Shuoren LI

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Education

The Hong Kong University of Science and Technology (Guangzhou) 2023 Sept - 2025 Jun (Expected)
MPhil in Sustainable Energy and Environment (SEE) GPA: 3.88/4.30

Anhui Polytechnic Universit 2019 Sept - 2023 Jun
BS in Applied Chemistry (Top-class) Average Grades: 83.17/100 GPA: 3.22/4.0

Academic focus / background:
localized surface plasmon resonance, nanoelectronics, photoelectrochemical, perovskite, solar cell

ORCID:0000-0002-1655-3836 Google Scholar: Shuoren Li - Google Scholar
Research ID: JAO-3369-2023 Scopus: 57222258499

Publication

Shuoren Li, Hao Wu*, Chang Yan*. Perovskite materials for highly efficient Photo(electro)catalytic water splitting: A mini-review. ***Nano Materials Science***, (2024) In Press, Corrected Proof.

Shuoren Li, Ping Ge, Tianxiang Hang, Hui Zhou, Feifei Guo, Yueyue Wu, Chuanping Li*. Defect-Engineered Plasmonic Z-Scheme Heterostructures for Superior Photoelectrochemical Water Splitting. ***Applied Surface Science***, 610, (2023), 155454.

Shuoren Li, Rui Wu, Xingxing Meng, Leilei Diao, Jing Wang, Chuanping Li*. Metal-Organic Framework-Derived Sugarcoated Haws-like AgNWs/ZIF-8/Pd for Plasmon-Promoted Photocatalytic Hydrogenation. Preprint. arXiv:2408.02356.

Chuanping Li*, **Shuoren Li**, Chen Xu and Kongshuo Ma. Plasmon-enhanced unidirectional charge transfer for efficient solar water oxidation, ***Nanoscale***, 2021, 13(8), 4654-4659. **(Student first author)**

Chuanping Li, **Shuoren Li**, Tianxiang Hang, Feifei Guo, Xiandong Zhu*, Tianfu Liu*. Metal-Organic Frameworks Derived Plasmonic Catalyst with Full Spectral Response for Photoelectrochemical Water Splitting Enhancement, ***Small Structures***, 2021, 2100071. (Back Cover:10.1002/sstr.202270020) **(Student first author)**

Tianxiang Hang, Chuanping Li*, Dandan Liang, **Shuoren Li**, Hui Zhou, Ping Ge, Xian-Dong Zhu* and Tian-Fu Liu. Metal-Organic Frameworks-based Hierarchical Heterojunction Coupling with Plasmonic Nanoshells for Self-Powered Photoelectrochemical Immunoassay. ***Chemical Engineering Journal***, 431, 2022), 133465.

Hui Zhou, Xian-Dong Zhu*; Ping Ge; Tianxiang Hang; **Shuoren Li**; Feifei Guo; Yueyue Wu Chuanping Li*. Synergistic Coupling of Surface Plasmon Resonance with Metal-Organic Frameworks based Biomimetic Z-Scheme Catalyst for Enhanced Photoelectrochemical Water Splitting. ***Applied Surface Science***, 605, (2022), 154693.

Ping Ge, Tianxiang Hang, Yueyue Wu, **Shuoren Li**, Xingxing Meng, Chuanping Li*. MOFs-Derived Co3S4/NiS Co-Doped Heterostructures: Towards Simultaneous Acceleration of Charge Carrier Separation and Catalytic Kinetics. ***ACS Applied Energy Materials***, 2023, 6, 1, 278-284.

Chuanping Li*, Tianxiang Hang, Hui Zhou, Ping Ge, **Shuoren Li**, Xian-Dong Zhu*. Engineering Non-Noble Plasmonic Center in MOF-Derived Z-Scheme Heterojunctions for Enhanced Photoelectrochemical Water Splitting. ***Inorganic Chemistry Frontiers***, 2023, 10, 3375-3382.

Sihao Huang[#], Bin Han[#], **Shuoren Li**, Shuyan Chen, Chang Yan*. Polymerization-enhanced flexible perovskite solar cells: mini-review. Under Review.

Research Experience

The Hong Kong University of Science and Technology (Guangzhou) 2023 Sept - 2025 Jun (Expected)
Function Hub - Sustainable Energy and Environment Trust
Supervisor: ***A.P. Chang YAN*** Co-supervisor*:* ***A.P. Teng ZHOU***
RBM Project Supervisor: ***Dr. Xiaoyan WANG***

- Group Project: Turning Sunlight into Fuel ("solarfuel")
- Individual Project: Advanced Photovoltaic Materials for Superior Photoelectrochemical Solar Fuel Conversion

Wilson Tang Brilliant Energy Science and Technology Theme-Based Lab (BEST Lab)
Laboratory for Future Ultra-efficient Solar Energy Conversion

- High efficiency MOF on MOF photocatalytic CO_2 conversion system
- Organic-inorganic perovskite solar cell tandem system for photoelectrochemical water splitting system
- CIGS/CZTS-based high efficiency water splitting system

Anhui Polytechnic University 2020 Jun – 2023 Jun
Construction of efficient photoelectrocatalytic system *Team leader of undergraduate*
Supervisor: ***Prof. Chuanping Li***

- Study on the ultra-sensitive detection of ascorbic acid by Au nanoshells
- The preparation of Ag/Au bimetallic nanoshells and enhanced methanol oxidation catalysis

Westlake University 2022 Jun - Jul
Laboratory of Nanosynthesis *Visiting student*
Supervisor: ***Prof. Hongyu CHEN***

- Learn the synthesis mechanism of common nanomaterials such as ultra-fine Au nanowire, Ag nanocube, Au nanosheet, etc.
- Enhance the ability to think about the process of nanomaterial synthesis research
- Trained in communication skills from an academic perspective

National Innovation Training Program for College Students, China 2021 Sept - 2022 Sept
Construction of new heterogeneous nanostructures *Team Leader of Training program*

- Understanding the formation and mechanism of binary/ternary hetero-nanostructures
- Precise tuning of catalyst band structure for high-level separation and transport of charges
- Attempts to explain the intrinsic mechanism of the synergistic enhancement of hetero-nanostructures and plasmonic resonance effect

Anhui Laboratory of Clean Energy Materials and Chemistry for Sustainable Conversion of Nature Resources, Wuhu, China 2020 Jun – 2023Jun
Photoelectric Energy Conversion and Biosensing Laboratory *Laboratory members*

- Construct and use Z-scheme catalyst to achieve high-efficiency photoelectric catalytic aquatic hydrogen production
- Construction and application of new ultra-sensitive photoelectric sensor

Participant Experience

- JACS Innovation Summit – Yanqi Molecular Science Forum July 19, 2021
- The Eighteenth International Symposium on Electroanalytical Chemistry Aug 25-27, 2021
- CCS-RSC Young Chemists Summit 2021 Dec 15-16, 2021
- CCS The 21st Nation Conference on Organometallic Chemistry Aug 19-23, 2022
- JACS Innovation Summit – The Future of Transformative Molecules Jul 25, 2023
- The 1st Westlake Forum on Solar Energy Conversion and Catalysis Nov 16-19, 2023
- Carbon Neutral and Green Development Forum Nov 26, 2023
- Matter Forum: Nano-catalytic Materials Aug 3, 2024

Extracurricular Activities

Student Union of Anhui Polytechnic University 2019 Oct – 2021 Oct

Minister of Youth Science and Innovation Department

- Participated in national and provincial science and technology innovation competitions as a student judge many times
- Managed budget allocation and sponsorship program with external parties: developed cooperation with Vitesco Technologies, Anhui Heli Co., Ltd

Additional Information and Awards

- Skilled in Origin, ChemDraw, C4D, Photoshops, Visual C++, Python, and some commonly used data processing software. Self-study of the Ansys Lumerical FDTD.
- Participants of Open Funds of the State Key Laboratory of Electroanalytical Chemistry (SKLEAC202103)
- Xinlong Scholarship (10000 RMB, The highest grade scholarship on campus), AHPU 2020 – 2021
- HKUST(GZ) postgraduate scholarship (CNY 120,000 per year)
- Santos-UniSA scholarship (AUD 27,500 per year)
- Award Third Prize of Sustainable Design Thinking Certificate Program 2024 (HKD 3,000)
- Top 10 College Students (Science and Technology Innovation), AHPU 2020
- The 12th "Challenge Cup" National College Student Entrepreneurship Plan Competition -Third prize
- The 17th "Challenge Cup" National College Student Curricular Academic Science and Technology Works Competition - Second prize of Anhui Province
- The 7th China International College Students' "Internet+" Innovation and Entrepreneurship Competition-Second prize of Anhui Province