

Wenjia Xu

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Google Scholar: <https://scholar.google.com/citations?user=HQHlgC8AAAAJ&hl=zh-CN&oi=ao>

EDUCATION BACKGROUND

<i>PhD Student, University of California, Los Angeles</i>	<i>Sep. 2023-Current</i>
<i>Visiting Student, Swinburne University of Technology</i>	<i>Autumn Semester, 2019</i>
<i>Master of Material Processing Engineering, Qingdao University</i>	<i>Sep. 2017-Jun. 2020</i>
<i>Bachelor of Composite Materials and Engineering, Qingdao University</i>	<i>Sep. 2013-Jun. 2017</i>

RESEARCH EXPERIENCE

<i>Graduate Student Researcher, University of California, Los Angeles</i>	<i>Sep. 2023-Present</i>
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Advisor: Prof. Philippe Sautet

Currently employ advanced global optimization algorithms to computationally predict the most stable atomic configurations of amorphous metal sulfides, focusing on their structural evolution and electronic properties during lithiation.

<i>Visiting Student, Swinburne University of Technology</i>	<i>Autumn Semester, 2019</i>
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Advisor: Prof. Chenchua Sun

Investigated the catalytic mechanisms of single-metal atoms on bilayer structures for nitrogen reduction reactions (NRR), using DFT calculations to analyze electronic properties and reaction pathways, focusing on the role of bilayer architectures in enhancing catalytic performance.

<i>Master's Student, Qingdao University</i>	<i>Sep. 2017-Jun. 2020</i>
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Advisor: Prof. Jin Sun and Prof. Dongjiang Yang

Synthesized functionalized carbon-based materials and conducted theoretical calculations to explore the mechanisms, with a focus on doping and defect engineering for enhanced energy storage performance.

<i>Undergraduate Student, Qingdao University</i>	<i>Feb. 2017-Jun. 2017</i>
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Advisor: Prof. Dongjiang Yang

Synthesized nitrogen and phosphorus co-doped carbon materials and investigated their applications in supercapacitors.

WORK EXPERIENCE

<i>Part-time Simulation Engineer, Shiyanjia Lab</i>	<i>Jun. 2021-Aug. 2021</i>
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Responsible for Solving Simulation Problems for Customers:

- Providing technical consultation on theoretical simulations.
- Designing and implementing theoretical simulation strategies and workflows.
- Analyzing results and preparing reports on theoretical modeling and calculations.

<i>Simulation Engineer, Phad Calculation, Chengdu</i>	<i>Sep. 2021-Jun. 2022</i>
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Solving Simulation Problems for Customers:

- Providing technical consultation on theoretical modeling and calculations for experimental research.
- Designing and implementing schemes for theoretical modeling and calculations.
- Analyzing results and preparing reports on theoretical modeling and calculations.
- Verifying the accuracy of calculation results provided by part-time engineers.
- Preparing modeling and calculation schemes, along with corresponding quotations.

Managing the Company's WeChat Official Account:

- Writing and creating engaging content for the official account.
- Coordinating with external contributors for content submission.
- Performing content typesetting and proofreading.
- Publicizing and promoting articles to maximize visibility and engagement.

Translation Tasks:

- Translating content for corporate brochures and the company website.

Simulation Engineer (Team Lead), Phad Calculation, Chengdu

Jun. 2022-Feb. 2023

Solving theoretical modeling and calculation problems for customers.

Implementing management-assigned tasks, coordinating departmental workflows, and reporting results.

Providing modeling and calculation tutorials and organizing team training sessions.

PUBLICATIONS

- [1] **W. J. Xu**, C. X. Lv, Y. H. Zou, J. Ren, X. L. She, Y. K. Zhu, Y. F. Zhang, S. Chen, X. F. Yang, J. Sun and D. J. Yang, Mechanistic insight into high-efficiency sodium storage based on N/O/P-functionalized ultrathin carbon nanosheet, *J. Power Sources* 442 (2019) 227184-227192, Journal Article.
- [2] Z. C. Wang, **W. J. Xu**, X. K. Chen, Y. H. Peng, Y. Y. Song, C. X. Lv, H. L. Liu, J. W. Sun, D. Yuan, X. Y. Li, X. X. Guo, D. J. Yang, L. X. Zhang, Defect-rich nitrogen doped $\text{Co}_3\text{O}_4/\text{C}$ porous nanocubes enable high-efficiency bifunctional oxygen electrocatalysis, *Adv. Funct. Mater.* 29 (2019) 1902875-1902885, Journal Article.
- [3] J. W. Sun, **W. J. Xu**, C. X. Lv, L. J. Zhang, M. Shakouri, Y. H. Peng, Q. Q. Wang, X. F. Yang, D. Yuan, M. H. Huang, Y. F. Hu, D. J. Yang, L. X. Zhang, Co/MoN hetero-interface nanoflake array with enhanced water dissociation capability achieves the Pt-like hydrogen evolution catalytic performance, *Appl. Catal. B* 286 (2021) 119882-119889, Journal Article.
- [4] C. X. Lv, **W. J. Xu**, H. L. Liu, L. X. Zhang, S. Chen, X. F. Yang, X. J. Xu, D. J. Yang, 3D sulfur and nitrogen codoped carbon nanofiber aerogels with optimized electronic structure and enlarged interlayer spacing boost potassium-ion storage, *Small* 15 (2019) 1900816-1900824, Journal Article.
- [5] R. Q. Guo, C. X. Lv, **W. J. Xu**, J. W. Sun, Y. K. Zhu, X. F. Yang, J. Z. Li, J. Sun, L. X. Zhang, D. J. Yang, Effect of intrinsic defects of carbon materials on the sodium storage performance, *Adv. Energy. Mater.* 10 (2020) 1903652-1903659, Journal Article.
- [6] T. T. Ye, Y. H. Zou, **W. J. Xu**, T. R. Zhan, J. Sun, Y. Z. Xia, X. L. Zhang, D. J. Yang, Poorly-crystallized poly (vinyl alcohol) /carrageenan matrix: highly ionic conductive and flame-retardant gel polymer electrolytes for safe and flexible solid-state supercapacitors, *J. Power Sources* 475 (2020) 228688-228696, Journal Article.
- [7] X. K. Chen, L. J. Zhang, **W. J. Xu**, X. Ding, S. Chen, X. L. She, X. X. Guo, C. L. Dong, Yucheng Huang, L. X. Zhang, S. H. Shen, D. J. Yang, Biochar aerogel decorated with thiophene S manipulated 5-membered rings boosts nitrogen fixation, *Appl. Catal. B* 313 (2022) 121425-121433, Journal Article.
- [8] D. H. Li, B. B. Wang, X. J. Long, **W. J. Xu**, Y. Z. Xia, D. J. Yang, X. D. Yao, Controlled asymmetric charge distribution of active centers in conjugated polymers for oxygen reduction, *Angew. Chem. Int. Ed.* 60 (2021) 26483-26488, Journal Article.
- [9] C. X. Lv, Y. K. Zhu, W. Zhang, **W. J. Xu**, J. Ren, H. W. Liu, X. F. Yang, R. S. Cai, J. Sun, D. H. Li, D. J. Yang, Interfacial enhancement of O^* protonation on $\text{Fe}_2\text{N}/\text{Fe}_3\text{C}$ nanoparticles to boost oxygen reduction reaction and fuel cell in acidic electrolyte, *Mater. Today Energy* 21 (2021) 100834-100840, Journal Article.
- [10] H. W. Zhang, D. Y. Zhang, J. Wang, **W. J. Xu**, D. J. Yang, T. T. Jiao, W. R. Zhang, P. Liang, Simultaneous removal of Hg^0 and H_2S at a high space velocity by water-resistant SnO_2 /carbon aerogel, *J. Hazard. Mater.* 371 (2019) 123-129, Journal Article.
- [11] Y. H. Zou, W. Zhang, N. Chen, S. Chen, **W. J. Xu**, R. S. Cai, C. L. Brown, D. J. Yang, X. D. Yao, Generating oxygen vacancies in MnO hexagonal sheets for ultralong life lithium storage with high capacity, *ACS Nano* 13 (2019) 2062-2071, Journal Article.
- [12] X. J. Long, D. H. Li, B. B. Wang, Z. J. Jiang, **W. J. Xu**, B. B. Wang, Y. Z. Xia, D. J. Yang, Hetero-cyclization strategy for construction of linear conjugated polymers: efficient metal-free electrocatalysts for oxygen reduction, *Angew. Chem. Int. Ed.* 58 (2019) 1-6, Journal Article.
- [13] X. C. Yan, H. L. Liu, Y. Jia, L. Z. Zhang, **W. J. Xu**, X. Wang, J. Chen, D. J. Yang, X. D. Yao, Clarifying the origin of oxygen reduction activity in heteroatom-modified defective carbon, *Cell Rep. Phys. Sci.* 1 (2020) 100083-100093, Journal Article.
- [14] X. Wang, L. Z. Zhuang, Y. Jia, L. J. Zhang, Q. Yang, **W. J. Xu**, D. J. Yang, X. C. Yan, L. Z. Zhang, Z. H. Zhu, C. Brown, P. Yuan, X. D. Yao, One-step in-situ synthesis of vacancy-rich CoFe_2O_4 @defective graphene hybrids as bifunctional oxygen electrocatalysts for rechargeable Zn-air batteries, *Chem Res Chin Univ* 36 (2020), 479-487, Journal Article.