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PROFESSIONAL APPOINTMENTS & EDUCATION

Jul. 2025 –	***Professor***
	Department of Chemical and Materials Engineering, University of Alberta
Jul. 2023 – Jun. 2025	***Associate Professor***
	Department of Chemical and Materials Engineering, University of Alberta
Aug. 2019 – Jun. 2023	***Tenure-Track Assistant Professor***
	Department of Chemical and Materials Engineering, University of Alberta
Aug. 2017 – Jul. 2019	***Tenure-Track Assistant Professor***
	Department of Chemical and Materials Engineering, Concordia University
Nov. 2013 – Jul. 2017	***Postdoctoral Fellow Researcher***
	Department of Chemical Engineering, University of Waterloo
Sep. 2007 – Jun. 2013	***Ph.D.*** in Chemical and Biomolecular Engineering
	University of California, Los Angeles (UCLA), United States
Sep. 2004 – Mar. 2007	***M.S.*** in Chemical Engineering
	Tianjin University, P.R. China
Sep. 2000 – Jul. 2004	***B.S.*** in Chemical Engineering (Polymer Chemical Engineering)
	Dalian University of Technology, P.R. China

SELECTED HONORS AND AWARDS

2024	**Outstanding Young Leaders Committee Member**
	For significant service and contributions to the journal Energy&Environmental Materials.
2023-2028	**Canada Research Chair – Tier 2 in Batteries for Sustainability**
	Awarding to the world's most accomplished and promising minds, aiming to achieve research excellence in engineering and the natural sciences.
2023	**Mid-Career Research Award in Engineering**
	Recognizing research excellence of mid-career professors in the Faculty of Engineering at the University of Alberta.
2023	**The Excellent Reviewer Award**
	For significant review service and contributions to the journal Electrochemical Energy Reviews.
2023	**Early Career Scholar in Materials Science**
	Promoting and recognizing outstanding research by future leaders in materials science from the Journal of Materials Research.
2019-2024	**Concordia University Research Chair-Young Scholar** (declined due to relocation)
	For significant contributions to Concordia's research in areas of strategic importance.
2018	**Petro-Canada Young Investigator Award**
	To outstanding and innovative emerging researchers for significant contributions to the training environment of the university and has an impact on society at large.
2018	**EEST2018 Organization Award**

For service and contributions to organizing and promoting International Academy of Electrochemical Energy Science (IAOEES) events.

2018 **NSERC Discovery Accelerator Supplement Award**

Natural Sciences and Engineering Research Council of Canada.

PROFESSIONAL ACTIVITIES

1. Selected Conference/Symposia Organized/Chaired

Dr. Wang has led or participated in organizing conferences/symposiums of conferences, or acted as chairs/co-chairs of sessions for over **20** (**19** since 2018) domestic and international conferences, including *Canadian Chemistry Conference and Exhibition* (CSC), *Canadian Chemical Engineering Conference* (CSChE), *Canadian Symposium on Catalysis* (CSCatalysis), *American Chemical Society* (ACS) meetings, *American Institute of Chemical Engineers* (AIChE) meetings, *The Electrochemical Society* (ECS) meetings, Materials Research Society (MRS) meetings, *etc*.

(a1) Symposium Organizer and Chair, The 65th Conference of Metallurgy and Materials (COM 2026), *Symposium "Energy and Environmental Materials"*, Calgary, Canada, August 17-20, 2026;

(a2) Symposium Organizer and Session Co-Chair, The Pacifichem 2025, *Symposium "Sustainable Chemistry for Materials and Energy"*, Honolulu, United States, December 15-20, 2025;

(a3) Session Co-Chair, The 2025 AIChE Annual Meeting, *Symposium "111-Transport and Energy Processes at Electrochemical Interfaces"*, Boston, United States, November 02-06, 2024;

(a4) Technical Committee Member, The 17th International Green Energy Conference (IGEC2025), Reykjavik, Iceland, October 12-15, 2025;

(a5) Symposium Organizer and Session Co-Chair, 2025 Canadian Chemical Engineering Conference (CSChE2025), *Symposium "Lithium-Ion Batteries and Beyond"*, Montreal, Canada, October 05-08, 2025;

(a6) Conference Organizing Committee Member, The 18th International Association of Colloid and Interface Scientists (IACIS) Conference jointly with The 98th ACS Colloid and Surface Science Symposium, Edmonton, Canada, June 22-26, 2025;

(a7) Session Co-Chair, The 2024 AIChE Annual Meeting, *Symposium "407-Transport and Energy Processes at Electrochemical Interfaces"*, San Diego, United States, October 27-31, 2024;

(a8) Session Organizer and Co-Chair, The 16th International Green Energy Conference (IGEC-XVI) & 5th International Conference on Energy and AI (ICEAI-V) & Symposium on Chemical Engineering and AI, *Special Session "2-Sustainable Energy Materials"*, Ningbo, China, June 30-July 04, 2024;

(a9) Conference Committee Member and Program Chair, The 35th Canadian Materials Science Conference (CMSC 2024), Edmonton, Canada, May 22-25, 2024;

(a10) Symposium Organizer and Session Co-Chair, The 27th Canadian Symposium on Catalysis, *Symposium "Electrocatalysis"*, Sherbrooke, Canada, May 12-15, 2024;

(a11) Session Co-Chair, The 2023 AIChE Annual Meeting, *Symposium "407-Transport and Energy Processes at Electrochemical Interfaces"*, Orlando, United States, November 05-10, 2023;

(a12) Symposium Co-Organizer and Session Chair, The 73rd Canadian Chemical Engineering Conference, *Symposium "Electrochemical Phenomena"*, Calgary, Canada, October 29-November 01, 2023;

(a13) Session Co-Chair, The 2023 MRS Spring Meeting, *Symposium "EN09-Polymeric and Organic materials for Electrochemical Energy Storage"*, San Francisco, United States, April 10-14, 2023;

(a14) Symposium Organizer and Session Co-Chair, The 105th Canadian Chemistry Conference and Exhibition, *Symposium "Chemistry and Materials for New Batteries Technologies"*, Calgary, Canada, June 13-17, 2022;

(a15) Session Co-Chair, The 241st ECS Meeting, *Symposium "A05-Battery Recycling and Reuse"*, Vancouver, Canada, May 29-June 2, 2022;

(a16) Symposium Organizer and Session Co-Chair, The 26th Canadian Symposium on Catalysis, *Symposium "Electrocatalysis for Energy Sustainability"*, Vancouver, Canada, May 15-18, 2022;

(a17) Symposium Organizer and Session Co-Chair, The 71st Canadian Chemical Engineering Conference, *Symposium "Advanced Energy Materials towards Beyond Lithium-Ion Batteries"*, Montreal, Canada, October 24-27, 2021;

(a18) Session Co-Chair, XXIX International Congress of Chemical Engineering & The 68th Canadian Chemical Engineering Conference, *Symposium "Clean Energy and Green Gas Technologies"*, Toronto, Canada, October 28-31, 2018;

(a19) Conference Committee Member and Conference Organizer, The International Conference on Electrochemical Energy Science and Technology (EEST2018), Niagara Falls, Canada, August 13-16, 2018.

2. Selected Journal Editorship

(b1) Guest Editor, *Frontiers in Energy*, special issue on "Advanced Batteries and Solid-State Batteries", August 2025-August 2026;

(b2) Editorial Board Member and Review Editor, *Battery Materials Research*, Electrochemistry Section, 2024-present;

(b3) Editorial Board Member, *Resources Chemicals and Materials*, 2023-present;

(b4) Youth Editorial Board Member, *Renewables*, 2023-present;

(b5) Guest Editor, *International Journal of Molecular Sciences*, special issue on "Emerging Applications of Nanomaterials Derived from Biomacromolecules", June 2022-June 2023;

(b6) Associate Editor, *Frontiers in Chemistry*, Electrochemistry Section, 2021-present;

(b7) Editorial Member, Young Leader Committee, *Energy and Environmental Materials*, 2021-present;

(b8) Editorial Board Member, *Battery Materials*, 2023-present;

(b9) Editorial Member, International Editorial Board, *Sustainability: Sustainable Chemistry*, 2018-present;

(b10) Editorial Board Member, *Current Trends in Chemical Engineering and Processing Technology*, 2019-present;

(b11) Lead Guest Editor, *Frontiers in Chemistry*, special issue on "Modern Approaches for Designing Energy Materials for Hydrolysis Systems", January 2020-May 2021;

(b12) Guest Editor, *Nanomaterials*, special issue on "Nanomaterials for Energy Storage and Nanoscale Fabrication", March 2018-September 2019;

(b13) Lead Guest Editor, *International Journal of Electrochemistry*, special issue on "Nanoarchitectural Design of Materials for Electrochemical Energy Storage", 2016;

3. Selected Editorial Reviewer

Dr. Wang has been serving as very active peer reviewer for over **80** major journals in the fields of chemistry and electrochemistry, materials science and engineering, nanoscience and nanotechnology, clean energy and sustainability, most of which are internationally recognized leading journals with both high impact and reputation. Some examples are listed below.

(c1) Springer Nature Publications:	*Nature Materials, Nature Sustainability, Nature Energy, Nature Communications, Nano-Micro Letters, Ionics, SN Applied Sciences*
(c2) Wiley Publications:	*Angewandte Chemie, Advanced Materials, Advanced Energy Materials, Advanced Functional Materials, Small, Small Methods, Small Structures, Energy Technology, ChemSusChem, ChemistrySelect, ChemElectroChem, ChemPlusChem, Journal of Applied Polymer Science, Carbon Energy, Advanced Materials Interfaces, The Canadian Journal of Chemical Engineering, Battery Energy, SusMat, Energy & Environmental Materials*
(c3) Cell Publications:	*Joule, Chem, Matter*
(c4) ACS Publications:	*Journal of the American Chemical Society, Nano Letters, ACS Nano, Chemistry of Materials, ACS Catalysis, ACS Omega, ACS Applied Materials and Interfaces, ACS Sustainable Chemistry & Engineering, ACS Energy Letters, ACS Applied Nano Materials, The Journal of Physical Chemistry, ACS Applied Energy Materials, ACS Sustainable Resource Management*
(c5) RSC Publications:	*Journal of Materials Chemistry A, Physical Chemistry Chemical Physics, Sustainable Energy and Fuels, Chemical Communications, Chemical Science, Nanoscale, Materials Chemistry Frontiers, RSC Advances, Energy Advances*
(c6) Elsevier Publications:	*Nano Energy, Energy Storage Materials, Applied Catalysis B: Environmental, Journal of Power Sources, Chemical Engineering Journal, Materials Today Chemistry, Materials Today Energy, Journal of Energy Chemistry, Applied Surface Science, Journal of Alloys and Compounds, Journal of Colloid and Interface Science, Carbon, Electrochimica Acta, Progress in Natural Science: Materials International, Catalysis*

	Today, Energy Report, Colloids and Surfaces A, Advances in Colloid and Interface Science
(c7) MRS Publications:	*MRS Energy & Sustainability, Journal of Materials Research*
(c8) ECS Publications:	*Journal of Electrochemical Society, Electrochemistry Communications*
(c9) Others:	*Electrochemical Energy Review, National Science Review, Frontiers in Chemistry, Nano Research, Journal of Nanoscience and Nanotechnology, Nanomaterials, Microstructures, National Science Review*

4. Selected Proposal Reviewer

Dr. Wang has been serving as very active external reviewer for **5** major Canadian funding agencies including *Natural Sciences and Engineering Research Council* (NSERC), *New Frontiers in Research Fund* (NFRF), *Canada Foundation of Innovation* (CFI), *Canada-Israel Industrial Research and Development Foundation* (CIIRDF), and *Mitacs Canada*, **2** U.S. government funding agency (*NSF* and *U.S. Army Research Office*), and **1** Sweden government funding agency (*Swedish Energy Agency*). He has so far evaluated over **90** applications/proposals.

(d1) Natural Sciences and Engineering Research Council of Canada (NSERC)
Discovery Program (7 proposals)
College and Community Innovation Program (1 proposal)
Author B. McDonald Fellowship (1 application)
Collaborative Research and Training Experience Program (1 proposal)
Idea to Innovation Program (2 proposal),
College and Community Innovation Program (1 proposal)
NSERC Alliance Grant Program (4 applications)

(d2) Tri-agency Institution
Canada Research Chair Program (1 application)

(d3) Mitacs Canada
Accelerate Program (8 proposals)
Elevate Program (3 proposals)
Thematic Elevate Program (3 proposals)

(d4) Social Sciences and Humanities Research Council of Canada (SSHRC)
New Frontiers in Research Fund-Exploration Program (NFRF-E) (17 proposals)
New Frontiers in Research Fund-Transformation Program (NFRF-T) (1 proposal)

(d5) Canada Foundation of Innovation
John R. Evans Leaders Fund Program (5 applications)

(d6) Canada-Israel Industrial Research and Development Foundation (CIIRDF)
Canada-Israel Collaborative R&D Program (1 proposal)

(d7) National Science Foundation of United States (NSF)
DMREF Solid State Battery Program (19 proposals)

(d8) US Army Research Office (ARO) and Army Research Laboratory (ARL)
Foundational Research Program (1 proposal).

(d9) Swedish Energy Agency, Department for Research, Innovation and Business Development of Sweden
Sustainable Battery Value Chain Program (14 proposals).

5. Professional Affiliations

(e1) Founder/Division Chair, Sustainable Energy Materials Division, International Association for Green Energy (IAGE)
(e2) Member of Association of Professional Engineers and Geoscientists of Alberta (APEGA)
(e3) Review Panel for Clean Technology-Mitacs Thematic Elevate Program
(e4) Review Panel Committee Member, New Frontiers in Research Fund (NFRF)
(e5) Standard Council Canada Mirror Committee, Electric Road Vehicles and Electric Industrial Trucks

(e6) Member of American Chemical Society (ACS)
(e7) Member of The Electrochemical Society (ECS)
(e8) Member of Materials Research Society (MRS)
(e9) Member of Canadian Society for Chemical Engineering (CSChE)
(e10) Member of The American Institute of Chemical Engineers (AIChE)
(e11) Member of International Academy of Electrochemical Energy Science (IAOEES)

RESEARCH SUPPORTS

1. Selected Research Grants *(PI: Principal Investigator; PA: Principal Applicant; CoA: Co-Applicant)*

Since his independent career from 2017, Dr. Wang has successfully secured over **$5.5 M** research grant in total with direct cash contributions of ~$3.8 M, as principal investigator or principal applicant, from both internal and external funding resources including federal and provincial funding agencies, university, and industrial partners to support his research programs.

- At federal level, he has on-going or completed support from NSERC (2 Discovery Grants, 1 Discovery Accelerator Supplement Grant, 2 Alliance International Catalyst Grants, and 1 Alliance Critical Minerals Grant), NFRF (2 NFRF-E Grant), CFI (1 JELF Grant), and Canada Research Chair Program (1 Tier-2 Grant);
- At provincial level, he has 2 CQMF/QCAM Interinstitutional Collaboration Research Grants from Quebec and 1 Alliance-Alberta Innovates Grant; at the institutional level, he has over 20 Grants from multiple universities/faculties, and organizations such as *Institute for Oil Sands Innovation* (IOSI) and *Future Energy System* (FES).

2. Selected International Research Collaborations and Selected Industrial Partners

Dr. Wang has established or initiated broad and close collaborations with researchers from both domestic and international universities/institutions/national labs, and with industrial partners. More specifically, he is collaborating with Prof. Zheng Chen from *UCSD* in U.S. on battery recycling technologies, with Prof. Sung Mook Choi from *KIMS* in Korea on seawater splitting development, both through *NSERC Alliance-International Catalyst Grant*. He is collaborating with Dr. Jun Lu and Dr. Matthew Li from *Argonne National Laboratory* in U.S. on Zn-ion batteries.

Dr. Wang is also collaborating with industrial partners. For example, his research on critical minerals around battery technologies is currently supported by the *NSERC Alliance-Critical Minerals Program* and he is also applying for *NFRF-E* program with *Kemetco Research Inc.* and *Alberta Lithium Battery Company*, based on previous collaborations. Dr. Wang has also ongoing collaborative research projects with *Nanode Battery Technologies* supported by *Mitacs Elevate* program, and *NRCan* supported by *NSERC Alliance* program.

HQP TRAINING RECORD

Since his independent career from 2017 and recruiting his first HQP in Winter 2018, Dr. Wang has been directly supervising over 60 highly qualified personnel (HQP), including 15 Ph.D. and 10 M.Sc. students, 7 postdoctoral fellows, as well as many visiting students/scholars and undergraduate research assistants/interns.

1. Selected Oral and Poster Presentations from Dr. Wang's Group:

All of Dr. Wang's past/current trainees had/have opportunities of presenting research progress in major conferences. So far, a total number of 44 presentations have been delivered in the form of oral, poster, or even invited oral presentations from Dr. Wang's trainees.

(a1) (Poster) D. Patel, **X. Wang***, Electrolyte Interphase Engineering for High Performance Zn Metal Anode, The 18th International Association of Colloid and Interface Scientists (IACIS) Conference jointly with The 98th ACS Colloid and Surface Science Symposium, June 2025, Edmonton, Canada;

(a2) (Oral) Z.M. Li, **X. Wang***, G. Li*, Revealing the Role of 1T- & 2H- Molybdenum Disulfide/Nickel Sulfide Heterojunction for Efficient Overall Water Splitting, The 247th ECS Meeting, May 2025, Montreal, Canada;

(a3) (Oral) W. Deng, **X. Wang***, Deep Eutectic Electrolytes for Advanced Zinc Batteries through Solvation and Interface Control, The 2024 AIChE Annual Meeting, October 2024, San Diego, United States;

(a4) (Oral) Y. Chen, **X. Wang***, Regulating Interfacial Reaction through Electrolyte Chemistry Enables Anion-Rich Interphase for Wide-Temperature Zinc Metal Batteries, The 2024 AIChE Annual Meeting, October 2024, San Diego, United States;

(a5) (Oral) Z. Deng, **X. Wang***, Quantitative Structure-Performance Correlation Study on Au@Pd Nanowires for Oxygen Reduction Reaction, The 2024 ACS Fall Meeting, August 2024, Denver, United States;

(a6) (Oral) Z.M. Li, **X. Wang***, 1T&2H-MoS_2/Ni_3S_2 Heterojunction Supported by Nickel Foam for Overall Water Splitting, The 35th Canadian Materials Science Conference (CMSC 2024), May 2024, Edmonton, Canada;

(a7) (Oral) J. Cui, **X. Wang***, D. Ivey*, Functional Electrolyte Additives for Zinc-Ion Batteries, The 35th Canadian Materials Science Conference (CMSC 2024), May 2024, Edmonton, Canada;

(a8) (Oral) Z. Deng, **X. Wang***, Catalytic Performance Promotion of Pd Cluster towards H_2O_2 Production by Potential-Driven Coordination Adjustment, The 27th Canadian Symposium on Catalysis, May 2024, Sherbrooke, Canada;

(a9) (Oral) Z. Deng, **X. Wang***, Catalytic Performance Promotion of Pd Cluster towards H_2O_2 Production by Potential-Driven Coordination Adjustment, The 2023 MRS Fall Meeting, November 2023, Boston, United States;

(a10) (Oral) Z. Xu, **X. Wang***, Reversible Zn Powder Electrodes for Aqueous Batteries and Supercapacitors, The 2023 MRS Fall Meeting, November 2023, Boston, United States;

(a11) (Oral) Y. Chen, **X. Wang***, Ultrathin Semiconductor Interphase Regulated Electric Double Layer Enabling Highly Stable Zinc Metal Anode, The 2023 MRS Fall Meeting, November 2023, Boston, United States;

(a12) (Oral) Z. Deng, **X. Wang***, Catalytic Performance Promotion of Pd Cluster Towards H_2O_2 Production by Potential-Driven Coordination Adjustment, The 2023 AIChE Annual Meeting, November 2023, Orlando, United States;

(a13) (Oral) Y. Dong, **X. Wang***, Synergistic Tuning of CoO/CoP Heterojunction Nanowire Arrays as Efficient Bifunctional Catalysts for Alkaline Overall Water Splitting, The 73rd Canadian Chemical Engineering Conference (CSChE 2023), October 2023, Calgary, Canada;

(a14) (Oral) Z. Sun, **X. Wang***, Zn, Co-ZIF Derived $ZnCo_2O_4$ Pseudocapacitor Diode for Unidirectional Energy Storage, The 73rd Canadian Chemical Engineering Conference (CSChE 2023), October 2023, Calgary, Canada;

(a15) (Oral) Z. Xu, **X. Wang***, Reversible Zn Powder Electrodes via Crystal Facet Engineering, The 73rd Canadian Chemical Engineering Conference (CSChE 2023), October 2023, Calgary, Canada;

(a16) (Oral) Z. Xu, **X. Wang***, A Fast, Stable, and Thick Polymer Electrode for Aqueous Zinc-Ion Batteries and Supercapacitors, The 73rd Canadian Chemical Engineering Conference (CSChE 2023), October 2023, Calgary, Canada;

(a17) (Oral) Z. Xu, **X. Wang***, Advanced Zinc-Ion Supercapacitors via Electrode, Electrolyte, and Binder Engineering, The 73rd Canadian Chemical Engineering Conference (CSChE 2023), October 2023, Calgary, Canada;

(a18) (Oral) Z. Xu, **X. Wang***, Upcycling Spent Alkaline Batteries into Secondary Zinc Metal Batteries, The 73rd Canadian Chemical Engineering Conference (CSChE 2023), October 2023, Calgary, Canada;

(a19) (Oral) Z. Deng, **X. Wang***, Pd 4*d*-orbital Overlapping Modulation on Au@Pd Nanowires for Efficient H_2O_2 Production, The 73rd Canadian Chemical Engineering Conference (CSChE 2023), October 2023, Calgary, Canada;

(a20) (Poster) Z. Deng, **X. Wang***, Revealing the Role of Mo Doping in Promoting Oxygen Reduction Reaction Performance of Pt_3Co Nanowires, The 73rd Canadian Chemical Engineering Conference (CSChE 2023), October 2023, Calgary, Canada;

(a21) (Oral) Z. Deng, **X. Wang***, Mechanism Investigation of Enhanced Electrochemical H_2O_2 Production Performance on Oxygen-Rich Hollow Porous Carbon Spheres, The 73rd Canadian Chemical Engineering Conference (CSChE 2023), October 2023, Calgary, Canada;

(a22) (Oral) Y. Chen, **X. Wang***, Dual-Function Electrolyte Additive Enabling Simultaneous Electrode Interface and Coordination Environment Regulation for Zinc-Ion Batteries, The 73rd Canadian Chemical Engineering Conference (CSChE 2023), October 2023, Calgary, Canada;

(a23) (Poster) Y. Chen, **X. Wang***, Ultrathin Semiconductor Interphase Regulated Electric Double Layer Enabling Highly Stable Zinc Metal Anode, The 73rd Canadian Chemical Engineering Conference (CSChE 2023), October 2023, Calgary, Canada;

(a24) (Oral) Z. Deng, **X. Wang***, Catalytic Performance Promotion of Pd Cluster towards H_2O_2 Production by Potential-Driven Coordination Adjustment, The 2023 MRS Spring Meeting, April 2023, San Francisco, United States;

(a25) (Oral) Y. Chen, **X. Wang***, Environmentally Friendly Phytic Acid Additive Enabling Simultaneous Optimization on Electrode Interface and Coordination Environment for Stable Aqueous Zinc-Ion Batteries, The 2023 MRS Spring Meeting, April 2023, San Francisco, United States;

(a26) (Oral) Z. Xu, **X. Wang***, Aqueous Zn-based Energy Storage Devices working under Extreme Conditions, The 2023 MRS Spring Meeting, April 2023, San Francisco, United States;

(a27) (Oral) Z. Xu, **X. Wang***, A Fast, Stable, and Thick Polyimide Anode for Aqueous Zinc Batteries and Capacitors, The 2023 MRS Spring Meeting, April 2023, San Francisco, United States;

(a28) (Oral) W. Deng, **X. Wang***, High-Donor Electrolyte Additive for Stable Aqueous Zinc Batteries, The 2023 MRS Spring Meeting, April 2023, San Francisco, United States;

(a29) (Poster) Z. Deng, **X. Wang***, Mechanism Investigation of Enhanced Electrochemical H2O2 Production Performance on Oxygen-Rich Hollow Porous Carbon Spheres, The 2023 MRS Spring Meeting, April 2023, San Francisco, United States;

(a30) (Oral) W. Deng, **X. Wang***, Construction of Hybrid Coating Layer for Robust Zinc Anodes, The 241st ECS Meeting, May 2022, Vancouver, Canada;

(a31) (Oral) W. Deng, **X. Wang***, Three-Dimensional Carbon-Catalyst as Sulfur Host for Polysulfide Regulation in Lithium-Sulfur Batteries, The 241st ECS Meeting, May 2022, Vancouver, Canada;

(a32) (Oral) Z. Xu, **X. Wang***, Zinc-Ion Capacitors Working at Extreme Conditions, The 241st ECS Meeting, May 2022, Vancouver, Canada;

(a33) (Oral) Z. Xu, **X. Wang***, 3D Heteroatom-Doped Carbon for Lithium/Zinc Metal Anodes, The 241st ECS Meeting, May 2022, Vancouver, Canada;

(a34) (Poster) Z. Xu, **X. Wang***, Nickel-Molybdenum Carbide/Nitrogen-Doped Carbon Mott-Schottky Nanoarray for Water Splitting, The 241st ECS Meeting, May 2022, Vancouver, Canada;

(a35) (Oral) Z. Deng, **X. Wang***, Revealing the Role of Mo Doping in Promoting Oxygen Reduction Reaction Performance of Pt_3Co Nanowires, The 241st ECS Meeting, May 2022, Vancouver, Canada;

(a36) (**Invited Oral**) Z. Xu, **X. Wang***, Ni-Mo_2C/N-doped Carbon Mott-Schottky Arrays for Water Splitting, The 26th Canadian Symposium on Catalysis (CSC2022), May 2022, Vancouver, Canada;

(a37) (Oral) Z. Deng, **X. Wang***, Revealing the Role of Mo Doping in Promoting Oxygen Reduction Reaction Performance of Pt_3Co Nanowires, The 71st Canadian Chemical Engineering Conference (CCEC2021), October 2021, Montreal, Canada;

(a38) (Oral) W. Deng, **X. Wang***, Three-dimensional Porous Carbon-Catalyst Structure as Sulfur Host for High-Performance Lithium-Sulfur Batteries, The 71st Canadian Chemical Engineering Conference (CCEC2021), October 2021, Montreal, Canada;

(a39) (Oral) Z. Deng, **X. Wang***, Integrating Multiple Advantages into 1 Nm Pt_3Ni Bimetallic Alloy Nanowires for Oxygen Reduction Reaction, The 237th ECS Meeting with the 18th International Meeting on Chemical Sensors (IMCS2020), May 2020, Montreal, Canada;

(a40) (Oral) L. Chen, **X. Wang***, Bimetallic CoNi Alloy Nanoparticles Embedded in Nitrogen-Doped Pomegranate-Like Carbon Structure as Bifunctional Electrocatalyst, The 69th Canadian Chemical Engineering Conference (CCEC2019), October 2019, Halifax, Canada;

(a41) (Poster) Z. Xu, **X. Wang***, Hierarchical Carbon-based Nanomaterials for Green Energy Devices, The 69th Canadian Chemical Engineering Conference (CCEC2019), October 2019, Halifax, Canada;

(a42) (Oral) Z. Xu, **X. Wang***, Hierarchical Carbon Nanosheet Arrays for Lithium Metal Battery and Water Splitting, The 69th Canadian Chemical Engineering Conference (CCEC2019), October 2019, Halifax, Canada;

(a43) (Oral) Z. Xu, **X. Wang***, Hierarchical Carbon-based Nanomaterials for Green Energy Devices, XXIX International Congress of Chemical Engineering Incorporating the 68th Canadian Chemical Engineering Conference (CCEC2018), October 2018, Toronto, Canada;

(a44) (Poster) L. Chen, **X. Wang***, Ultrafine $Li_4Ti_5O_{12}$ Nanocrystals as Building Blocks for High-Power Lithium Battery Anode, The International Conference on Electrochemical Energy Science and Technology (EEST2018), August 2018, Niagara Falls, Canada.

2. Selected Student's Awards (scholarships, fellowships, and awards)

The majority of Dr. Wang's HQP has received scholarships/awards/fellowships, some of which are highly prestigious including "*The 2023 Governor General's Gold Medal*" (Z. Xu in 2023), "*The William Boytzun Memorial Graduate Award*" (Z. Deng in 2023), "*Alberta Graduate Excellence Scholarship*", and "*Andrew Stewart Memorial Graduate Prize*". A total number of **55** scholarships, fellowships, awards with a total amount of over **$0.61 M** is obtained from almost all HQP in Dr. Wang's group for the past 6 years.

(b1) Z. Li, Samit & Reshma Sharma Graduate Scholarship in Chemical and Materials Engineering, University of Alberta, 2025, $3,600;

(b2) K. Qu, MSCA Postdoctoral Fellowship, Marie Skłodowska-Curie Actions, Horizon Europe, 2025;

(b3) Z.M. Li, Graduate Student Research Excellence Award, Faculty of Engineering, University of Alberta, 2025, $1,000;

(b4) Y. Yin, Graduate Recruitment Scholarship, University of Alberta, Winter 2025, $5,000;

(b5) Y. Yin, Captain Thomas Farrell Greenhalgh Memorial Graduate Scholarship, University of Alberta, Winter 2025, $3,500;

(b6) Z. Yu, Graduate Recruitment Scholarship, University of Alberta, Winter 2025, $10,000;

(b7) Z. Yu, Captain Thomas Farrell Greenhalgh Memorial Graduate Scholarship, University of Alberta, Winter 2025, $3,500;

(b8) Y. Chen, The William Boytzun Memorial Graduate Award in Engineering, University of Alberta, 2024, $8,000;

(b9) Y. Chen, TEP Graduate Student Award, American Institute of Chemical Engineers (AIChE), 2024;

(b10) Y. Chen, Graduate Student Research Excellence Award, Faculty of Engineering, University of Alberta, 2024, $1,000;

(b11) Z. Deng, FES Postdoctoral Fellow Opportunity Award, Future Energy Systems, Future Energy Systems & University of Alberta, 2024, $2,500;

(b12) M.A.M. Raghuman, Captain Thomas Farrell Greenhalgh Memorial Graduate Scholarship, University of Alberta, Winter 2024, $3,500;

(b13) Z. Deng, The William Boytzun Memorial Graduate Award in Engineering, University of Alberta, 2023, $13,600;

(b14) Y. Chen, FES Graduate Student Opportunity Award, Future Energy Systems, Future Energy Systems & University of Alberta, 2023, $2,000;

(b15) Z. Deng, FES Graduate Student Opportunity Award, Future Energy Systems, Future Energy Systems & University of Alberta, 2023, $2,000;

(b16) Z. Xu, FES Postdoctoral Fellow Opportunity Award, Future Energy Systems, Future Energy Systems & University of Alberta, 2023, $3,000;

(b17) Z. Deng, D.B. Robinson Graduate Scholarship in Chemical and Materials Engineering, University of Alberta, 2023, $4,200;

(b18) Y. Chen, Yinan Wang Memorial Graduate Scholarship in Engineering, University of Alberta, University of Alberta, 2023, $5,000;

(b19) Z. Deng, CLS Student Travel Award, Canadian Light Source Inc., 2023, $750;

(b20) Y. Chen, CLS Student Travel Award, Canadian Light Source Inc., 2023, $750;

(b21) Z. Xu, CLS Student Travel Award, Canadian Light Source Inc., 2023, $750;

(b22) Y. Chen, Neware Academic Publication Award, Neware Technology Ltd., 2023, $200;

(b23) W. Deng, Neware Academic Publication Award, Neware Technology Ltd., 2023, $200;

(b24) Z. Xu, Neware Academic Publication Award, Neware Technology Ltd., 2023, $200;

(b25) W. Deng, Chinese Government Award for Outstanding Self-Finance Students Abroad, China Scholarship Council, 2023, $6,000;

(b26) Z. Deng, Chinese Government Award for Outstanding Self-Finance Students Abroad, China Scholarship Council, 2023, $6,000;

(b27) Z. Xu, Governor General's Gold Medal, The Governor General of Canada, 2023 Spring Convocation;

(b28) Y. Chen, FGSR Travel Award, University of Alberta, 2023, $1,500;

(b29) Y. Chen, GSA Travel Award, University of Alberta, 2023, $500;

(b30) Z. Deng, FGSR Travel Award, University of Alberta, 2023, $1,500;

(b31) Z. Deng, GSA Travel Award, University of Alberta, 2023, $500;

(b32) Z. Sun, Captain Thomas Farrell Greenhalgh Memorial Graduate Scholarship, University of Alberta, Winter 2023, $3,500;

(b33) W. Deng, Alberta Graduate Excellence Scholarship, Government of Alberta, 2022/2023, $12,000;

(b34) Z. Xu, Chinese Government Award for Outstanding Self-Finance Students Abroad, China Scholarship Council, 2022, $6,000;

(b35) Z. Xu, Andrew Stewart Memorial Graduate Prize, University of Alberta, 2022, $5,000;

(b36) W. Deng, J. Gordin Kaplan Graduate Student Award, University of Alberta, 2022, $1,250;

(b37) W. Deng, Battery Division Student & Postdoc Travel Grants, The Electrochemical Society, Spring 2022, $285;

(b38) Z. Xu, J. Gordin Kaplan Graduate Student Award, University of Alberta, 2022, $1,403;

(b39) Z. Xu, Student Travel Award for CSC2022 Conference, Canadian Catalysis Foundation, 2022, $449;

(b40) N. Zhang, Captain Thomas Farrell Greenhalgh Memorial Graduate Scholarship, University of Alberta, Fall 2021, $2,000;

(b41) Y. Chen, Captain Thomas Farrell Greenhalgh Memorial Graduate Scholarship, University of Alberta, Fall 2021, $2,500;

(b42) W. Deng, Captain Thomas Farrell Greenhalgh Memorial Graduate Scholarship, University of Alberta, Fall 2021, $3,500;

(b43) Z. Xu, Captain Thomas Farrell Greenhalgh Memorial Graduate Scholarship, University of Alberta, Fall 2021, $2,000;

(b44) Y. Wang, Doctoral Scholarship for Studying Abroad, China Scholarship Council, 2021-2025, $105,600;

(b45) Y. Chen, Doctoral Scholarship for Studying Abroad, China Scholarship Council, 2020-2024, $105,600;

(b46) W. Deng, Captain Thomas Farrell Greenhalgh Memorial Graduate Scholarship, University of Alberta, Spring 2020, $2,500;

(b47) Z. Xu, Captain Thomas Farrell Greenhalgh Memorial Graduate Scholarship, University of Alberta, Spring 2020, $2,500;

(b48) Z. Deng, Captain Thomas Farrell Greenhalgh Memorial Graduate Scholarship, University of Alberta, Fall 2019, $2,500;

(b49) Z. Xu, Conference & Exposition Award, Concordia University, Fall 2019, $1,000;

(b50) H. Tabassum, Horizon Postdoctoral Fellowship, Concordia University, 2019-2021, $116,000 (declined);

(b51) X. Gao, International Tuition Waiver Award, Concordia University, 2019-2023, $47,000;

(b52) L. Chen, Dominic D'Alessandro Fellowship, Concordia University, 2018-2019, $1,000;

(b53) A. Karimi, ENCS/SGS Entrance Award, Concordia University, 2018, $5,000;

(b54) Z. Xu, Conference & Exposition Award, Concordia University, Fall 2018, $800;

(b55) Z. Xu, International Tuition Waiver Award, Concordia University, 2018-2022, $47,000;

(b56) L. Chen, Conference & Exposition Award, Concordia University, Summer 2018, $800;

(b57) L. Chen, International Tuition Waiver Award, Concordia University, 2018-2022, $47,000.

3. Selected Students' Careers

The majority of Dr. Wang's HQP has transitioned into high-caliber careers in academia and industry, including becoming professors at universities (*e.g.*, *Zhejiang University*, *Hunan University of Arts and Science*, *Zhejiang Agriculture and Forestry University*), research scientists/engineers in battery companies (*e.g.*, *BYD Ltd.*, *E-One Moli Energy Ltd.*), and staff in organizations (*e.g.*, *Future Energy Systems*). Several graduates from Dr. Wang's lab are pursuing higher education in top universities (*e.g.*, *The University of Adelaide*, *UBC*).

Name	**Position at UofA/Concordia**	**Current Employment**	**Current Position**
L. Chen	M.Sc. and Ph.D.	BYD Ltd.	Battery Research Scientist
Z. Xu	Ph.D. and Postdoc	The University of Adelaide	Postdoctoral Fellow
Z. Deng	Ph.D. and Postdoc	China University of Geoscience	Associate Professor
W. Deng	Ph.D. and Postdoc	Beijing University of Technology	Associate Professor
Z.M. Li	M.Sc.	University of Alberta	Staff Member
Y. Chen	Ph.D.	University of Alberta	Postdoctoral Fellow
K. Qu	Postdoc	University of Oxford	Postdoctoral Fellow
A.K. Vinayak	M.Sc.	Future Energy System	Operation Coordinator
N. Zhang	M.Sc.	The University of Adelaide	Ph.D. Candidate
R. Ma	M.Sc.	The University of Adelaide	Ph.D. Candidate
J. Shan	USRA	E-One Moli Energy Ltd.	Product Quality Engineer
H.B. Li	Research Intern	University of British Columbia	Ph.D. Candidate
X. Zhang	Visiting Ph.D.	Zhejiang University	Associate Professor
Y. Dong	Visiting Ph.D.	Hunan University of Arts & Science	Assistant Professor

Z. Sun	Visiting Ph.D.	Zhengjiang A&F University	Assistant Professor

PRESENTATIONS

Since 2017, Dr. Wang has been invited to deliver over **38** research presentations for institutional/departmental seminars in both domestic (*e.g.*, University of Calgary, INRS) and international leading universities/institutions (*e.g.*, UCSD, KIMS, SJTU). He has also been invited to present **45** keynote/invited speeches in major domestic and international conference.

1. Selected Invited Research Seminars:

(a1) Songshan Lake Materials Laboratory, Dongguan, P.R. China, July 09, 2025;
(a2) Wenzhou University, Wenzhou, P.R. China, April 22, 2025;
(a3) Henan Normal University, Xinxiang, P.R. China, December 30, 2024;
(a4) Wuhan University of Science and Technology, P.R. China, December 26, 2024;
(a5) Suzhou Lab, P.R. China, December 25, 2024;
(a6) Shanghai University, P.R. China, December 23, 2024;
(a7) Korea Institute of Materials Science, P.R. China, December 19, 2024;
(a8) Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences, December 17, 2024;
(a9) Ocean University of China, December 17, 2024;
(a10) Jishou University, Xiangxi, P.R. China, July 29, 2024;
(a11) Chongqing University, Chongqing, P.R. China, July 16, 2024;
(a12) Shenzhen University, Shenzhen, P.R. China, July 12, 2024;
(a13) Shanghai Jiao Tong University (SJTU), Shanghai, P.R. China, July 05, 2024;
(a14) Zhejiang Wanli University, Ningbo, P.R. China, July 01, 2024
(a15) Hebei University of Technology, Tianjin, P.R. China, June 18, 2024;
(a16) Henan Normal University, Xinxiang, P.R. China, April 29, 2024;
(a17) Shenzhen Technology University, Shenzhen, P.R. China, July 26, 2023;
(a18) Shenzhen University, Shenzhen, P.R. China, July 25, 2023;
(a19) Shanghai Jiao Tong University (SJTU), Shanghai, P.R. China, July 24, 2023;
(a20) Henan Normal University, Xinxiang, P.R. China, July 18, 2023;
(a21) Tianjin University (TJU), Tianjin, P.R. China, July 13, 2023;
(a22) Dalian University of Technology (DUT), Dalian, P.R. China, July 10, 2023;
(a23) Korea Institute of Materials Science (KIMS), Changwon, Republic of Korea, July 09, 2023;
(a24) Institut national de la recherche scientifique (INRS), Varennes, Canada, May 03, 2023;
(a25) University of California, San Diego (UCSD), La Jolla, United States, April 06, 2023;
(a26) University of Calgary, Calgary, Canada, March 14, 2023;
(a27) Emissions Reduction Alberta (ERA)'s Show-and-Tell Event, Edmonton, Canada, May 10, 2022 (Virtual);
(a28) Association of Chinese Canadian Professors, Edmonton, Canada, August 19, 2020;
(a29) Tiangong University, Tianjin, P.R. China, January 03, 2020;
(a30) University of Science and Technology Beijing, Beijing, P.R. China, January 02, 2020;
(a31) Yantai University, Yantai, P.R. China, December 30, 2019;
(a32) Guangzhou Institute of Energy Conversion, Chinese Academy Sciences, Guangzhou, P.R. China, December 20, 2019;
(a33) Henan Normal University, Xinxiang, P.R. China, December 18, 2019;
(a34) Hebei University of Technology, Tianjin, P.R. China, June 17, 2019;
(a35) Concordia University (Department of Chemistry), Montreal, Canada, November 16, 2018;
(a36) Henan Normal University, Xinxiang, P.R. China, June 05, 2018;
(a37) Concordia Centre for Composites, Montreal, Canada, December 12, 2017;
(a38) University of Saskatchewan, Saskatoon, Canada, June 03, 2016.

2. Selected Keynote and Invited Lectures:

(b1) (Invited) The 2026 MRS Spring Meeting (April 26-May 01, 2026), Honolulu, United States;

(b2) (Invited) The Pacifichem 2025 (December 15-20, 2025), Honolulu, United States;

(b3) (Invited) The 2025 AIChE Annual Meeting (November 02-06, 2025), Boston, United States;

(b4) (Invited) Canadian Chemical Engineering Conference (CSChE 2025) (October 05-07, 2025), Montreal, Canada;

(b5) (Keynote) The 6th International Conference on Energy Storage Materials (September 21-24, 2025), Shenyang, P.R. China;

(b6) (Keynote) Western Transit Innovation Summit (September 15, 2025), Okotoks, Canada;

(b7) (Invited) The 1st Global Chinese Materials Conference (July 22-27, 2025), Namur, Belgium;

(b8) (Invited) Workshop on NanoTech Enabled Green and Sustainable Energy Technologies (N-TegSet) (July 21-22, 2025), Waterloo, Canada;

(b9) (Invited) Chinese Materials Conference 2025 (July 05-08, 2025), Xiamen, P.R. China;

(b10) (Invited) 23rd International Nanotech Symposium & Exhibition (NanoKorea 2025) (July 02-04, 2025), Kintex, Korea;

(b11) (Invited) The 247th ECS Meeting (May 18-22, 2025), Montreal, Canada;

(b12) (Keynote) 2025 Renewables International Conference (April 09-11, 2025), Ningbo, China;

(b13) (Invited) The 2025 MRS Spring Meeting (April 07-11, 2025), Seattle, United States;

(b14) (Invited) The 2024 AIChE Annual Meeting (October 26-November 01, 2024), San Diego, United States;

(b15) (Invited) The 2024 ACS Fall Meeting (August 18-22, 2024), Denver, United States;

(b16) (Invited) Chinese Materials Conference 2024 & The 2nd World Materials Conference (July 08-11, 2024), Guangzhou, P.R. China;

(b17) (Invited) The 16th International Green Energy Conference (IGEC XVI, June 30-July 04, 2024), Ningbo, China;

(b18) (Invited) The 245th ECS Meeting (May 26-30, 2024), San Francisco, United States;

(b19) (Invited) The 27th Canadian Symposium on Catalysis (May 12-15, 2024), Sherbrooke, Canada;

(b20) (Invited) The 2nd Dalian Catalysis+ International Summit (April 19-21, 2024), Dalian, China;

(b21) (Invited) The 2023 MRS Fall Meeting (November 26-December 01, 2023), Boston, United States;

(b22) (Invited) The 2023 AIChE Annual Meeting (November 05-10, 2023), Orlando, United States;

(b23) (Invited) The 73rd Canadian Chemical Engineering Conference (October 29-November 01, 2023), Calgary, Canada;

(b24) (Keynote) The 15th International Green Energy Conference (IGEC-XV) (July 10-13, 2023), Glasgow, UK;

(b25) (Keynote) 2023 China-Africa Innovation Cooperation and Development Forum and Hubei International Technology Exchange Conference (July 06, 2023), Wuhan, P.R. China;

(b26) (Invited) 21st International Nanotech Symposium & Exhibition (NanoKorea 2023) (July 05-07, 2023), Kintex, Korea;

(b27) (Invited) 2023 Canadian Chemistry Conference and Exhibition (CSC 2023) (June 04-08, 2023), Vancouver, Canada;

(b28) (Invited) The 2023 MRS Spring Meeting (April 10-14, 2023), San Francisco, United States;

(b29) (Invited) The 5th Organic Battery Days (October 13-14, 2022), Houston, United States;

(b30) (Invited) The 11th Asia-Pacific Forum on Renewable Energy (AFORE2022) (Sep. 27-Oct. 01, 2022), Jeju, Korea;

(b31) (Invited) The 26th Canadian Symposium on Catalysis (June 09-June 12, 2022), Vancouver, Canada;

(b32) (Invited) Canada's Rising Stars in Electrochemical Systems Symposium (April 28-29, 2022), Virtual;

(b33) (Invited) The 241st ECS Meeting (May 29-June 02, 2022), Vancouver, Canada;

(b34) (Keynote) VEBLEO Webinar on Energy Materials and Technology (February 25-28, 2022), Virtual;

(b35) (Keynote) Graphene &2D Materials International Conference, GrapheneCanada2021 (December 01-02, 2021), Virtual;

(b36) (Invited) 70th Canadian Chemical Engineering Conference (October 26-October 30, 2020), Ottawa (Fully Virtual), Canada;

(b37) (Invited) The 26th Canadian Symposium on Catalysis (June 09-June 12, 2020), Vancouver, Canada;

(b38) (Invited) The 237th ECS Meeting with the 18th International Meeting on Chemical Sensors (IMCS2020) (May 10-May 14, 2020), Montreal, Canada;

(b39) (Keynote) *2019 Wiley-Guangdong University of Technology International Conference on Energy Chemistry (December 20-December 22, 2019), Guangzhou, P.R. China;*

(b40) (Keynote) 69th Canadian Chemical Engineering Conference (October 20-October 23, 2019), Halifax, Canada;

(b41) (Invited) 2019 Symposium on Energy Materials and Defect Chemistry, Chinese Chemical Society (June 18-June 20, 2019), Changsha, China;

(b42) (Invited) ECS Canadian Section Fall 2018 Meeting (November 10, 2018), Montreal, Canada;

(b43) (Keynote) XXIX International Congress of Chemical Engineering Incorporating the 68th Canadian Chemical Engineering Conference (October 28-October 31, 2018), Toronto, Canada;

(b44) (Invited) The International Conference on Electrochemical Energy Science and Technology (EEST2018) (August 13-August 17, 2018), Niagara Falls, Canada;

(b45) (Invited) 2016 Yuelu Symposium for International Young Scholars (December 25-December 27, 2016), Changsha, P.R. China.

SELECTED JOURNAL PUBLICATIONS *("*" corresponding author)*

- According to the metrics of *Google Scholar* as of September 16. 2025, Dr. Wang has generated a total number of **162** publications in peer-reviewed international journals in the fields of chemistry/chemical engineering, electrochemistry/electrocatalysis, nanotechnology/advanced materials, electrochemical energy storage/conversion.
- Dr. Wang's publications have received over 9,100 citations with an *h-index* of **55**. Over the past 5 years since 2020, his publications have received a total citation of over 6,000 times with an *h-index* of 46.
- Most of Dr. Wang's research works have been published in well recognized and high-impact journals, many of which are even published in leading journals, including *Nature Communications*, *Journal of the American Chemical Society*, *Angewandte Chemie International Edition*, *Advanced Materials*, *Energy and Environmental Science*, *etc*.
- Dr. Wang was invited to contribute research and review papers by many prestigious top-tier journals, including *Chemical Society Reviews* (IF: 46.2), *Electrochemical Energy Reviews* (IF: 31.3), *Advanced Functional Materials* (IF: 19.0), *Nano Energy* (IF: 17.6), *Nano-Micro Letters* (IF: 26.6), *etc*.
- Five of his publications were selected as *ESI Highly Cited Paper* by the *Web of Science* in the top 1% in chemistry, energy, and materials.

Year 2025

(a1) A.K. Vinayak, M. Majid, L. Xia*, **X. Wang***

Critical Review of Acid Leaching for Recovery of Valuable Metals from Spent Lithium-Ion Batteries

Electrochemical Energy Reviews, 2025, accepted.

(a2) Y. Zhang, X. Ma, Q. Tao, X. Yang, X.J. Wang*, **X. Wang***, Qing Zhang*, Zhengyu Bai*

$[Ta_6O_{19}]^{8-}$-mediated Interfacial OH^- Supply for Efficient Seawater Electrolysis

Journal of Colloid and Interface Science, 2025, accepted.

(a3) F. Zhao, W. Shi, C. Liu, R. Zhou, F. Chang*, Qing Zhang, **X. Wang**, Zhengyu Bai*

Octahedral Nanocrystals of PtNiCoMoCu Core/Shell High-Entropy Alloy with Lattice Strain and Low-coordination Sites Enabling CO_2 Pathway of Alcohol Oxidation Reaction

Journal of Colloid and Interface Science, 2025, *700*(3), 138589.

(a4) F. Zhao, Z. Lin, X. Bai, F. Chang*, Qing Zhang*, **X. Wang**, Zhengyu Bai*

Enhanced Electrocatalytic Conversion of CO_2-to-C_{2+} Products via Intermediate Stabilized Cu^+/Cu^0 Interface Catalysts

ACS Sustainable Chemistry & Engineering, 2025, *13*(29), 11503-11513.

(a5) Z. Deng, Z. Gong, M. Gong*, **X. Wang***

Defect Engineering on Commercial Carbon for Economical H_2O_2 Electrosynthesis under Industrial-relevant Conditions

Advanced Functional Materials, 2025, accepted.

(a6) S. Krishnan, M.K. Singh, S. Gupta, K. Singh, **X. Wang***, D.K. Rai*

Improving Synergism in Ni-Prussian Blue Analog/CNT Composite via Coordination Engineering for Highly Stable K^+-Ion Capacitor

Materials Chemistry Frontiers, 2025, *9*(15), 2367-2383.

(a7) Z. Gong, Z. Deng, Y. Wang, C. Li, M. Gong*, **X. Wang***

Atomic Cobalt-Doped Palladium Metallene toward Efficient Oxygen Reduction Electrocatalysis

ACS Applied Materials & Interfaces, 2025, *17*(16), 23809-23816.

(a8) L. Zhang, Y. Liu*, **X. Wang***, Z. Cui, C. Xiao, C. Chen, J. Wang, G. Huang, D. Zhang*, F. Pan*

Deciphering the Interfacial Electrochemistry of Non-nucleophilic $Mg(TFSI)_2$ as 4V-Class Electrolyte for Mg Batteries

Chemical Engineering Journal, 2025, *516*, 162410.

(a9) Y. Chen, Y. Sun, R. Feng, H. Zhang, H. Zeng*, **X. Wang***

Synergy of Strongly Coordinated Salts and Weakly Coordinated Solvents Enables Fast-Kinetics Zinc Metal Batteries

ACS Nano, 2025, *19*(17), 16913-16929.

(a10) Z. Xu, Y. Xu, Y. Qiu, Y. Cao, S. Gasilov, G. Li*, J. Lu*, **X. Wang***

Pressurized Organic Electrodes Enable Practical and Extreme Batteries.

Nature Communications, 2025, *16*, 4561.

(a11) P.-F. Sui, M.-N. Zhu, M.-R. Gao, Y.-C. Wang, R. Feng, **X. Wang***, S. Liu, J.-L. Luo*

Energy-Conservative CO_2 Electroreduction for Efficient Formate Co-Generation.

Applied Catalysis B: Environment and Energy, 2025, *373*, 125355.

(a12) Z. Xu, P. Li, J. Zhao, K. Hu, W. Jia, S. Gasilov, G. Li*, **X. Wang***

A Universal Thick Anode for Aqueous and Seawater Energy Storage Devices

Advanced Materials, 2025, *37*(12), 2416427.

(a13) W. Jia, Z. Xu, Y. Chen, P. Ning*, H. Cao*, **X. Wang***

Synergistic Lewis Acid-Base Pair Electrolyte Configuration Enables Reversible Zinc Anode via Multiple Electrostatic Interactions

Chemical Engineering Journal, 2025, *506*, 160158.

(a14) W. Deng, Z. Deng, X. Zhang, Y. Chen, R. Feng, G. Li*, **X. Wang***

Evolution of Frustrated Coordination in Eutectic Electrolyte Driven by Ligand Asymmetry toward High-Performance Zinc Batteries

Angewandte Chemie International Edition, 2025, *64*(4), e202416482.

(a15) Y. Chen, K. Zhang, Z. Xu, F. Gong, R. Feng, Z. Jin, **X. Wang***

Regulating Interfacial Reaction through Electrolyte Chemistry Enables Anion-rich Interface for Wide-Temperature Zinc Metal Batteries

Energy & Environmental Science, 2025, *18*(2), 713-727.

(a16) Z.M. Li, Z. Deng, Y. Dong, Y. Li, H. Zhang, **X. Wang***, G. Li*

Revealing the Role of 1T- & 2H-MoS_2/Ni_3S_2 Heterojunction for Efficient Overall Water Splitting

Journal of Colloid and Interface Science, 2025, *678*(A), 666-675.

(a17) P.-F. Sui, Y.-C. Wang, **X. Wang***, S. Liu, J.-L. Luo*

Advances in Tandem Strategies for CO_2 Electroreduction: From Electrocatalysts to Reaction System Design

ChemCatChem, 2025, *17*(6), e202401604.

Year 2024

(a18) F. Chang, Z. Lin, Y. Liu, Q. Zhang, **X. Wang**, Z. Bai*

A Derived-Cu Catalyst with A Potential-Driven Interface and Tensile Strain for Enhancing CO_2 Electrocatalytic Reduction

Inorganic Chemistry Frontiers, 2024, *11*(18), 5964-5972.

(a19) M. Majid, Z. Deng, **X. Wang***
Recent Progress towards the Diverse Practical Applications of Lithium-Sulfur Batteries
Nano Energy, 2024, *132*, 110387.

(a20) W. Deng, R. Feng, **X. Wang***
Superhalide Structure and Iodide-Proof Interphase via Electrolyte Regulation Enable Ultrastable Zinc-Iodine Batteries
Energy & Environmental Science, 2025, *17*(22), 8643-8657.

(a21) Z. Deng, S. Jin, M. Gong, N. Chen, W. Chen, M.H. Seo*, **X. Wang***
Potential-Driven Coordination Oxygen Migration in an Electrocatalyst for Sustainable H_2O_2 Synthesis
ACS Nano, 2024, *18*(47), 32834-32846.

(a22) Z. Deng, S.J. Choi, G. Li*, **X. Wang***
Advancing H_2O_2 Electrosynthesis: Enhancing Electrochemical Systems, Unveiling Emerging Applications, and Seizing Opportunities
Chemical Society Reviews, 2024, *53*(16), 8137-8181. (Invited review contribution by the Editor-in-Chief)

(a23) Z. Yu, Z. Deng, Y. Li*, **X. Wang***
Advances in Electrocatalyst Design and Mechanism for Sulfide Oxidation Reaction in Hydrogen Sulfide Splitting
Advanced Functional Materials, 2024, *34*(39), 2403435. (Invited review contribution by the Editor-in-Chief)

(a24) A.K. Vinayak, M. Li, X. Huang, P. Dong, K. Amine*, J. Lu*, **X. Wang***
Circular Economies for Lithium-Ion Batteries and Challenges to Their Implementation
Next Materials, 2024, *5*, 100231. (Invited review contribution by the Editor-in-Chief)

(a25) Y. Dong, Q. Sun, Y. Chen, W. Deng, H. Zhang, H. Zeng, G. Liu*, **X. Wang***
Spontaneous Anode-Molecule Interface Triggers Highly Reversible Zinc Anode
Energy Storage Materials, 2024, *70*, 103465.

(a26) W. Deng, G. Li*, **X. Wang***
Zinc-Ion Battery Chemistries Enabled by Regulating Electrolyte Solvation Structure
Advanced Functional Materials, 2024, *34*(42), 2405012.

(a27) A.K. Vinayak, **X. Wang***
A Green Approach for Cohesive Recycling and Regeneration of Spent Lithium-Ion Battery Electrode Active Materials
The Canadian Journal of Chemical Engineering, 2024, *102*(5), 1852-1862.

(a28) Y. Qin, H. Wang, J. Zhou, R. Li, C. Jiang, Y. Wan, X. Wang, Z. Chen, **X. Wang**, Y. Liu*, B. Guo*, D. Wang*
Binding FSI^- to Construct A Self-Healing SEI Film for Li-Metal Batteries by in situ Crosslinking Vinyl Ionic Liquid
Angewandte Chemie International Edition, 2024, *63*(19), e202402456.
(IF: 16.6 and 2 citation)

(a29) F. Chang, Z. Zhang, Y. Zhang, Y. Liu, L. Yang, Q. Zhang, **X. Wang**, Z. Bai*, Qing Zhang*
Synergistic Modulation of Valence State and Oxygen Vacancy Induced by Surface Reconstruction of CeO_2/CuO Catalyst towards Enhanced Electrochemical CO_2 Reduction
Carbon Energy, 2024, *6*(12), e588.

(a30) Z. Deng, Z. Gong, M. Gong, **X. Wang***
Multiscale Regulation of Ordered PtCu Intermetallic Electrocatalyst for Highly Durable Oxygen Reduction Reaction
Nano Letters, 2024, *24*(13), 3994-4001.

(a31) F. Chang, K. Zhu, C. Liu, J. Wei, S. Yang, Q. Zhang, L. Yang, **X. Wang**, Z. Bai*
Construction of Cu-Ni Atomic Pair with Bimetallic Atom-Cluster Sites for Enhanced CO_2 Electroreduction
Advanced Functional Materials, 2024, *34*(34), 2400893.

(a32) J. Yan*, C. Zhang, Z. Li, F. Liu*, H. Wang, **X. Wang***, L. Wang

Trace Topological Doping Strategy and Deep Learning to Reveal High-Rate Sodium Storage Regulation of Barium Doping $Na_3V_2(PO_4)_3$

Nanoscale, 2024, *16*(9), 4579-4590.

(a33) Z. Deng, A.H. Bagherzadeh, M. Gong, S. Siahrostami*, **X. Wang***

Pd *4d*-orbital Overlapping Modulation on Au@Pd Nanowires for Efficient H_2O_2 Production

Journal of the American Chemical Society, 2024, *146*(4), 2816-2823.

(a34) W. Deng, Z. Deng, Y. Chen, R. Feng, **X. Wang***

Competitive Coordination Structure Regulation in Deep Eutectic Electrolyte for Stable Zinc Batteries

Angewandte Chemie International Edition, 2024, *63*(8), e202316499.

(a35) Y.-C. Wang, P.-F. Sui, C.-Y. Xu, M.-N. Zhu, R. Feng, **X. Wang***, J.-L. Luo*

Optimizing Bi Active Sites by Ce Doping for Boosting Formate-Production in A Wide Potential Window

Inorganic Chemistry Frontiers, 2024, *11*(3), 926-935.

(a36) Y. Chen, Z. Deng, Y. Sun, Y. Li, H. Zhang, G. Li, H. Zeng*, **X. Wang***

Ultrathin Zincophilic Interphase Regulated Electric Double Layer Enabling Highly Stable Aqueous Zinc-Ion Batteries

Nano-Micro Letters, 2024, 16, 96.

(a37) Z. Sun, Y. Wang, L. Yang, J. Liu, H. Qi, Z. Huang*, **X. Wang***

RGO Induced Flower-Like Ni-MOF in-situ Self-Assembled Electrodes for High-Performance Hybrid Supercapacitors

ACS Applied Materials & Interfaces, 2024, *16*(1), 584-593.

(a38) Y. Dong, S. Liu, W. Deng, H. Zhang, G. Liu*, **X. Wang***

Modulating Electronic Structures of Bimetallic Co-Fe Sulfide Ultrathin Nanosheet Supported on g-C_3N_4 Promoting Electrocatalytic Hydrogen Evolution Performance

Journal of Colloid and Interface Science, 2024, *653*(B), 1557-1565.

Year 2023

(a39) Z. Xu, Z. Sun, J. Shan, S. Jin, J. Cui, Z. Deng, M.H. Seo, **X. Wang***

O, N-Enriched, Self-Activated, Holey Carbon Sheets for High-Loading Zinc-Ion Supercapacitors

Advanced Functional Materials, 2023, *34*(14), 2302818.

(a40) S. Krishnan, D.K. Rai*, **X. Wang***

Boosting the Performance of Aqueous Ammonium-Ion Batteries by Mitigating Side Reactions Using Polymer Additive

ACS Applied Polymer Materials, 2023, *5*(11), 9274-9285.

(a41) Z. Sun, M. Zhang, H. Yin, Q. Hu, Z. Huang*, H. Qi, **X. Wang***

Tailoring Hierarchically Porous Structure of Biomass-Derived Carbon for High-Performance Supercapacitors

Renewable Energy, 2023, *219*(1), 119375.

(a42) Y. Dong, Z. Deng, H. Zhang, G. Liu*, **X. Wang***

A Highly Active and Durable Hierarchical Electrocatalyst for Large-Current-Density Water Splitting

Nano Letters, 2023, *23*(19), 9087-9095.

(a43) Z. Xu, Y. Li, G. Li, H. Zhang*, **X. Wang***

Reversible Zinc Powder Anode via Crystal Facet Engineering

Matter, 2023, *6*(9), 3075-3086.

(a44) A. Zaker, S.B. Hammouda, J. Sun, **X. Wang**, X. Li, Z. Chen*

Carbon-based Materials for CO_2 Capture: Their Production, Modification and Performance

Journal of Environmental Chemical Engineering, 2023, *11*(3), 109741.

(a45) Y. Chen, F. Gong, W. Deng, H. Zhang, **X. Wang***

Dual-Function Electrolyte Additive Enabling Simultaneous Electrode Interface and Coordination Environment Regulation for Zinc-Ion Batteries

Energy Storage Materials, 2023, *58*, 20-29.

(a46) Y. Dong, Z. Deng, Z. Xu, G. Liu*, **X. Wang***

Synergistic Tuning of CoO/CoP Heterojunction Nanowire Arrays as Efficient Bifunctional Catalysts for Alkaline Overall Water Splitting

Small Methods, 2023, *7*(7), 2300071.

(a47) W. Deng, Z. Xu, G. Li*, **X. Wang***

Self-Transformation Strategy toward Vanadium Dioxide Cathode for Advanced Aqueous Batteries

Small, 2023, *19*(24), 2207754.

(a48) A.K. Vinayak, Z. Xu, G. Li*, **X. Wang***

Current Trends in Sourcing, Recycling and Regeneration of Spent Lithium-Ion Batteries – A Review

Renewables, 2023, *1*(3), 294-315.

(a49) R. Ma, Z. Xu, **X. Wang***

Polymer Hydrogel Electrolytes for Flexible and Multifunctional Zinc-Ion Batteries and Capacitors

Energy & Environmental Materials, 2023, *6*(5), e12464.

(a50) N. Zhang, W. Deng, Z. Xu, **X. Wang***

Upcycling of Spent $LiCoO_2$ Cathodes via Nickel- and Manganese-Doping

Carbon Energy, 2023, *5*(1), e231.

Year 2022

(a51) N. Zhang, Z. Xu, W. Deng, **X. Wang***

Recycling and Upcycling of Spent LIB Cathodes: A Comprehensive Review

Electrochemical Energy Review, 2022, *5*, 33.

(a52) Z. Deng, M. Gong, Z. Gong, **X. Wang***

Mesoscale Mass Transport Enhancement on Well-defined Porous Carbon Platform for Electrochemical H_2O_2 Synthesis

Nano Letters, 2022, *22*(23), 9551-9558.

(a53) Z. Xu, N. Zhang, **X. Wang***

Upcycling Spent Alkaline Batteries into Rechargeable Zinc-Ion Batteries

Nano Energy, 2022, *102*, 107724.

(a54) J. Zhang, M. Chen*, Y. Si, J. Guo, T. Wu, C. Wang, **X. Wang***

LiPAA with Short-chain Anion Facilitating Li_2S_x ($x \leq 4$) Reduction in Lean-electrolyte Lithium-Sulfur Battery

Energy & Environmental Materials, 2022, *5*(3), 877-882.

(a55) W. Deng, Z. Xu, **X. Wang***

High-Donor Electrolyte Additive Enabling Stable Aqueous Zinc-Ion Batteries

Energy Storage Materials, 2022, *52*, 52-60.

(a56) F. Chang, Y. Liu, L. Yang, Q. Zhang, J. Wei, **X. Wang**, Z. Bai*

Modulating Intrinsic Properties of Platinum-Cobalt Nanowires for Enhanced Intrinsic Electrocatalysis

New Journal of Chemistry, 2022, *46*(17), 8122-8130.

(a57) Z. Xu, M. Li, W. Sun, T. Tang, J. Lu*, **X. Wang***

An Ultrafast, Durable, and High-Loading Polymer Anode for Aqueous Zinc-Ion Batteries and Supercapacitors

Advanced Materials, 2022, *34*(23), 2200077.

(a58) Z. Deng, **X. Wang***

Mechanism Investigation of Enhanced Electrochemical H_2O_2 Production Performance on Oxygen-rich Hollow Porous Carbon Spheres

Nano Research, 2022, *15*(5), 4599-4605.

(a59) Z. Xu, S. Jin, N. Zhang, W. Deng, M.H. Seo, **X. Wang***
Efficient Zn Metal Anode Enabled by O, N-Codoped Carbon Microflowers
Nano Letters, 2022, *22*(3), 1350-1357.

(a60) L. Chen, W. Deng, Z. Chen, **X. Wang***
Hetero-Architectured Core-Shell $NiMoO_4$@Ni_9S_8/MoS_2 Nanorods Enabling High-Performance Supercapacitors
Journal of Materials Research, 2022, *37*, 284-293.

(a61) Z. Xu, R. Ma, **X. Wang***
Ultrafast, Long-life, High-loading, and Wide-temperature Zinc Ion Supercapacitors
Energy Storage Materials, 2022, *46*, 233-242.

(a62) W. Deng, **X. Wang***
Designing Gradient Solid Electrolyte Interphase for Stable Lithium Metal Batteries
Green Energy & Environment, 2022, *7*(6), 1129-1131.

(a63) Z. Deng, Z. Xu, W. Deng, **X. Wang***
Ultrafine $Li_4Ti_5O_{12}$ Nanocrystals as Building Blocks for Ultrahigh-Power Lithium-Ion Battery Anodes
Journal of Power Sources, 2022, *521*, 230970.

(a64) W. Deng, N. Zhang, **X. Wang***
Hybrid Interlayer Enables Dendrite-Free and Deposition-Modulated Zinc Anodes
Chemical Engineering Journal, 2022, *432*, 14378.

(a65) F. Chang, Y. Liu, Q. Zhang, Z. Jia, **X. Wang**, L. Yang*, Z. Bai*
Regulating the Lattice Strain of Platinum-Copper Catalysts for Enhancing Collaborative Electrocatalysis
Inorganic Chemistry Frontiers, 2022, *9*(2), 249-258.

(a66) M. Ge, X. Zhou, Y. Qin, Y. Liu*, J. Zhou, **X. Wang***, B. Guo*
A Composite PEO Electrolyte with Amide-based Polymer Matrix for Suppressing Lithium Dendrite Growth in All-Solid-State Lithium Battery
Chinese Chemical Letters, 2022, *33*(8), 3894-3898.

(a67) Z. Deng, W. Pang, Z. Jin, **X. Wang***
Revealing the Role of Mo Doping in Promoting the Oxygen Reduction Reaction Performance of Pt_3Co Nanowires
Journal of Energy Chemistry, 2022, *66*, 16-23.

Year 2021

(a68) F. Chang, J. Wei, Q. Zhang, Z. Jia, Y. Liu, L. Yang*, **X. Wang**, Z. Bai*
Modulating the Multiple Intrinsic Properties of Platinum-Iron Alloy Nanowires towards Enhancing Collaborative Electrocatalysis
Materials Chemistry Frontiers, 2021, *5*(23), 8118-8126.

(a69) L. Chen, Z. Deng, Z. Chen, **X. Wang***
Building Ni_9S_8/MoS_2 Nanosheets Decorated $NiMoO_4$ Nanorods Heterostructure for Enhanced Water Splitting
Advanced Materials Interfaces, 2021, *8*(21), 2101483.

(a70) W. Deng, Z. Xu, Z. Deng, **X. Wang***
Enhanced Polysulfides Regulation via Honeycomb-Like Carbon with Catalytic MoC for Lithium-Sulfur Batteries
Journal of Materials Chemistry A, 2021, *9*(38), 21760-21770. (Selected by the themed collection: *Journal of Materials Chemistry A HOT Papers*)

(a71) Z. Xu, L. Xu, Z. Xu, Z. Deng, **X. Wang***
N, O-codoped Carbon Nanosheet Array Enabling Stable Lithium Metal Anode
Advanced Functional Materials, 2021, *31*(40), 2102354.

(a72) Z. Xu, S. Jin, M.H. Seo*, **X. Wang***
Hierarchical Ni-Mo_2C/N-doped Carbon Mott-Schottky Array for Water Electrolysis

Applied Catalysis B: Environmental, 2021, *292*, 120168.

(a73) Z. Xu, W. Deng, **X. Wang***

3D Hierarchical Carbon-Rich Micro/Nano-Materials for Energy Storage and Catalysis

Electrochemical Energy Reviews, 2021, *4*(2), 269-335.

(a74) L. Chen, Z. Chen, X. Liu, Z. Ye, **X. Wang***

N,S-Codoped Hollow Carbon Dodecahedron/Metal Sulfides Composites Enabling High-Performance Lithium-Ion Intercalation

Electrochemical Science Advances, 2021, *1*(4), e2100001.

(a75) D. You*, J. Lou, X. Li, Y. Zhou, X. Sun, **X. Wang***

Investigation of Advanced Catalytic Effect of Co_3O_4 Nanosheets Modified Carbon Felts as Vanadium Flow Battery Electrodes

Journal of Power Sources, 2021, *494*, 229775.

(a76) W. Deng, J. Phung, G. Li*, **X. Wang***

Realizing High-Performance Lithium-Sulfur Batteries via Rational Design and Engineering Strategies

Nano Energy, 2021, *82*, 105761.

(a77) L. Chen, Z. Chen, X. Liu, **X. Wang***

Bimetallic Metal-Organic Framework Derived Doped Carbon Nanostructures as High-Performance Electrocatalyst towards Oxygen Reactions

Nano Research, 2021, *14*, 1533-1540.

Year 2020

(a78) R. Miao, F. Chang*, M. Ren, X. He, L. Yang*, **X. Wang**, Z. Bai*

Platinum-Palladium Alloy Nanotetrahedra with Tuneable Lattice-Strain for Enhanced Intrinsic Activity

Catalysis Science and Technology, 2020, *10*(18), 6173-6179.

(a79) Q. Zhang, W. Han, Z. Xu, Y. Li, L. Chen, Z. Bai*, L. Yang, **X. Wang***

Hollow Waxberry-Like Cobalt-Nickel Oxide/S,N-Codoped Carbon Nanospheres as A Trifunctional Electrocatalyst for OER, ORR, and HER

RSC Advances, 2020, *10*(46), 27788-27793.

(a80) M. Ren, F. Chang*, R. Miao, X. He, L. Yang*, **X. Wang**, Z. Bai*

Strained Lattice Platinum-Palladium Alloy Nanowires for Efficient Electrocatalysis

Inorganic Chemistry Frontiers, 2020, *7*(8), 1713-1718.

(a81) L. Chen, Z. Xu, W. Han, Q. Zhang, Z. Bai*, Z. Chen, G. Li*, **X. Wang***

Bimetallic CoNi Alloy Nanoparticles Embedded in Pomegranate-Like Nitrogen-Doped Carbon Spheres for Electrocatalytic Oxygen Reduction and Evolution

ACS Applied Nano Materials, 2020, *3*(2), 1354-1362.

(a82) Y.S. Park, M.J. Jang, J. Jeong, S.M. Park, **X. Wang**, M.H. Seo, S.M. Choi*, J. Yang*

Hierarchical Chestnut-Burr Like Structure of Copper Cobalt Oxide Electrocatalyst Directly Grown on Ni Foam for Anion Exchange Membrane Water Electrolysis

ACS Sustainable Chemistry & Engineering, 2020, *8*(6), 2344-2349.

(a83) J.H. Nam, M.H. Jang, H.Y. Jang, W. Park, **X. Wang**, S.M. Choi*, B. Cho, Y. Kim*

Room-Temperature Sputtered Electrocatalyst WSe_2 Nanomaterials for Hydrogen Evolution Reaction

Journal of Energy Chemistry, 2020, *47*, 107-111.

Year 2019

(a84) J. Zhang, J. Zhang, K. Liu, T. Tang, J. Tian, C. Wang, M. Chen*, **X. Wang***

Abundant Defects-induced Interfaces Enabling Effective Anchoring for Polysulfides and Enhanced Kinetics in Lean Electrolyte Lithium-Sulfur Batteries

ACS Applied Materials and Interfaces, 2019, *11*(50), 46767-46775.

(a85) X. Liu, Y. Zhu, N. Liu, M. Chen*, C. Wang, **X. Wang***

Catalytic Synthesis of Hard/Soft Carbon Hybrids with Heteroatom Doping for Enhanced Sodium Storage

ChemistrySelect, 2019, *4*(12), 3551-3558.

(a86) A. Zaker, Z. Chen*, **X. Wang**, Q. Zhang

Microwave-assisted pyrolysis of sewage sludge: A review

Fuel Processing Technology, 2019, *187*, 84-104.

(a87) S. Hemmati, G. Li, **X. Wang**, Y. Ding, Y. Pei, A. Yu, Z. Chen*

3D N-doped Hybrid Architectures Assembled from 0D T-Nb_2O_5 Embedded in Carbon Microtubes toward High-Rate Li-ion Capacitors

Nano Energy, 2019, *56*, 118-126.

Year 2018

(a88) M. Li, Y. Zhang, Z. Bai*, W. Liu, T. Liu, J. Gim, G. Jiang, Y. Yuan, D. Luo, K. Feng, R.S. Yassar, **X. Wang**, Z. Chen*, J. Lu*

A Lithium-Sulfur Battery Using A 2D Current Collector Architecture with A Large-Sized Sulfur Host Operated under High Areal Loading and Low E/S Ratio

Advanced Materials, 2018, 30(46), 1804271.

(a89) M.H. Seo, M.G. Park, D.U. Lee, **X. Wang**, W. Ahn, S.H. Noh, S.M. Choi, Z.P. Cano, B. Han, Z. Chen*

Bifunctionally Active and Durable Hierarchically Porous Transition Metal-Based Hybrid Electrocatalyst for Rechargeable Metal-Air Batteries

Applied Catalysis B: Environmental, 2018, 239, 677-687.

(a90) W. Lei, Y. Deng, G. Li, Z. Cano, **X. Wang**, D. Luo, Y. Liu, D. Wang*, Z. Chen*

Two-Dimensional Phosphorus Doped Carbon Nansheets with Tunable Porosity for Oxygen Reactions in Zinc-Air Battery

ACS Catalysis, 2018, 8(3), 2464-2472.

(a91) G. Li[§], **X. Wang**[§], M.H. Seo, M. Li, L. Ma, Y. Yuan, T. Wu, A. Yu, S. Wang*, J. Lu*, Z. Chen*

Chemisorption of Lithium Polysulfides through Redox Reactions with Organic Molecules for Lithium-Sulfur Batteries

Nature Communications, 2018, 9, 705.

Year 2017

(a92) D. Luo, Y. Deng, **X. Wang**, G. Li, J. Wu, J. Fu, W. Lei, R. Liang, Y. Liu, Y. Ding, A. Yu, Z. Chen*

Tuning Shell Numbers of Transition Metal Oxide Hollow Microspheres towards Durable and Superior Lithium Storage

ACS Nano, 2007, 11(11), 11521-11530.

(a93) X. Fu, F. Hassan, P. Zamani, G. Jiang, D.C. Higgins, J.Y. Choi, **X. Wang**, P. Xu, Y. Liu, Z. Chen*

Engineered Architecture of Nitrogenous Graphene Encapsulating Porous Carbon with Nano-Channel Reactors Enhancing the PEM Fuel Cell Performance

Nano Energy, 2017, 42, 249-256.

(a94) M. Li, Y. Zhang, F. Hassan, W. Ahn, **X. Wang**, W. Liu, G. Jiang, Z. Chen*

Compact High Volumetric and Areal Capacity Lithium Sulfur Batteries through Rock Salt Induced Nano-Architectured Sulfur Hosts

Journal of Materials Chemistry A, 2017, 5(40), 21435-21441.

(a95) G. Li, D. Luo, **X. Wang***, M.H. Seo, A. Yu, Z. Chen*

Enhanced Reversible Sodium-Ion Intercalation by Synergistic Coupling of Few-Layered MoS_2 and S-doped Graphene

Advanced Functional Materials, 2017, 27(40), 1702562.

(a96) G. Li, **X. Wang***, M.H. Seo, S. Hemmati, A. Yu, Z. Chen*

Design of Ultralong Single-Crystal Nanowire-Based Bifunctional Electrode for Efficient Oxygen and Hydrogen Evolution in A Mild Alkaline Electrolyte

Journal of Materials Chemistry A, 2017, 5(22), 10895-10901.

Prior to UofA and Concordia

1. **X. Wang**, G. Li, M.H. Seo, G. Lui, F. Hassan, K. Feng, X. Xiao*, Z. Chen*; "Carbon-Coated Silicon Nanowires on Carbon Fabric as Self-Supported Electrodes for Flexible Lithium-Ion Batteries", ACS Applied Materials and Interfaces, Vol. 9, Issue 11, pp. 9551-9558, November 2017. (IF: 9.229 and 89 citations)
2. M. Li, Y. Zhang, **X. Wang**, W. Ahn, G. Jiang, G. Lui, Z. Chen*; "Gas Pickering Emulsion Templated Hollow Carbon for High Rate Performance Lithium Sulfur Batteries", Advanced Functional Materials, Vol. 26, Issue 46, pp. 8408-8417, December 2016. (IF: 18.808 and 96 citations)
3. **X. Wang**, G. Li, J. Li, Y. Zhang, W. Ahn, A. Yu, Z. Chen*; "Structural and Chemical Synergistic Encapsulation of Polysulfides Enables Ultralong-Life Lithium-Sulfur Batteries", Energy & Environmental Science, Vol. 9, pp. 2533-2538, April 2016. (IF: 38.532 and 312 citations)
4. G. Li[§], **X. Wang**[§], Y. Zhang, Z. Chen*; "Pomegranate-Inspired Rational Design of Highly Active and Durable Bifunctional Electrocatalysts for Rechargeable Metal-Air Batteries", Angewandte Chemie International Edition, Vol. 55, Issue 16, pp. 4977-4982, April 2016. (IF: 15.336 and 231 citations)
5. X. Fan[§], **X. Wang**[§], G. Li, A. Yu, Z. Chen*; "High-Performance Flexible Electrodes Based on Electrodeposited Polypyrrole/MnO_2 on Carbon Cloth for Low-Cost Supercapacitors", Journal of Power Sources, Vol. 326, pp. 357-364, September 2016. (IF: 9.127 and 70 citations)
6. G. Lui, G. Li, **X. Wang**, A. Yu, Z. Chen*; "Flexible, Three-Dimensional Ordered Macroporous TiO_2 Electrode with Enhanced Electrode-Electrolyte Interaction in High-Power Li-Ion Batteries", Nano Energy, Vol. 24, pp. 72-77, June 2016. (IF: 19.069 and 80 citations)
7. W. Ahn, M.H. Seo, Y.S. Jun, D.U. Lee, **X. Wang**, A. Yu, Z. Chen*; "Sulfur Nanogranular Film-Coated Three-Dimensional Graphene Sponge-Based High Power Lithium Sulfur Battery", ACS Applied Materials and Interfaces, Vol. 8, Issue 3, pp. 1984-1991, January 2016. (IF: 9.229 and 70 citations)
8. K. Feng, W. Ahn, G. Lui, H.W. Park, A.G. Kashkooli, G. Jiang, **X. Wang**, Z. Chen*; "Implementing An in-situ Carbon Network in Si/Reduced Graphene Oxide for High Performance Lithium-Ion Battery Anodes", Nano Energy, Vol. 19, pp. 187-197, January 2016. (IF: 19.069 and 140 citations)
9. **X. Wang**, G. Li, M.H. Seo, F. Hassan, M.A. Hoque, Z. Chen*; "Sulfur Atoms Bridging Few-layered MoS_2 with S-doped Graphene Enables Highly Robust Anode for Lithium-ion Batteries", Advanced Energy Materials, Vol. 5, Issue 23, No. 1501106, September 2015. (IF: 29.368 and 164 citations)
10. **X. Wang**, G. Li, F. Hassan, J. Li, X. Fan, R. Batmaz, X. Xiao, Z. Chen*; "Sulfur Covalently Bonded Graphene with Large Capacity and High Rate for High-Performance Sodium-ion Batteries Anodes", Nano Energy, Vol. 15, pp. 746-754, July 2015. (IF: 19.069 and 157 citations)
11. **X. Wang**, X. Fan, G. Li, M. Li, X. Xiao, A. Yu*, Z. Chen*; "Composites of MnO_2 Nanocrystals/Partially Graphitized Hierarchically Porous Carbon Spheres with Enhanced Rate Capability for High-performance Supercapacitors", Carbon, Vol. 93, pp. 258-265, November 2015. (IF: 9.594 and 51 citations)
12. **X. Wang**, G. Li, F. Hassan, M. Li, K. Feng, X. Xiao*, Z. Chen*; "Building Sponge-like Robust Architecture of CNT-Graphene-Si Composites with Enhanced Rate and Cycling Performance for Lithium-Ion Batteries", Journal of Materials Chemistry A, Vol. 3, pp. 3962-3967, January 2015. (IF: 12.732 and 48 citations)
13. **X. Wang**, G. Li, F. Hassan, R. Batmaz, X. Xiao*, A. Yu*; "Fast Lithium-ion Storage of Nb_2O_5 Nanocrystals in-situ Grown on Carbon Nanotube for High-performance Asymmetric Supercapacitors", RSC Advances, Vol. 5, pp. 41179-41185, April 2015. (IF: 3.361 and 48 citations)
14. G. Li, **X. Wang**, F. Hassan, M. Li, R. Batmaz, X. Xiao*, A. Yu*; "Vanadium Pentoxide Nanorods Anchored to and Wrapped with Graphene Nanosheets for High-Performance Asymmetric Supercapacitors", ChemElectroChem, Vol. 2, Issue 9, pp. 1264-1269, April 2015. (IF: 4.590 and 29 citations)
15. F. Hassan, R. Batmaz, J. Li, **X. Wang**, A. Yu, X. Xiao*, Z. Chen*; "Evidence of Covalent Synergy in Silicon-Sulfur-Graphene Yielding Highly Efficient and Long-Life Lithium-ion Battery", Nature Communications, Vol. 6, No. 8597, October 2015. (IF: 14.92 and 153 citations)

16. D.U. Lee, M.G. Park, H.W. Park, M.H. Seo, **X. Wang**, Z. Chen*; "Highly Active and Durable Nanocrystals-Decorated Bifunctional Electrocatalyst for Rechargeable Zinc-Air Batteries", ChemSusChem, Vol. 8, Issue 18, pp. 3129-3138, August 2015. (IF: 8.928 and 59 citations)
17. J. Yan, G. Lui, R. Tjandra, **X. Wang**, L. Rasenthiram, A. Yu*; "α-NiS Grown on Reduced Graphene Oxide and Single-Wall Carbon Nanotubes as Electrode Materials for High-Power Supercapacitors", RSC Advances, Vol. 5, pp. 27940-27945, March 2015. (IF: 3.361 and 22 citations)
18. C. Lei, Z. Chen, H. Sohn, **X. Wang**, D. Weng, M. Shen*, Y. Lu*; "Better Lithium-Ion Storage Materials Made through Hierarchical Assemblies of Active Nanorods and Nanocrystals", Journal of Materials Chemistry A, Vol. 2, pp. 17536-17544, September 2014. (IF: 12.732 and 16 citations)
19. K. Feng, H.W. Park, **X. Wang**, D.U. Lee, Z. Chen*; "High Performance Porous Anode Based on Template-Free Synthesis of Co_3O_4 Nanowires for Lithium-Ion Batteries", Electrochimica Acta, Vol. 109, pp. 145-151, July 2014. (IF: 6.901 and 43 citations)
20. Z. Chen, Y. Yuan, H. Zhou, **X. Wang**, Z. Gan, F. Wang*, Y. Lu*; "3D Nanocomposite Architectures from Carbon-Nanotube-Threaded Nanocrystals for High-Performance Electrochemical Energy Storage", Advanced Materials, Vol. 36, Issue 2, pp. 339-345, January 2014. (IF: 30.849 and 136 citations)
21. G. Li, **X. Wang***, X. Ma; "Nb_2O_5-Carbon Core-Shell Nanocomposite as Anode Material for Lithium Ion Battery", Journal of Energy Chemistry, Vol. 22, Issue 3, pp. 357-362, June 2013. (IF: 9.676 and 70 citations)
22. G. Li, **X. Wang***, X. Ma*; "Tetragonal $VNb_9O_{24.9}$-based Nanorods: A Novel Form of Lithium Battery Anode with Superior Cyclability", Journal of Materials Chemistry A, Vol. 1, pp. 12409-12421, August 2013. (IF: 12.732 and 25 citations)
23. G. Li, **X. Wang**, Z. Chen, X. Ma*, Y. Lu*; "Characterization of Niobium and Vanadium Oxide Nanocomposites with Improved Rate Performance and Cycling Stability", Electrochimica Acta, Vol. 102, pp. 351-357, April 2013. (IF: 6.901 and 24 citations)
24. X. Jia, Z. Chen, X. Cui, Y. Peng, **X. Wang**, G. Wang*, F. Wei*, Y. Lu*; "Building Robust Architectures of Carbon and Metal Oxide Nanocrystals towards High-Performance Anodes for Lithium-Ion Batteries", ACS Nano, Vol. 6, Issue 11, pp. 9911-9919, October 2012. (IF: 15.881 and 178 citations)
25. Z. Chen, D. Zhang, **X. Wang**, X. Jia, F. Wei, H. Li*, Y. Lu*; "High-Performance Energy Storage Architectures from Carbon Nanotubes and Nanocrystal Building Blocks", Advanced Materials, Vol. 24, Issue 15, pp. 2030-2036, March 2012. (IF: 30.849 and 119 citations)
26. Z. Chen, D. Weng, **X. Wang**, Y. Cheng, G. Wang*, Y. Lu*; "Ready Fabrication of Thin-film Electrodes from Building Nanocrystals for Micro-Supercapacitors", Chemical Communications, Vol. 48, pp. 3736-3738, March 2012. (IF: 6.222 and 17 citations)
27. X. Jia, Z. Chen, A. Suwarnasarn, L. Rice, **X. Wang**, H. Sohn, Q. Zhang, B.M. Wu, F. Wei*, Y. Lu*; "High-Performance Flexible Lithium-Ion Electrodes based on Robust Network Architecture", Energy & Environmental Science, Vol. 5, pp. 6845-6849, February 2012. (IF: 38.532 and 165 citations)
28. **X. Wang**, G. Li, Z. Chen, V. Augustyn, X. Ma, G. Wang, B. Dunn, Y. Lu*; "High-Performance Supercapacitors Based on CNT/Nb_2O_5 Nanocomposites", Advanced Energy Materials, Vol. 1, Issue 6, pp. 1089-1093, October 2011. (IF: 29.368 and 327 citations)
29. **X. Wang**, D. Pan, D. Weng, C.Y. Low, L. Rice, J. Han*, Y. Lu*; "A General Synthesis of Cu−In−S Based Multicomponent Solid-Solution Nanocrystals with Tunable Band Gap, Size, and Structure", The Journal of Physical Chemistry C, Vol. 114, Issue 41, pp. 17293-17297, September 2010. (IF: 4.126 and 71 citations)
30. Z. Chen, Y. Qin, D. Weng, Q. Xiao, **X. Wang**, H. Li*, F. Wei*, Y. Lu*; "Design and Synthesis of Hierarchical Nanowire Composites for Electrochemical Energy Storage", Advanced Functional Materials, Vol. 19, Issue 21, pp. 3420-3426, October 2009. (IF: 18.808 and 452 citations)
31. D. Pan, **X. Wang**, Z.H. Zhou, W. Chen, C. Xu*, Y. Lu*; "Synthesis of Quaternary Semiconductor Nanocrystals with Tunable Band Gaps", Chemistry of Materials, Vol. 21, Issue 12, pp. 2489-2493, May 2009. (IF: 9.811 and 109 citations)
32. D. Pan, D. Weng, **X. Wang**, Q. Xiao, W. Chen, C. Xu*, Z. Yang*, Y. Lu*; "Alloyed Semiconductor Nanocrystals with Broad Tunable Bandgaps", Chemical Communications, pp. 4221-4223, June 2009. (IF: 6.222 and 80 citations)
33. **X. Wang**, J. Han*, H. Wang; "", Journal of Chemical Industry and Engineering, Vol. 58, Issue 12, No. 3082, 2007. (1 citation)

34. W. Mao, **X. Wang**, H. Wang, H. Chang, X. Zhang, J. Han*; “”, Chemical Engineering and Processing: Process Intensification, Vol. 47, Issue 5, pp. 761-769, February 2007. (IF: 4.237 and 42 citations)