Hydrogen with Hydroxide Exchange Membrane Electrolyzers", ***Advanced Materials****,* 31, 1805876, **2019**.

2018

75. **J. Li, M. Chen**, D. A. Cullen, S. Hwang, M. Wang, B. Li, K. Liu, S. Karakalos, M. Lucero, **H.G. Zhang**, C. Lei, H. Xu, G. E. Sterbinsky, Z. Feng, D. Su, K. L. More, G.F. Wang, Z. Wang G Wu*, Atomically Dispersed Manganese Catalysts for Oxygen Reduction in Proton Exchange Membrane Fuel Cells, ***Nature Catalysis***, 1, 935-945, **2018**.
76. **M. Chen**, S. Hwang, S. Karakalos, **K. Chen, Y. He, S. Mukherjee**, D. Su, G. Wu*, Pt-M Alloy Nanoparticles Decorated on Large-Size Nitrogen-Doped Graphene Tubes for Highly Stable Oxygen-Reduction Catalysts, *Nanoscale*, 10, 17318-17326, **2018**.
77. **H. Zhang, J. Li**, Q. Tan, L, Lei, Z. Wang, G. Wu*, Metal-Organic Frameworks and Their Derived Materials as Electrocatalysts and Photocatalysts for CO_2 Reduction: Progress, Challenge, and Perspective, *Chemistry – A European Journal,* 24, 18137-18157, **2018**. (*Invited Perspective Article for a Special Issue on Renewable Energy*)
78. **N. Mohd-Adli**, H. Zhang, S. Mukerjee, G. Wu* Ammonia Oxidation Electrocatalysis for Hydrogen Generation and Fuel Cells, *Journal of the Electrochemcial Society*, 165, J3130-J3147, **2018**. (*Invited submission to a Focus Issue on Electrocatalysis -- In Honor of Dr. Radoslav Adzic*)

79. **X. X. Wang**, S. Hwang, Y. T. Pan, **K. Chen**, Y. He, S. G. Karakalos, H. Zhang, J. S. Spendelow, D. Su, G. Wu*, Ordered Pt_3Co Intermetallic Nanoparticles Derived from Metal-organic Frameworks for Oxygen Reduction, ***Nano Lett.*** 18(7), 4163-4171, **2018**. (*Impact factor: 12.08*)
80. **S. Mukherjee**, D. A. Cullen, S. Karakalos, K. Liu, **H. Zhang**, S. Zhao, H. Xu, K. L. More, G. F. Wang, G. Wu*. Metal-organic framework-derived nitrogen-doped highly disordered carbon for electrochemical ammonia synthesis using N_2 and H_2O in alkaline electrolytes. ***Nano Energy*****,** *48*, 217-226, **2018**.
81. F. Pan, **H. Zhang** (co-first author), K. Liu, D. A. Cullen, K. L. More, M. Wang, Z. Feng, G. Wang, G. Wu*, Y. Li* Unveiling Active Sites of CO_2 Reduction on Nitrogen Coordinated and Atomically Dispersed Iron and Cobalt Catalysts. ***ACS Catalysis****, 8,* 3116–3122, **2018**.
82. **X. X. Wang,** D. A. Cullen, Y. T. Pan, S. Hwang, M. Wang, Z. Feng, **J. Wang**, M. H. Engelhard, H. Zhang, Y. He, Y. Shao, D. Su, K. L. More, J. S. Spendelow, G. Wu*, Nitrogen Coordinated Single Cobalt Atom Catalysts for Oxygen Reduction in Proton Exchange Membrane Fuel Cells, ***Advanced Materials***, 30, 1706758, **2018**. *One of The Most Cited Paper in Advanced Materials published in 2018.*)
83. **He, Y.; Matthews**, B.; Wang, X. X.; **Wang, J**. and Wu, G.*, Innovation and Challenges in Materials Design for Flexible Rechargeable Batteries: from One-dimensional to Three-dimensional, *Journal of Materials Chemistry A*, 6, 735-753, **2018**. (*Journal of Materials Chemistry A HOT Papers in 2018*)
84. **S. Mukherjee, S. Devaguptapu, A. Sviripa,** C. R. Lund, G. Wu,* Low-Temperature Ammonia Decomposition Catalysts for Hydrogen Generation, ***Applied Catalysis B: Environmental***, 226, 162-181, **2018**.
85. **M. Chen,** L. Wang, H. Yang, S. Zhao, H. Xu, G. Wu,* Nanocarbon/oxide composite catalysts for bifunctional oxygen reduction and evolution in reversible alkaline fuel cells: a mini review, *Journal of Power Sources,* 375, 277-290*,* **2018**. (*Invited submission to a Special Issue on Alkaline Membrane Fuel Cells: State-of-the-Art and Remaining Challenges*)
86. X. Zheng, J. Wu, X. Cao, C. Jin, H. Wang, **J. Abbott**, P. Strasser, R. Yang,* X. Chen, G. Wu,* Enhanced Oxygen Chemisorption on N, P and S Co-doped Graphene Derived from Onium Salts for Zn-air Battery Cathodes, ***Applied Catalysis B: Environmental***, 241, 442-451, **2018**.
87. M. Liu, X. Ren, Q. Yang, **J. Sokolowski** , J. Guo , Y. Li , L. Gao , M. An* , G. Wu*, Theoretical and Experimental Studies of the Prevention Mechanism of Organic Inhibitors on Silver Anti-tarnish, *Journal of the Electrochemical Society*, 165, H725-H732, **2018**
88. X Chen, F Ma, Y Lia, J Liang, **B Matthews, J Sokolowski,** J Han, G Wu,* L. Xing,* Q. Li*, .Nitrogen-doped carbon coated $LiNi_{0.6}Co_{0.2}Mn_{0.2}O_2$ cathode with enhanced electrochemical performance for Li-Ion batteries,, *Electrochimica Acta*, 284, 526-533, **2018**.
89. C. Lei, H. Chen, J. Cao, J. Yang, M. Qiu, Y. Xia, C. Yuan, B. Yang, Z. Li, X. Zhang, L. Lei, **J. Abbott**, Y. Zhong, X. Xia, G. Wu*, Q. He*, Y. Hou*, Fe-N_4 Sites Embedded into Carbon Nanofiber Integrated with Electrochemically Exfoliated Graphene for Oxygen Evolution in Acidic Medium, ***Advanced Energy Materials***, 1801912, **2018**.
90. S. Jiang, **K. Ithisuphalap**, X. Zeng, G. Wu*, H. Yang*, 3D porous cellular $NiCoO_2$/graphene network as a durable bifunctional electrocatalyst for oxygen evolution and reduction reactions, *Journal of Power Sources*, 399, 66-75, **2018**.
91. Z. Huang, X. Qin, X. Gu, G. Li, Y. Mu, N. Wang, **K. Ithisuphalap**, H. Wang, Z. Guo, Z. Shi, G. Wu*, M. Shao*, Mn_3O_4 Quantum Dots Supported on Nitrogen-Doped Partially Exfoliated Multiwall Carbon Nanotubes as Oxygen Reduction Electrocatalysts for High-Performance Zn–Air Batteries, *ACS Applied Materials & Interfaces*, 10, 23900-23909. **2018**.

92. H. Ge, L. Cui, Z. J. Sun, D. Wang, S. Nie, S. Zhu, **B. Matthews**, G. Wu*, X. M. Song*, T. Y. Ma*, Unique $Li_4Ti_5O_{12}/TiO_2$ multilayer arrays with advanced surface lithium storage capability, *Journal of Materials Chemistry A*, 6, 22053-22061, **2018**.
93. Li, J.; Zhang, Y.; Gao, T.; Han, J.; Wang, X.; **Hultman, B**.; Xu, P.; Zhang, Z.; Wu, G.*; Song, B.* A confined "microreactor" synthesis strategy to three dimensional nitrogen-doped graphene for high-performance sodium ion battery anodes. *Journal of Power Sources*, *378*, 105-111, **2018**.
94. Ma, F.; Liang, J.; Wang, T.; Chen, X.; Fan, Y.; **Hultman, B**.; Xie, H.; Han, J.; Wu, G*.; Li, Q.* Efficient entrapment and catalytic conversion of lithium polysulfides on hollow metal oxide submicro-spheres as lithium-sulfur battery cathodes. *Nanoscale***,** *10*, 5634-5641, **2018**.
95. Y. Liu, H. G. Zhang, P. K. Behara, X. Y. Wang, D. W. Zhu, S. Ding, S. P. Ganesh, M. Dupuis*, G. Wu*, M. T. Swihart*, "Synthesis and Anisotropic Electrocatalytic Activity of Covellite Nanoplatelets with Fixed Thickness and Tunable Diameter", *ACS Appl. Mater. Interfaces* 10, 42417-42426, **2018**.
96. R. Liu, Q. Kang, W. Liu, Z. Liu, Y. Liu, Y. Wang, J. Chen, B. Hultman, X. Lin, Y. Li, P. Li, Z. Huang, X. Feng, G. Wu*, L. Yu, Y. Ma*, "Carbon Nanotube-Connected Yolk–Shell Carbon Nanopolyhedras with Cobalt and Nitrogen Doping as Sulfur Immobilizers for High-Performance Lithium–Sulfur Batteries", *ACS Appl. Mater. Interfaces* 1, 6487-6496, **2018**.
97. Shan, C.; Wu, K.; Yen, H.-J.; Narvaez Villarrubia, C.; Nakotte, T.; Bo, X.; Zhou, M.; Wu, G.; Wang, H.-L.*, Graphene Oxides Used as a New "Dual Role" Binder for Stabilizing Silicon Nanoparticles in Lithium-Ion Battery, *ACS Appl. Mater. Interfaces* 10, 15665-15672, **2018**.
98. Zhao, X.; Chen, M.; Zuo, J.; Wang, J.; Liu, Z.; Wang, L.; Liu, B.; Wu, G.; Zhang, H.; Yang, H., Fe-Doped Metal-Organic Frameworks-Derived Electrocatalysts for Oxygen Reduction Reaction in Alkaline Media. *J. Electrochem. Soc*. 165, F1278-F1285, **2018**.

2017

99. **S. Devaguptapu,** S. Hwang, S. Zhao, S. Karakalos, H. Xu, **S. Gupta,** D. Su, G. Wu,* Morphology Dependent Performance of Carbon-free Spinel $NiCo_2O_4$ Catalysts for Bifunctional Oxygen Reduction and Evolution in Alkaline Media, *ACS Applied Materials and Interface*, 9, 44567–44578, **2017**.
100. **M. Wei,** L. Qiao, **K. Ma,** S. Karakalos, H. Zhang, Z. Fu, M. S. Swihart, G. Wu,* Engineering Reduced Graphene Oxides with Enhanced Electrochemical Properties through Multiple-Step Reduction, *Electrochimica Acta*, 258, 735-743, **2017**.
101. **S. Gupta**, S. Zhao, X. Wang, S. Hwang, S. Karakalos, S. Devaguptapu, S. Mukherjee, D. Su, H. Xu, G. Wu.*, FeCoNiMn-based nanocarbon electrocatalysts for bifunctional oxygen reduction and evolution: promotional role of Mn doping in stabilizing carbon, *ACS Catalysis* 7, 8386–8393, **2017**.
102. **Zhang, H**.; Hwang, S.; Wang, M.; Feng, Z.; Karakalos, S.; Luo, L.; **Qiao, Z**.; Xie, X.; Wang, C.; Su, D.; Shao, Y.; Wu, G.*, Single Atomic Iron Catalysts for Oxygen Reduction in Acidic Media: Particle Size Control and Thermal Activation, ***Journal of the American Chemical Society***, 139, 14143-14149, **2017**.
103. **Zhang, F**.; **Wei, M**.; Shao, Y.; Wu, G.*; Zhou, C.*, 3D Printing Technologies for Electrochemical Energy Storage. *Nano Energy*, 40, 418-431, **2017**.
104. **Qiao, Z**.; **Zhang, H**.; Karakalos, S.; Hwang, S.; **Xue, J**.; **Chen, M**.; Su, D.; Wu, G*., 3D polymer hydrogel for high-performance atomic iron-rich catalysts for oxygen reduction in acidic media. *Applied Catalysis B: Environmental,* 219, 629-639, **2017**.

105. **Wei, M**.; Zhang, F.; Wang, W.; Alexandridis, P.; Zhou, C.; Wu, G*., 3D Direct Writing Fabrication of Electrodes for Electrochemical Storage Devices. *Journal of Power Sources, 354*, 134–147, **2017.**
106. **Gupta, S**.; Zhao, S.; **Ogoke, O**.; Lin, Y.; Xu, H.; Wu, G.*, Engineering Favorable Morphology and Structure of Fe-N-C Oxygen-Reduction Catalysts Via Tuning Nitrogen/Carbon Precursors. *ChemSusChem*, 10 (4), 774–785, **2017**.
107. **Zhang, H**.; **Osgood, H**.; Xie, X.; Shao, Y*.; Wu, G.*, Engineering Nanostructures of PGM-Free Oxygen-Reduction Catalysts Using Metal-Organic Frameworks. *Nano Energy,* 31, 331-350, **2017**.
108. **Ogoke, O**.; Wu, G.*; **Wang, X.; Casimir, A**.; Ma, L.; Wu, T.; Lu, J*., Effective Strategies for Stabilizing Sulfur for Advanced Lithium-Sulfur Batteries. *Journal of Materials Chemistry A,* 5, 448-469, **2017**.
109. **Paranjape, N**.; **Chandra, P**.; Wu, G.*; Lin, H.*, Highly-Branched Cross-Linked Poly (Ethylene Oxide) with Enhanced Ionic Conductivity. *Polymer,* 111, 1-8, **2017**.
110. Wu, G*., Current Challenge and Perspective of PGM-Free Cathode Catalysts for PEM Fuel Cells. *Frontiers in Energy*, 11, 286–298, **2017**. (*Invited Review*)
111. **Tan, Q**.; Zhu, H.; Guo, S.; Chen, Y.; Jiang, T.; Shu, C.; Chong, S.; **Hultman, B**.; Liu, Y.*; Wu, G.* Quasi-zero-dimensional cobalt-doped CeO_2 dot on Pd catalysts for alcohol electrooxidation with enhanced poisoning tolerance. *Nanoscale*, 9, 12565-12572, **2017.**
112. Shan, C.; Yen, H.-J.; Wu, K.; Lin, Q.; Zhou, M.; Guo, X.; Wu, D.; **Zhang, H**.; Wu, G.*; Wang, H.-L.*, Functionalized Fullerenes for Highly Efficient Lithium Ion Storage: Structure-Property-Performance Correlation with Energy Implications. *Nano Energy* 2017, 40, 327-335, **2017**.
113. Wang T., Xie H., **Chen M., D'Aloia A.**, Cho J.P., Wu G.,*, Li Q.,* Precious metal-free approach to hydrogen electrocatalysis for energy conversion: From mechanism understanding to catalyst design, *Nano Energy*, 42, 69-89, **2017**.
114. Wang, T.; Wang, C.; Jin, Y.; **Sviripa, A**.; Liang, J.; Han, J.; Huang, Y.; Li, Q.; Wu, G., Amorphous Co-Fe-P Nanospheres for Efficient Water Oxidation. *Journal of Materials Chemistry A*, 5, 25378 - 25384, **2017**.
115. Xie, H.; **Wang, J**.; **Ithisuphalap, K**.; Wu, G.; Li, Q., Recent advances in Cu-based nanocomposite photocatalysts for CO_2 conversion to solar fuels. *Journal of Energy Chemistry,* 26, 1039-1049, **2017**.
116. Hua, X.; Tian, D.; Xia, F.; Zhou, C.*; Wu, G*., Ultrasensitive Electrochemiluminescent Immunosensor using MoS_2/g-C_3N_4 Nanosheets. *Journal of The Electrochemical Society* **2017,** *164* (9), B1-B7.
117. Han, L.; Qin, W.; Jian, J.; Liu, J.; Wu, X.*; Gao, P.*; **Hultman, B**.; Wu, G*, Enhanced Hydrogen Storage in Sandwich-structured rGO/$Co_{1-x}S$/rGO Hybrid Papers through Hydrogen Spillover. *Journal of Power Sources*, *358*, 93–100, **2017.**
118. Ma, F.; Li, Q.*; Wang, T.; **Zhang, H**.; Wu, G*., Energy storage materials derived from Prussian blue analogues. *Science Bulletin*, 62 (5), 358–368, 2017.
119. Li Y.; Liu C.*; **Osgood H**.; Wu G.*, CeO_2-Modified α-MoO_3 Nanorods as a Synergistic Support for Pt Nanoparticles with Enhanced COads Tolerance during Methanol Oxidation, *Physical Chemistry Chemical Physics*, 19 (1), 330-339, **2017**.
120. Chen, Y.; Lu, S.; Zhou, J.; Wu, X.; Qin, W*.; **Ogoke, O**.; Wu, G*., 3D Graphene Frameworks Supported Li_2S Coated with Ultra-Thin Al_2O_3 Films: Binder-Free Cathodes for High-Performance Lithium Sulfur Batteries. *Journal of Materials Chemistry A*, 5, 102-112, **2017**. (*Front cover page*)

121. Wan, H.; Bai, Q.; Peng, Z*.; Mao, Y.; Liu, Z.; He, H.; Wang, D.*; Xie, J.; Wu, G., A High Power Li-air Battery Enabled by a Fluorocarbon Additive. *Journal of Materials Chemistry A*, Doi:10.1039/C7TA08860D, **2017**.
122. Kneebone, J. L.; Daifuku, S. L.; Kehl, J. A.; Wu, G.; Chung, H. T.; Hu, M.; Alp, E. E.; More, K. L.; Zelenay, P.; Holby, E. F.*, A Combined Probe-Molecule, Mössbauer, Nuclear Resonance Vibrational Spectroscopy and Density Functional Theory Approach for Evaluation of Potential Iron Active Sites in an Oxygen Reduction Reaction Catalyst. *The Journal of Physical Chemistry C,* **DOI:** 10.1021/acs.jpcc.7b03779, **2017**.
123. Liu, K.; Wu, G.; Wang, G*., Role of Local Carbon Structure Surrounding FeN4 Sites in Boosting Catalytic Activity for Oxygen Reduction. *J. Phys. Chem. C*, *121* (21), 11319–11324, **2017.**
124. Zhang, Z.; Peng, Z.; Zheng, J.; Wang, S.; Liu, Z.; Bi, Y.; Chen, Y.; Wu, G.; Li, H.; Cui, P.*, Long life-span of Li-metal anode enabled by a protective layer based on the pyrolyzed N-doped binder network. *J. Mater. Chem. A*, *5*, 9339-9349, **2017**.
125. Tyminska, N.; Wu, G.; Dupuis, M.*, Water Oxidation on Oxygen-Deficient Barium Titanate: A First Principles Study. *The Journal of Physical Chemistry C*, 121 (15), 8378-8389, **2017**.
126. Liu, R.; Liu, Y.; Chen, J.; Kang, Q.; Wang, L.; Zhou, W.; Huang, Z.; Lin, X.; Li, Y.; Li, P.; Feng, X.; Wu, G.; Ma, Y.; Huang, W*., Flexible Wire-Shaped Lithium-Sulfur Batteries with Fibrous Cathodes Assembled via Capillary Action. *Nano Energy,* 33, 325-333, **2017**.
127. Wan, H.; Mao, Y.; Liu, Z.; Bai, Q.; Peng, Z.; Bao, J.; Wu, G.; Liu, Y.; Wang, D*.; Xie, J., Influence of Enhanced O_2 Provision Achieved with Fluoroether Incorporation on the Discharge Performance of Li-air Battery. *ChemSusChem,* 10 (7), 1385–1389, **2017**.

2016

128. **Sheng, H**.; **Wei, M**.; **D'Aloia, A**.; Wu, G*. Heteroatom Polymer-Derived 3D High-Surface-Area and Mesoporous Graphene Sheet-Like Carbon for Supercapacitors. *ACS Appl. Mater. Interfaces,* 8 (44), 30212–30224, **2016**.
129. **Osgood H**.; **Devaguptapu S. V**.; Xu H.; Cho J.; Wu. G.* Transition Metal (Fe, Co, Ni, and Mn) Oxides for Oxygen Reduction and Evolution Bifunctional Catalysts in Alkaline Media, ***Nano Today***, *11,* 11, 601–625, **2016**. (*invited review*)
130. **Gupta S**.; **Qiao L**., **Devaguptapu S.V**.; Zhao S; Xu H. Swihart M.T*.; Wu G*. Highly Active and Stable Graphene Tubes Decorated with FeCoNi Alloy Nanoparticles via a Template-free Graphitization for Bifunctional Oxygen Reduction and Evolution, ***Advanced Energy Materials***, 6 (22), 1601198, **2016**.
131. **Casimir A**.; **Zhang H.; Ogoke O**.; Lu J*; Wu G*, Silicon-based Anode for Lithium-ion Batteries: Effectiveness of Materials Synthesis and Electrode Preparation, *Nano Energy*, 27, 359–376, **2016**.
132. **Gupta S**.; **Kellogg W**.; Xu H.; Liu X.; Cho J*.; Wu G.*, Bifunctional Perovskite Oxide Catalysts for Oxygen Reduction and Evolution in Alkaline Media. *Chemistry-An Asian Journal,* 11 (1), 10–21, **2016**. (*invited Focus Review article*)
133. Wu, G*.; **Santandreu, A.; Kellogg, W**.; **Gupta, S.; Ogoke, O.; Zhang, H.**; Wang, H.-L.*; Dai, L*., Carbon Nanocomposite Catalysts for Oxygen Reduction and Evolution Reactions: from Nitrogen Doping to Transition-Metal Addition. *Nano Energy*, 29, 83-110, **2016**.
134. **Wang, X**.; **Zhang, H**.; Lin, H.; **Gupta, S**.; Wang, C.; Tao, Z.; Fu, H.; Wang, T.; Zheng, J*.; Wu, G*.; Li, X. Directly converting Fe-doped metal–organic frameworks into highly active and stable Fe-N-C catalysts for oxygen reduction in acid. *Nano Energy* **2016**, 25, 110-119.
135. Yen, H. J.; Tsai, H.; Zhou, M.; Chen, A.; Holby, E. F.; Choudhury, S.; **Zhang, H**.; **Zhu, L**.; Lin, H.; Dai, L.; Wu G*.; Wang H.L.*, Structurally Defined Nanographene Assemblies via

Bottom-up Chemical Synthesis for Highly Efficient Lithium Storage. ***Advanced Materials*** 28 (46), 10250–10256, **2016**.

136. Li, Q.; Wang, T.; **Havas, D**.; **Zhang, H**.; Xu, P.; Han, J.; Cho, J*.; Wu, G*. High-Performance Direct Methanol Fuel Cells with Precious-Metal-Free Cathode. ***Advanced Science*** 3 (11), 1600140, **2016**.
137. Gao, W.; **Havas, D**.; **Gupta, S**.; Pan, Q.; He, N.; **Zhang, H**.; Wang, H.-L*.; Wu, G*. Is reduced graphene oxide favorable for nonprecious metal oxygen-reduction catalysts? *Carbon* 102, 346-356, **2016**.
138. Ge, H.; Hao, T.; **Osgood, H**.; Zhang, B.; Chen, L.; Cui, L.; Song, X.-M.*; **Ogoke, O.**; Wu, G*. Advanced mesoporous spinel $Li_4Ti_5O_{12}$/rGO composites with increased surface lithium storage capability for high-power lithium-ion batteries. *ACS Appl. Mater. Interfaces* 8, 9162–9169, **2016**.
139. Liu, R.; Liu, Y.; Kang, Q.; **Casimir, A.; Zhang, H**.; Li, N.*; Huang, Z.; Li, Y.; Lin, X.; Feng, X., Wu G*. Synergistic Effect of Graphene and Polypyrrole to E nhance the SnO_2 Anode Performance in Lithium-ion Batteries. *RSC Advances* 6, 9402-9410, **2016.**
140. Wang, Y.; Li, N*.; Wang, X.; **Havas, D**.; Li, D.; Wu, G*., High-definition Conductive Silver Patterns on Polyimide Film via an Ion Exchange Plating Method. *RSC Advances,* 6, 7582-7590, **2016**.
141. Liu, X.; Park, M.; Kim, M. G.; **Gupta, S**.; **Wang, X**.; Wu, G*; Cho, J*. High-performance non-spinel cobalt–manganese mixed oxide-based bifunctional electrocatalysts for rechargeable zinc–air batteries. *Nano Energy*, 20, 315-325, **2016**.
142. Li, Q.; Zhu, W.; Fu, J.; Wu, G.; Sun, S*. Controlled Assembly of Cu Nanoparticles on Pyridinic-N Rich Graphene for Electrochemical Reduction of CO_2 to Ethylene. *Nano Energy* 24, 1-9, **2016**.
143. Lü, X.; Howard, J. W.; Chen, A.; Zhu, J.; Li, S.; Wu, G.; Dowden, P.; Xu, H.; Zhao, Y*.; Jia, Q*. Antiperovskite Li_3OCl Superionic Conductor Films for Solid-State Li-Ion Batteries. ***Advanced Science*** 2016, DOI: 10.1002/advs.201500359, **2016**.
144. Zhu, X.; Qian, F.; Liu, Y.; **Matera, D**.; Wu, G.; Zhang, S.*; Chen, J. Controllable synthesis of magnetic carbon composites with high porosity and strong acid resistance from hydrochar for efficient removal of organic pollutants: An overlooked influence. *Carbon*, 99, 338–347, **2016**.

2015

145. **Wang, X**.; Li, Q.; **Pan, H**.; Lin, Y.; **Ke, Y**.; **Sheng, H**.; Swihart, M. T*.; Wu, G*. Size-controlled large-diameter and few-walled carbon nanotube catalysts for oxygen reduction. *Nanoscale*, 7, 20290-20298, **2015**.
146. **Wang X; Ke Y**; Pan H; **Ma K**; Xiao QQ; Wu G;* Swihart MT*, Cu-Deficient Plasmonic $Cu_{2-x}S$ Nanoplate Electrocatalysts for Oxygen Reduction, *ACS Catalysis*, 5 (4), 2534-2540, **2015**.
147. Wang, Z.; Li, N*.; Wang, M.; Wang, X.; Li, D.; **Dana, H**.; **Zhang, H**.; Wu, G*., A Block Copolymer as An Effective Additive for Electrodepositing Ultra-low Sn Coatings. *RSC Advances, 5*, 83931-83935, **2015**.
148. Li Q; **Pan H**; Higgins D.; Zhang G; Cao R; Cho J*; Wu G*, Metal-Organic Framework Derived Bamboo-like Nitrogen-Doped Graphene Tubes as an Active Matrix for Hybrid Oxygen-Reduction Electrocatalysts. ***Small***, 11, 1443-1452, **2015**.
149. Chen C-F*; King G, Dickerson R M; Papin P A; **Gupta S**, **Kellogg WR**; Wu G,* Oxygen-Deficient $BaTiO_{3-x}$ Perovskite as an Efficient Bifunctional Oxygen Electrocatalyst, *Nano Energy*, 13, 423–432, **2015**.

150. Ren X.; Song Y.; Liu A.; Yang P.; Zhang J.; An M. *; **Matera D**.; Wu G.*, Computational Chemistry and Electrochemical Studies of Adsorption Behavior of Organic Additives during Gold Deposition in Cyanide-free Electrolytes. *Electrochimica Acta*, *176*, 10-17, **2015**.
151. Ren X.; Song Y.; Liu A.; Zhang J.; Guohui Y.; An M.*; **Osgood H**.; Wu G.*. Role of polyethyleneimine as an additive in cyanide-free electrolytes for gold electrodeposition. *RSC Advances*, *5*, 64806, **2015.**
152. Liu X.; Liu W.; Ko M.; Chae S.; Park S.; **Casimir A**.; Wu G.*; Cho J.*. Metal (Ni, Co)-Metal Oxides/Graphene Nanocomposites as Multifunctional Electrocatalysts. ***Advanced Functional Materials***. 25, 5799-5808, **2015**.
153. Ge, H.; Chen, L.; Yuan, W.; Zhang, Y.; **Osgood, H**.; **Matera, D**.; Song, X.-M.*; Wu, G*. Unique mesoporous spinel $Li_4Ti_5O_{12}$ nanosheets as anode materials for lithium-ion batteries. *Journal of Power Sources,* 297, 436-441, **2015**.
154. Li Z.; He Y.; Ke X.; Gan L.; Zhao J.; Cui G.*; Wu G.*. Three-dimensional Nanoporous Gold-Cobalt Oxide Electrode for High-Performance Electroreduction of Hydrogen Peroxide in Alkaline Medium. *Journal of Power Sources, 294*, 136-140, **2015**.
155. Liu X.; Park M.; Kim M. G.; **Gupta S**.; Wu G.*; Cho J.*. Integrating NiCo Alloys with Their Oxides as Efficient Bifunctional Cathode Catalysts for Rechargeable Zinc-Air Batteries. ***Angew. Chem.-Int. Edit****., 54* (33), 9654-9658, **2015.**
156. Li Y; Liu C*; Liu Y; Feng B; Li L; **Pan H**; **Kellogg W R**; Higgins D; Wu G*. Sn-doped TiO_2 modified carbon to support Pt cathode catalysts for direct methanol fuel cells, *J Power Sources*, 286, 354-361, **2015**.
157. Ke X; Li Z; Gan L; Zhao J; Cui G*; **Kellogg W; Matera D**; Higgins D; Wu G*. Three-dimensional nanoporous Au films as a high-efficiency enzyme-free electrochemical sensor, *Electrochimica Acta* 170, 337-342, **2015**.
158. Jia, Q.; Ramaswamy, N.; Hafiz, H.; Tylus, U.; Strickland, K.; Wu, G.; Barbiellini, B.; Bansil, A.; Holby, E. F.; Zelenay, P.; Mukerjee S.* Experimental Observation of Redox-Induced Fe-N Switching Behavior as a Determinant Role for Oxygen Reduction Activity. ***ACS Nano***, 9 (12), 12496–12505, **2015**.
159. Li Q; Wen X; Wu G*;* Chung H; Zelenay P.*, High-Activity PtRuPd/C Catalyst for Direct Dimethyl Ether Fuel Cell, ***Angew. Chem. Int. Ed***, 54, 7524-7528, **2015**.
160. Gan L; Yang M; Ke X; Cui G*; Chen X*; **Gupta S**; **Kellogg WR**; Wu G. Synthesis of Ag Nanocubes with mesopores at Room Temperature via Selectively Oxidative Etching for Surface-Enhanced Raman Spectroscopy, *Nano Research*, 8, 2354-2362, **2015**.
161. Li Q; Wu L; Wu G; Su D; Lv HF; Zhang S; Zhu W; **Casimir A**; Zhu H; Mendoza-Garcia A; Sun S*, A New Approach to Fully Ordered fct-FePt Nanoparticles for Much Enhanced Electrocatalysis in Acid, *Nano Lett*., 15 2468-2473, **2015**.
162. **Iozzo, D. A. B.; Tong, M**.; Wu, G.; Furlani, E. P.*, Numerical Analysis of Electric Double Layer Capacitors with Mesoporous Electrodes: Effects of Electrode and Electrolyte Properties. *J. Phys. Chem. C*, 119, 25235–25242, **2015**.

2014

163. Wang C; Higgins D; Wang F; Li D.; Liu R; Xia G; Li N*; Li Q; Xu H; Wu G,* Controlled synthesis of micro/nanostructured CuO anodes for lithium-Ion batteries, *Nano Energy,* 9, 334-344, **2014**.
164. Yu S; Li N*; Higgins D; Li D; Li Q; Xu H; Spendelow JS; Wu G*, Self-Assembled Reduced Graphene Oxide/Polyacrylamide Conductive Composite Films, *ACS Appl. Mater. Interfaces*, 6 (22), 19783-19790, **2014**.

165. Xu Y; Ke X; Yu C; Liu S; Zhao J; Cui GF*; Higgins D; Chen Z; Li Q; Wu G, A strategy for fabricating nanoporous gold films through chemical dealloying of electrochemically deposited Au-Sn alloys, *Nanotechnology*, 25, 445602, **2014**.

Peer-reviewed papers published before joining UB (2003-2014)

166. Chen L; Wu G; Holby E, Zelenay P; Tao W; Kang Q, Lattice Boltzmann Pore-Scale Investigation of Coupled Physical-Electrochemical Processes in C/Pt and Non-Precious Metal Cathode Catalyst Layers in Proton Exchange Membrane Fuel Cells, *Electrochim. Acta* 158, 175-186, 2015.
167. Yu S; Li N*; Higgins D; Li D; Li Q; Xu H; Spendelow JS; Wu G*, Self-Assembled Reduced Graphene Oxide/Polyacrylamide Conductive Composite Films, *ACS Appl. Mater. Interfaces*, 6 (22), 19783-19790, 2014.
168. Xu Y; Ke X; Yu C; Liu S; Zhao J; Cui GF*; Higgins D; Chen Z; Li Q; Wu G, A strategy for fabricating nanoporous gold films through chemical dealloying of electrochemically deposited Au-Sn alloys, *Nanotechnology*, 25, 445602, 2014.
169. Liu A; Ren X; Zhang J; Wang C; Yang P; An M*; Higgins D; Li Q; Wu G*, Theoretical and experimental studies of the corrosion inhibition effect of nitrotetrazolium blue chloride on copper in 0.1 M H_2SO_4, *RSC Adv*, 4, 40606-40616, 2014.
170. Ke X; Xu Y; Yu C; Zhao J; Cui G*; Higgins D; Chen Z; Li Q; Xu H; Wu G, Pd-decorated three-dimensional nanoporous Au/Ni foam composite electrodes for H_2O_2 reduction, *J. Mater. Chem. A*, 2, 16474-16479, 2014.
171. Ke X; Xu Y; Yu C; Zhao J; Cui G*; Higgins D; Li Q; Wu G, Nanoporous gold on three-dimensional nickel foam: an efficient hybrid electrode for hydrogen peroxide electroreduction in acid media, *J. Power Sources,* 269, 461-465, 2014.
172. Li Q; Xu P*; Gao W; Ma S; Zhang G; Cao R; Cho J; Wang HL; Wu G*, Graphene/graphene tube nanocomposites templated from cage-containing metal-organic frameworks for oxygen reduction in Li-O_2 batteries, ***Advanced Materials***., 26, 1378-1386, 2014.
173. Li Q; Cao R; Cho J*; Wu G*, Nanocarbon electrocatalysts for oxygen-reduction in alkaline media for advanced energy conversion and storage, ***Advanced Energy Materials***, 4 (6), 1301415, 2014. (*Invited Progress Report*).
174. Liu R; Li D; Tian D; Xia GF; Li N*; Spendelow J; Li Q; Wu G*, Core-shell structured hollow SnO_2-polypyrrole nanocomposite anodes with enhanced cyclic performance for lithium-ion batteries, *Nano Energy,* 6, 73-81, 2014.
175. Li Q; Cao R; Cho J*; Wu G*, Nanostructured carbon-based cathode catalysts for nonaqueous lithium-oxygen batteries, *Phys. Chem. Chem. Phys.*, 16 (27), 13568-13582, 2014 (*Invited Perspective Article for themed issue of "Electrocatalysis – fundamental insights for sustainable energy")*.
176. Gao W; Wu G; Janicke MT; Cullen DA; Mukundan R; Galande C; Ajayan PM; More KL; Dattelbaum A.M.*; Zelenay P.*, Ozonated graphene oxide film as a proton exchange membrane, ***Angew. Chem. Int. Ed.***, 53, 3588-3593, 2014. (*Very Important Paper- Top 10%*)
177. Lü X*; Wu G; Howard JW; Chen A; Zhao Y; Daemen LL; Jia QX*, Li-rich anti-perovskite Li_3OCl films with enhanced ionic conductivity, *Chem. Commun*., 50, 11520-11522, 2014.
178. Li Q; Wu G;* Cullen D A; More K L; Mack N H; Chung H; Zelenay P*, Phosphate-Tolerant Oxygen Reduction Catalysts, *ACS Catal.*, 4, 3193-3200, 2014.

179. Holby EF*; Wu G; Zelenay P; Taylor CD; Structure of Fe-N_x-C defects in oxygen reduction reaction catalysts from first principles modeling, *J. Phys. Chem. C,* 118 (26), 14388-1439, 2014.
180. He Q, Wu G, Liu Ke, Khene S, Mugadza T, Deunf E, Nyokong T, Chen S*, Effects of redox mediators on the catalytic activity of iron porphyrins towards oxygen reduction in acidic media, *ChemElectroChem,* 1, 1508–1515, 2014.
181. Cui G*; Liu S; Wang K; Li Q; Wu G, Discovering P-doped mechanism in non-magnetic Ni-P films for HDD substrate: A combined experimental and theoretical study, *RSC Adv.*, 4, 14663-14672, 2014.
182. Wu C; Cheng Q; Wu K; Wu G; Li Q*, Graphene prepared by one-pot solvent exfoliation as a highly sensitive platform for electrochemical sensing. *Anal. Chim. Acta*., 825, 26-33, 2014.
183. Li Q; Wu G; Johnston CM; Zelenay P*, Direct dimethyl ether fuel cell with much improved performance, *Electrocatalysis*, 5 (3), 310-317, 2014.
184. Chung H; Wu G; Li Q; Zelenay P,* An Role of two carbon phases in oxygen reduction reaction on the Co-PPy-C catalyst, *Int. J. Hydrogen Energy*, 39, 15887-15893, 2014.
185. Zheng X; Tian D; Duan S; Li Q; Zhou C*; Wu G*, Polypyrrole composite film for the highly sensitive and selective electrochemical determination sensors, *Electrochim. Acta,* 130, 187-193, 2014.
186. Wang C; Li Q; Wang FF; Xia G; Liu R; Li D; Li N*; Spendelow J; Wu G*, Morphology-dependent performance of CuO anodes via facile and controllable synthesis for lithium-ion batteries, *ACS Appl. Mater. Interfaces*, 6, 1243-125, 2014.
187. Liu R; Li D; Tian D; Xia GF; Li N*; Mack NH; Li Q; Wu G*, Promotional role of B_2O_3 in enhancing hollow SnO_2 anodes for Li-ion batteries, *J. Power Sources*, 251, 279-286, 2014.
188. Xiao N; Li DY; Cui GF; Li N*; Li Q; Wu G*, Adsorption behavior of triblock copolymer suppressors on the cathode during the copper electrodeposition, *Electrochim. Acta*, 116, 284-291, 2014.
189. Wu G*; More KL; Xu P; Wang H-L; Ferrandon M; Kropf AJ; Myers DJ; Ma S; Zelenay P*, Carbon-nanotube-supported graphene-rich non-precious metal oxygen reduction catalyst with enhanced performance durability, *Chem. Commun*., 49, 3291-3293, 2013. (*Front Inside Cover*)
190. Li Q; Xu P*; Zhang B; Wang J; Tsai H; Wang HL; Wu G*, One-step synthesis of Mn_3O_4/reduced graphene oxide nanocomposites for oxygen reduction in nonaqueous Li-O_2 batteries, *Chem. Commun., 49*, 10838-10840, 2013.
191. Xia GF; Li N*; Wang C; Liu R; Li Q; Lu X; Spendelow J; Zhang JL; Wu G*, Fe_2O_3/SnO_2/graphene ternary nanocomposite as a high-performance anode for lithium ion batteries, *ACS Appl. Mater. Interfaces*, *5*, 8607-8614, 2013.
192. Wu G; Zelenay P*, Nanostructured nonprecious metal catalysts for oxygen reduction reaction, ***Acc. Chem. Res***., 46, 1878-1889, 2013. (*Invited Review*)
193. Cui G*; Liu S; Zhao J; Holby EH; Li Q; Wu G, AuSn20 Eutectic electrodeposition through alternative complexing of pyrophosphoric acid: insights from electrochemical and DFT methods, *J. Phys. Chem. C, 117*, 21228-21233, 2013.
194. He Q*; Li Q; Ren X; López-Suárez FE; Lozano-Castelló D; Bueno-Lópezd A; Wu G*, High-loading cobalt oxide coupled with graphene as oxygen-reduction catalysts in anion-exchange membrane alkaline fuel cells, *J. Phys. Chem. C,* 117, 8697-8707, 2013.
195. Li Q; Xu P; Zhang B; Tsai H; Zheng S; Wu G*; Wang HL*, Structure-dependent electrocatalytic properties of Cu_2O nanocrystals for oxygen reduction reaction. *J. Phys. Chem. C,* 117, 13872-13878, 2013.

196. Xiao N; Li D; Cui G; Li N*; Tian D; Li Q; Wu G*, An effective triblock copolymer as a suppressor for microvia filling *via* copper electrodeposition, *Electrochim. Acta*, 109, 226-232, 2013.
197. Li Q; Xu P*; Zhang B; Wu G; Zhao H; Fu E; Wang H-L*, Self-supported Pt nanoclusters via galvanic replacement from Cu_2O nanocubes as efficient electrocatalysts, *Nanoscale,* 5, 7397-7402, 2013.
198. Tian D.; Li DY; Wang FF; Xiao N; Liu RQ; Li N*; Li Q; Gao W; Wu G, A Pd-free activation method for electroless nickel deposition on copper. *Surf. Coat. Technol.*, 228, 27-33. 2013.
199. Zhai T; Lu XH; Cui G*; Wu G; Qu JQ; Tang Y, Efficient Electroless nickel planting from highly active Ni-B nanoparticles for electric circuit pattern on Al_2O_3 ceramic, *J. Mater. Chem. C*, 1, 5149-5152, 2013.
200. Ferrandon M*; Wang X; Kropf AJ; Myers DJ; Wu G; Johnston CM; Zelenay P*, Stability of iron species in heat-treated polyaniline-iron-carbon polymer electrolyte fuel cell cathode catalysts, *Electrochim. Acta*, 110, 282-291, 2013.
201. Li D*; Li N; Xia G; Zheng Z; Wang J; Xiao N; Zhai W; Wu G, An in-situ study of copper electropolishing in phosphoric acid solution, *Int. J. Electrochem. Sci.,* 8, 1041-1046, 2013.
202. Liu R; Li N*; Xia G; Li D; Wang C; Xiao N; Tian D; Wu G, Assembled hollow and core-shell SnO_2 microspheres as anode materials for Li-ion batteries, *Mater. Lett*., 93, 243-246, 2013.
203. Chen Z; Dai C*; Wu G; Nelson M; Jin H; Cheng Y, Effects of carbon source on performance of Li_3V_2 $(PO_4)_3$/C cathode materials synthesized via carbon thermal reduction for Li-ion batteries, *Int. J. Electrochem. Sci*., 8, 8153-8166, 2013.
204. Xiao N; Li N*; Cui G; Tian D; Yu S; Li Q; Wu G, Triblock copolymers as suppressors for microvia filling via copper electroplating, *J. Electrochem. Soc*., 160, D188-D195, 2013.
205. Tian D; Li N*; Xiao N; Wang FF; Yu SY; Li Q; Gao W; Wu G, Replacement deposition of Ni-S films on Cu and its catalytic activity for electroless nickel plating, *J. Electrochem. Soc.*, 160, D95-D101, 2013.
206. Zheng Z; Li N*; Wang CQ; Li DY; Meng FY; Zhu YM; Li Q; Wu G, Electrochemical deposition synthesis of Ni-S/CeO_2 composite electrodes for hydrogen evolution reaction, *J. Power Sources*, 230, 10-14, 2013.
207. Wu G*; Mack NH; Gao W; Ma S; Zhong R; Han J; Zelenay P, Nitrogen-doped graphene-rich catalysts derived from heteroatom polymers for oxygen-reduction in nonaqueous lithium-O_2 battery cathodes, ***ACS Nano***, 6, 9764-9776, 2012.
208. Li D*; Li N; Xia G; Zheng Z; Wang J; Xiao N; Zhai W; Wu G, Effect of sodium dodecyl sulfate on copper anodic dissolution in phosphoric acid solution, *Int. J. Electrochem. Sci*., 7, 9271-9277, 2012.
209. Xiao N; Li N*; Li D; Tian D; Liu R; Wu G, The Synergistic effect between a triblock copolymer and chloride ions in Cu electrodeposition into microvias, *ECS Solid State Lett*., 1, 67-69, 2012.
210. Zheng Z; Li N; Wang C-Q; Li D-Y; Zhu Y-M; Wu G, Ni-CeO_2 composite cathode material for hydrogen evolution reaction in alkaline electrolyte, *Int. J. Hydrogen Energy*, 37, 13921-13932, 2012.
211. Han J; Zhu J; Li Y; Yu X; Wang S; Wu G; Xie H; Vogel S; Zhao YS*; Goodenough JB*, Lithium-ion conduction pathways in garnet-type $Li_7La_3Zr_2O_{12}$, *Chem. Commun*., 48, 9840-9842, 2012.
212. Ferrandon M*; Kropf AJ; Myers DJ; Artyushkova K; Koslowski U; Bogdanoff P; Wu G; Johnston CM; Zelenay P, Multi-technique characterization of a polyaniline-iron-carbon oxygen reduction catalyst, *J Phys. Chem. C*, 116, 16001-16013, 2012.

213. Wu G; More KL; Jonhston CM; Zelenay P*, High-performance electrocatalysts for oxygen reduction derived from polyaniline, iron, and cobalt, ***Science***, 332, 443-447, 2011.
214. Wu G*; Nelson M; Ma S; Meng H; Cui G; Shen PK, Synthesis of nitrogen-doped onion-like carbon and its use in carbon-based CoFe binary non-precious-metal catalysts for oxygen-reduction, *Carbon*, 49, 3972-3982, 2011.
215. Wu G; Johnston CM*; Mack N; Nelson M; Artyushkova K; More KL; Zelenay P*, Synthesis and performance of polyaniline-Me-C non-precious metal cathode catalysts for oxygen reduction in fuel cells, *J. Mater. Chem*., 21, 11392-11405, 2011.
216. Cui G*; Zhao J; Liu S; Wu G, Structural and corrosion properties of NiP_x metallic glasses: Insights from EIS and DFT, *J. Phys. Chem. C.*, 115, 21169-21176, 2011.
217. Cui G; Meng H; Shen PK*; Zhao J; Wu G, Tungsten carbide as supports for Pt electrocatalysts with improved CO tolerance in methanol oxidation, *J. Power Sources*, 196, 6125-6130, 2011.
218. Meng H; Wang C; Shen PK*; Wu G, Palladium thorn clusters as catalyst for electrooxidation of formic acid, ***Energy Environ. Sci***., 4, 1522-1526, 2011.
219. Jaouen F*; Proietti E; Lefèvre M; Chenitz R; Dodelet JP; Wu G; Chung H; Johnston CM; Zelenay P*, Recent advances in non-precious metal catalysts for the oxygen-reduction reaction in polymer electrolyte fuel cells, ***Energy Environ. Sci***., 4, 114-130, 2011.
220. Wu G*; Nelson MA; Mack NH; Ma S; Sekhar P; Garzon, FH; Zelenay P*, Titanium dioxide-supported non-precious metal oxygen reduction electrocatalyst, *Chem. Commun*., 46, 7489-7491, 2010.
221. Chen Z; Dai C*; Wu G; Hu X, High rate $Li_3V_2(PO_4)_3$/C composite cathode material for lithium ion batteries, *Electrochim. Acta*, 55, 8595-8599, 2010.
222. Gu Y; Wu G; Hu XF; Chen DA; Hansen T; Loye H-C; Ploehn HJ*, PAMAM-stabilized Pt-Ru nanoparticles for methanol electro-oxidation, *J. Power Source*, 195, 425-434, 2010.
223. Wu G*; Dai C; Wang D; Li D; Li N, Nitrogen-doped magnetic onion-like carbon as supports of Pt particles in a hybrid cathode catalyst for fuel cells, *J. Mater. Chem.,* 20, 3059-3068, 2010.
224. Wu G*; Cui G; Li D; Shen PK; Li N, Carbon-supported $Co_{1.67}Te_2$ nanoparticles as electrocatalysts for oxygen reduction reaction in alkaline electrolyte, *J. Mater. Chem*., 19, 6581-6589, 2009.
225. Subramanian NP; Li X; Nallathambi V; Kumaraguru SP; Colon-Mercado H; Wu G; Lee JW; Popov BN, Nitrogen-modified carbon-based catalysts for oxygen reduction reaction in polymer electrolyte fuel cells, *J. Power Sources*, 188, 38-44, 2009.
226. Wu G*; Li D; Dai C; Wang D; Li N, Well-dispersed high loading Pt nanoparticles supported by shell-core structured carbon for methanol electrooxidation, *Langmuir*, 24, 3566-3575, 2008.
227. Wu G*; Swaidan R; Li D; Li N, Enhanced methanol electro-oxidation activity of PtRu catalyst supported by heteroatom-doped carbon, *Electrochim. Acta*, 53, 7622-7629, 2008.
228. Nallathambi V; Lee J; Kumaragur SP; Wu G; Popov BN*, Development of high performance carbon composite catalyst for oxygen reduction reaction in PEM fuel cells, *J. Power Sources*, 183, 34-42, 2008.
229. Cui G*; Liu H; Wu G; Zhao J; Song S; Shen PK, Electrochemical impedance spectroscopy and first-principle investigations on the oxidation mechanism of hypophosphite anion in the electroless deposition system of nickel, *J. Phys. Chem. C*, 112, 4601-4607, 2008.
230. Wu G*; Swaidan R; Cui G, Electrooxidations of ethanol, acetaldehyde and acetic acid using PtRuSn/C catalysts prepared by modified alcohol-reduction process, *J. Power Sources*, 172, 180-188, 2007.

231. Wu G*; Xu BQ*, Carbon nanotube supported Pt electrodes for methanol oxidation: A comparison between MWNT and SWNT, *J. Power Source*, 174, 148-158, 2007.
232. Li X; Colón-Mercado HR; Wu G; Lee JW; Popov BN*, Development of method for synthesis of Pt-Co cathode catalysts for PEM fuel cells, *Electrochem. Solid State Lett*., 10, B201-B205, 2007.
233. Wu G*; Li L; Li JH; Xu BQ*, Methanol electrooxidation on Pt particles dispersed into PANI/SWNT composite films, *J. Power Sources*, 155, 118-127, 2006.
234. Li L; Wu G; Xu BQ*, Electro-catalytic oxidation of CO on Pt catalyst supported on carbon nanotubes pretreated with oxidative acids, *Carbon*, 44, 2973-2983, 2006.
235. Li L; Wu G; Ye Q; Deng W; Xu BQ*, Electrochemical modification of Pt/C catalyst by silicomolybdic acid, *Acta Phys. Chim. Sin*., 22, 419-423, 2006.
236. Wu G*; Li L; Li JH; Xu BQ*, Polyaniline-carbon composite films as supports of Pt and PtRu particles for methanol electrooxidation, *Carbon,* 43, 2579-2587, 2005.
237. Wu G; Chen YS; Xu BQ*, Remarkable support effect of SWNTs in Pt catalyst for methanol electro oxidation, *Electrochem. Commun*., 7, 1237-1243, 2005. (*Top 10 cited paper within 5 years in the journal*)
238. Zhao D; Wu G; Xu BQ*, Synthesis and characterization of Au@ Pt nanoparticles, *Chin. Sci. Bull.*, 50, 1846-1848, 2005.
239. Wu G; Li L; Xu BQ*, Electrochemical impedance spectroscopy of methanol electrooxidation on PtRu/C catalysts, *Chem. Res. Chin. Uni*., 4, 032, 2005.
240. Wu G*; Li N; Zhou DR, Electrochemical anomalous codeposition of Co-Ni alloys from sulfamate electrolytes and its mechanism, *J. Chem. Engr. Chin. Uni.*, 1, 8-12, 2005.
241. Wu G*; Li L; Xu BQ, Effect of electrochemical polarization of PtRu/C catalysts on methanol electrooxidation, *Electrochim. Acta*, 50, 1-10, 2004.
242. Wu G*; Li N; Zhou DR; Mitsuo K; Xu BQ, Anodically electrodeposited Co plus Ni mixed oxide electrode: preparation and electrocatalytic activity for oxygen evolution in alkaline media, *J. Solid State Chem.,* 177, 3682-3692, 2004.
243. Wu G*; Li N; Dai CS; Zhou DR, Electrochemical preparation and characteristics of Ni-Co-$LaNi_5$ composite coatings as electrode materials for hydrogen evolution, *Mater. Chem. Phys.*, 83, 307-314, 2004.
244. Wu G*; Li N; Zhou DR; Mitsuo K, Electrodeposited Co-Ni-Al_2O_3 composite coatings, *Surf. Coat. Tech.*, 176, 157-164, 2004.
245. Wu G*; Li N; Wang DL; Zhou DR; Xu BQ; Mitsuo K, Effect of alpha-Al_2O_3 particles on the electrochemical codeposition of Co-Ni alloys from sulfamate electrolytes, *Mater. Chem. Phys.*, 87, 411-419, 2004.
246. Wu G*; Li N; Zhou DR, Microstructure and properties of Co-Ni-Al_2O_3 composite coatings at the high temperature, *Acta Mater. Comp. Sin.,* 21, 8-13, 2004.
247. Wu G*; Li N; Dai C; Zhou DR, Anodically electrodeposited cobalt-nickel mixed oxide electrodes for oxygen evolution, *Chin. J. Catal.*, 25, 319-325, 2004.
248. Wu G*; Li N; Zhou DR; Xu BQ, Influence of alpha-Al_2O_3 nanoparticles on the anomalous electrodeposition of Co-Ni alloys, *Acta Phys. Chim. Sin*., 20, 1226-1232, 2004.
249. Li DY; Li N*; Du MH; Wu G; Liu X, Codeposition of Al_2O_3 powders with nickel in a sulphamate bath, *Mater. Sci. Technol.,* 12, 199-201, 2004.
250. Wu G*; Li N; Wang DL; Zhou DR, A kinetic model for the electrolytic codeposition of α-Al_2O_3 particles with Co-Ni Alloy. *Acta Phys. Chim. Sin*., 19, 996-1000, 2003.
251. Wu G*; Li N; Zhou DR. Electrocatalytic behavior of the codeposited Ni-Co-$LaNi_5$ coatings for hydrogen evolution in alkaline medium, *Chin. J. Inorg. Chem.,* 19, 739-744, 2003.
252. Wu G*; Li N; Zhou D; Mitsuo K. Microstructure of Co-Ni-Al_2O_3 composite coatings by electroforming, *J. Mater. Sci. Technol.,* 19, 133-134, 2003.

253. Cui GF*; Li N; Li DY; Huang JG; Wu G; Jiang LM, Applications and Prospects of Electroless Ni and Ni/Au Plating in Microelectronic Field, *Electroplating Pollution Control* 23 (4), 7-9, 2003.
254. Wu G; LI N*; Du M; Zhou D, Microstructure and hardness of electrodeposited Co-Ni alloy coatings, *Mater. Sci. Technol*., 10, 419-423, 2002.

Non-refereed Conference Proceeding and Transactions Full Papers:

1. Higgins D.; Wu G.; Chung H. T.; Martinez U.; Ma S.; Chen Z.; Zelenay P. Manganese-Based Non-Precious Metal Catalyst for Oxygen Reduction in Acidic Media. *ECS Trans.*, 61, 35-42, 2014.
2. Babu S. K.; Chung H. T.; Wu G.; Zelenay P.; Litster S. Modeling Hierarchical Non-Precious Metal Catalyst Cathodes for PEFCs Using Multi-Scale X-ray CT Imaging. *ECS Trans.*, 64, 281-292, 2014.
3. Hussey DS; Spernjak D; Wu G; Jacobson DL; Liu D; Khaykovich B; Gubarev MV; Mukundan R; Zelenay P; Borup RL, Neutron imaging of water transport in polymer-electrolyte membranes and membrane-electrode assemblies, *ECS Trans*. 58, 293-299, 2013.
4. Holby EF; Wu G; Zelenay P; Taylor CD, Modeling non-precious metal catalyst structures and their relationship to ORR, *ECS Trans*. 58, 1869-1875, 2013.
5. Li Q; Wu G; Bi Zheng; Johnston CM; Zelenay P, A ternary catalyst for dimethyl ether electrooxidation, *ECS Trans.,* 50, 1933-1941, 2013.
6. Holby EF; Wu G; Zelenay P; Taylor CD, Metropolis monte carlo search for non-precious metal catalyst active sites candidates, *ECS Trans.,* 50, 1839-1845, 2013.
7. Wu G; Chung HT; Nelson M; Artyushovka A; Johnston CM; Zelenay P, Graphene-enriched Co_9S_8-N-C non-precious metal catalyst for oxygen reduction in alkaline media*, ECS Trans.,* 41, 1709-1717, 2011*.*
8. Li Q; Wu G; Johnston CM; Zelenay P, Anode catalysts for the direct dimethyl ether fuel cell, *ECS Trans*., 41, 1969-1977, 2011.
9. Wu G; Artyushkova K; Ferrandon M; Kropf J; Myers D; Zelenay P, Performance durability of polyaniline-derived non-precious cathode catalysts, *ECS Trans.,* 25, 1299-1311, 2009.
10. Kropf AJ ; Myers D ; Smith M; Chlistunoff, J ; Wu G ; Zelenay P, In situ XAFS analysis of cobalt-containing fuel cell cathode electrocatalysts, *Abs. Papers Am. Chem. Soc.,* 237, 52, 2009.
11. Wu G; Chen Z; Artyushkova K; Garzon FH; Zelenay P, Polyaniline-derived non-precious catalyst for the polymer electrolyte fuel cell cathode, *ECS Trans*., 16, 159-170, 2008.
12. Nallathambi V; Wu G; Subramanian N; Kumaraguru S; Lee JW; Popov B, Highly active carbon composite electrocatalysts for PEM fuel cells, *ECS Trans*., 11, 241-247, 2007.
13. Li X; Colon-Mercado H; Wu G; Lee JW; Popov B, Development of stable Pt-Co cathode catalysts for PEM fuel cells, *ECS Trans*., 11, 1259-1266, 2007.

Book Charters

After joining UB

- Wang T., Li Q.,* Wu G.*, "Heteroatom-Doped, Carbon-Supported Metal Catalysts for Electrochemical Energy Conversions" for "*Carbon-Based Metal-Free Catalysts: Design and Applications*", Editors: Liming Dai, *John Wiley & Sons, Inc*., 2018.
- Wu G*., Xu P., "Graphene Composite Catalysts for Electrochemical Energy Conversion" for "Multifunctional Nanocomposites for Energy and Environmental Applications", Editors: Zhanhu Guo, Yuan Chen, Na Luna Lu, *John Wiley & Sons, Inc*., 2018.
- Chung H., Wu G., Higgins D., Zamani P., Chen Z., and Zelenay P*. "Heat-Treated Non-precious Metal Catalysts for Oxygen Reduction "for Electrochemistry of N4 Macrocyclic Metal Complexes, Volume 1: Energy, Editors: J. H. Zagal, F. Bedioui, Springer, 2016.
- Li Q; Wu G,* "Nanocarbon-based catalysts for oxygen reduction reaction in various electrolytes" for *Nanocarbons for Advanced Energy Conversion*, Editor: Xinliang Feng, *John Wiley & Sons, Inc*., 2015.
- Wu G* and Wilkinson D.P., "Future catalyst approaches for electrochemical energy storage and conversion" for *Advanced Materials and Technologies for Electrochemical Energy*, Editor: Jiujun Zhang, *CRC press*, 2015.
- Wu G* and Gao W, "GO/rGOs as advanced materials for energy storage and conversion" for *Graphene Oxide: Reduction Recipes, Spectroscopy, and Applications*, Editor: Wei Gao, *Springer*, 2015.

Before joining UB

- Elbaz L; Wu G; Zelenay P, "Heat-treated non-precious-metal-based catalysts for oxygen reduction" for *Electrocatalysis in Fuel Cells: Non and Low Platinum Approach*; Editor: Minhua Shao, *Springer*, 2013.
- Wu G*, Chen Z; Zhang JJ, "Nanostructured transition metal-N-C catalysts for oxygen reduction in PEM fuel cells" for *Nanostructured and Advanced Materials in Fuel Cells*, Editor: San-Ping Jiang and Peikang Shen, *CRC Press*, 2013.
- Li Q; Wu G,* "Carbon composite cathodes for alkaline PEM fuel cells" for *Non-Noble Metal Catalysts for Fuel Cells*, Editors: Jean-Pol Dodelet and Jiujun Zhang, *John Wiley & Sons, Inc*., 2013.

Patents & Patent Applications

- "Atomically dispersed PGM-free Catalysts via Environmentally Benign Aqueous Synthesis", US Provisional 63/073,371, filed 09/02/2020.
- "3D Porous Graphitic Nanocarbon for Enhancing Performance and Durability of Pt Catalysts": US Provisional 63/051,703 filed 7/14/2020.
- "High-Performance Platinum Group Metal-free Fuel Cell catalysts": US Provisional 63/068,937 filed 8/21/2020.
- "Metal Alloy/Oxide Composite Catalyst for Ammonia Decomposition" U.S. Provisional Application 16920056, filed 07/02/2020.
- "Catalytic Oxidation of Dimethyl Ether", US Patent App. 13/840,831.
- "Nitrogen-doped carbon-supported cobalt-iron oxygen reduction catalyst", U.S. Application Serial No. 13/094,594
- "Preparation of supported electrocatalysts comprising multiwalled carbon nanotubes", U.S.

Application Serial No. 61/333,667

- "Non-precious fuel cell catalysts comprising polyaniline", U.S. Application Serial No. 13/267,579
- "Carbon-based composite electrocatalysts for low-temperature fuel cells", U.S. Patent 7629285

Invited Talks and Presentations

More than 100 presentations (> 50 invited talks) at universities and national labs along with conferences (*e.g.*, ECS, ACS, AIChE, MRS).

Invited seminar talks at universities and DOE national labs

1. Wu G., Advanced Electrocatalysis for Energy and Environmental Sustainability, ***University of Rochester*** , Department of Chemical and Biological Engineering, invited department seminar, April, 2021. (Virtual seminar)
2. Wu G., Advanced Electrocatalysis for Energy and Environmental Sustainability, ***University of Illinois Urbana-Champaign***, Department of Chemical and Biological Engineering, invited department seminar, January 21, 2021. (*Virtual seminar*)
3. Wu G., Precious Metal Catalysts for Electrochemical Energy Applications, ***University of Cincinnati****, Department of Chemical Engineering*, invited department seminar, April 19, 2020. (Cancelled due to Covid-19)
4. Wu G., Single Metal Site Catalysts for Electrochemical Energy Applications, ***University of California, Riverside****, Department of Chemical and Environmental Engineering*, invited department seminar, March 03, 2020. (Cancelled due to Covid-19).
5. Wu G., Atomically Dispersed Metal Site Catalysts for Oxygen Reduction, ***University of Houston****, Department of Physics*, invited department seminar, November 19, 2019.
6. Wu G., Advanced Electrocatalysis for Clean Energy Conversion, ***Stevens Institute of Technology****, Department of Mechanical Engineering*, invited seminar, November 7, 2019.
7. Wu G., Achievements, challenges and perspectives on cathode catalysts in proton exchange membrane fuel cells, ***University of Illinois at Chicago****, Department of Chemical Engineering*, invited department seminar, October 31, 2019.
8. Wu G., Advanced cathode catalysts in proton-exchange membrane fuel cells, ***Clemson University****, Department of Materials Science and Engineering*, invited department seminar, September 19, 2019.
9. Wu G., Atomically Dispersed Metal Site Catalysts for Proton Exchange Membrane Fuel Cells, *Pittsburgh-Cleveland Catalysis Society (PCCS) meeting at the* ***University of Pittsburgh***, August 22, 2019.
10. Wu G., Single metal site electrocatalysis for sustainable energy conversion, ***Rensselaer Polytechnic Institute****, Department of Chemistry*, invited department seminar, March 12, 2019.
11. Wu G., PGM-free catalysts for hydrogen fuel cells, ***University of South Carolina****, Department of Chemical Engineering*, invited department seminar, February 21, 2019.

12. Wu G., Atomically dispersed metal sites catalysts for sustainable energy conversion, ***University of Florida****, Department of Chemical Engineering*, invited department seminar, December 11, 2018.
13. Wu G., Advanced PGM-free cathode catalysts for hydrogen fuel cells, *2018 Electrochemical Energy Symposium at* ***Carnegie Mellon University*** *Wilton E. Scott Institute for Energy Innovation*, November 15, 2018.
14. Wu G., Advanced cathode catalysts for hydrogen fuel cells, ***Pacific Northwest National Laboratory***, invited division seminar, May 30, 2018.
15. Wu G., PGM-free catalysts for electrochemical energy conversion through water reactions, ***Renewable Energy National Laboratory***, invited division seminar, Feb 13, 2018.
16. Wu G, Atomic metal site catalyst for energy conversion, ***Florida International University*** – *Department of Mechanical and Materials Engineering*, December 1, 2017.
17. Wu G. Large-size Graphene Tube Catalysts for Sustainable Electrochemical Energy Storage and Conversion, ***Binghamton University****, Department of Chemistry*, February 22, 2016.
18. Wu G. Carbon nanocomposite catalysts for Sustainable Electrochemical Energy Storage and Conversion, ***Cornell University****, Department of Materials Science and Engineering*, March 19, 2016.
19. Wu G. Bifunctional carbon nanocomposite catalysts for Sustainable Electrochemical Energy Conversion, ***University of Missouri-Columbia****, Department of Chemical Engineering*, March 11, 2016.

Invited talks in national and international conferences and workshops

20. Wu G., Advanced atomically dispersed metal catalysts for fuel cells, ACS Fall 2019 National Meeting & Exposition in San Diego, CA, August 25 - 29, 2019.
21. Wu G., Discussion on the formation mechanisams of Fe-N4 active sites during the thermal activation, Telluride Science Workshop: PGM-free Catalysis for fuel cell application, Telluride, CO, June 24-29, 2019
22. Wu G., Polymer Hydrogel-Derived Carbon Supports for Highly Stable Pt/C Cathode Catalysts in PEM Fuel Cells, 235th Electrochemical Society Meeting, Dallas, TX, May 28, 2019
23. Wu G., Metal-Organic Framework-Derived Carbon Electrocatalysts for Nitrogen Reduction, 235th Electrochemical Society Meeting, Dallas, TX, May 28, 2019
24. Wu G., Advanced Atomically Dispersed Metal Cathode Catalysts for Hydrogen Fuel Cells, 235th Electrochemical Society Meeting, Dallas, TX, May 28, 2019
25. Wu G., Highly Stable Carbon-Based Catalysts for Bifunctional Oxygen Reduction and Evolution for Reversible Alkaline Fuel Cells, 2019 Spring Material Research Society meeting, Phoenix, AZ, April 23, 2019.
26. Wu G., MOF-Dervied Atomically Dispersed Metal Site Cathode Catalysts for Proton Exchange Membrane Fuel Cells, 2019 Spring Material Research Society meeting, Phoenix, AZ, April 23, 2019.
27. Wu G., Atomically Dispersed and Nitrogen Coordinated Metal Site Catalysts for Oxygen Reduction in Acids, 2018 AIChE Fall meeting, Pittsburgh, PA, October 30, 2018.

28. Wu G., Advances Cathodes for Future Hydrogen Fuel Cells, 2018 International Roundtable of NanoScience and NanoTechnology, Shanghai University, September 25 2018.
29. Wu G., PGM-Free Bifunctional Electrocatalyst for Oxygen Reduction and Evolution Reactions in Reversible Alkaline Fuel Cells, 234th Electrochemical Society Meeting, October 2, 2018.
30. Wu G., High-Performance PGM-Free and Fe-Free Catalysts for Oxygen Reduction in Acidic Media, 233th Electrochemical Society Meeting, Seattle, WA, May 28, 2018
31. Wu G., Size-Controlled Carbon Catalysts Derived from Metal-Organic Frameworks for Non-Aqueous Li-Air Battery, 233th Electrochemical Society Meeting, Seattle, WA, May 28, 2018.
32. Wu G., Active Carbon Supports for Pt Cathode Catalysts in PEM Fuel Cells, 233th Electrochemical Society Meeting, Seattle, WA, May 28, 2018.
33. Wu G., PGM-Free and Iron-Free Catalysts for Oxygen Reduction in Acids, 234th Electrochemical Society Meeting, Cancun, Mexico, Oct 1, 2018
34. Wu G., Nitrogen-Doped Highly Disordered Carbon for Nitrogen Reduction Reaction during Electrochemical Ammonia Synthesis, 234th Electrochemical Society Meeting, Cancun, Mexico, Oct 1, 2018
35. Wu G., Size-Tunable Atomic Iron Catalysts Derived from Metal-Organic Framework for Oxygen Reduction in Acid Media, 233th Electrochemical Society Meeting, Seattle, WA, May 28, 2018.
36. Wu G., Atomically dispersed iron catalysts for oxygen reduction in acids，256th National Meeting and Exposition of the American-Chemical-Society (ACS) - Boston, MA Date: AUG 19-23, 2018。
37. Wu G., Highly disordered carbon for electrochemical ammonia synthesis using N_2 and H_2O in alkaline electrolytes， 256th National Meeting and Exposition of the American-Chemical-Society (ACS) Boston, MA Date: AUG 19-23, 2018
38. Wu G., Fully ordered Pt3Co intermetallic nanoparticles derived from metal-organic framework for oxygen reduction， 256th National Meeting and Exposition of the American-Chemical-Society (ACS) - Boston, MA Date: AUG 19-23, 2018.
39. Wu G., Nitrogen coordinated single cobalt atom catalysts for oxygen reduction in fuel cells, 256th National Meeting and Exposition of the American-Chemical-Society (ACS), Boston, MA Date: AUG 19-23, 2018.
40. Wu G, Highly Stable Mn-Based Nanocarbon Bifunctional Electrocatalyst for Oxygen Reduction and Evolution Reactions in Reversible Fuel Cells, *232nd ECS Meeting*, National Harbor, MD, October 1-5, 2017.
41. Wu G, Atomic iron-dispersed carbon electrocatalysts for oxygen reduction in challenging acid, 254th ACS National Meeting in Washington, DC, August 20-24, 2017.
42. Wu G, 3D high-surface-area and mesoporous graphene sheet-like nanocarbon for supercapacitors, 254th ACS National Meeting in Washington, DC, August 20-24, 2017.
43. Wu G., Elucidating Optimal Carbon Morphologies and Structures in Highly Active PGM-Free Cathodes for PEM Fuel Cells, *231st ECS Meeting*, New Orleans, LA, May, 2017.

44. Wu G., Large-size “Graphene Tube” Catalysts for Electrochemical Energy Storage and Conversion, 2016 NERM ACS Meeting, Binghamton, New York, October 7, 2016.
45. Wu G., PGM-free Cathode Catalysts for Proton Exchange Membrane Fuel Cells, 2016 NERM ACS Meeting, Binghamton, New York, October 7, 2016.
46. Wu G., “Graphene Tube” for Sustainable Electrochemical Energy Storage and Conversion, 252nd American Chemical Society National Meeting, August 20-25, Philadelphia, PA.
47. Wu G. Carbon catalysts for Sustainable Electrochemical Energy Storage and Conversion, 2016 2016 World Conference on Carbon, College station, PA, July 2016.
48. Wu G., Bifuncational nanocomposite catalysts for reversible electrochemical energy applications, *229th ECS meeting*, San Diego, CA, May, 2016.
49. Wu G., Large-size and few walled graphene tube catalysts for electrochemical energy storage and conversion, *2015 Fall MRS meeting*, Boston, MA, December, 2015.
50. Wu G, Nitrogen-Doped Large-Sized Graphene Tubes as an Active Support for a Hybrid Pt Electrocatalyst towards Oxygen-Reduction, *227th Meeting of The Electrochemical Society*, in Chicago, May 24-28, 2015.
51. Wu G, Graphene Nanocomposites Templated from Cage-Containing Metal-Organic Frameworks for Oxygen Reduction in Li-O_2 Batteries, *227th Meeting of The Electrochemical Society*, in Chicago, May 24-28, 2015.
52. Wu G, Graphene Nanocomposite Catalysts for Sustainable Electrochemical Energy Storage and Conversion, *64thCanadian Chemical Engineering Conference*, Niagara Fall, Canada, Oct 20-22, 2014.
53. Wu G, Nonprecious Metal Catalysts for Sustainable Electrochemical Energy Storage and Conversion, *Gordon Research Conference*, Nanomaterials for Applications in Energy Technology, Ventura Beach, CA, February 22-27, 2015.