Zirong He
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EDUCATION

Fudan University (FDU), Shanghai, China *2019 - 2023*

B.S. in Chemistry

University of California, Berkeley, Berkeley, US *2023 – Present*

Ph.D. in Chemical and Biomolecular Engineering

PUBLICATION

Zhang, Z., **He, Z.**, Wang, N., et al, Wang, F., Regulating the Water Molecular in the Solvation Structure for Stable Zinc Metal Batteries. Adv. Funct. Mater. 2023, 33, 2214648.

RESEARCH EXPERIENCE

Balsara Lab: Chemical and Biomolecular Engineering, University of California, Berkeley

Graduate Student Researcher *November 2023 - Present*

Advisor: Prof. Nitash Balsara

- Polymer/solid composite electrolytes synthesis and characterization

Wang Lab: Material Science and Engineering Department, Fudan University

Undergraduate Researcher

Advisor: Dr. Fei Wang, Fudan University *November 2020 - May 2023*

In Wang group, I work on high-energy aqueous zinc batteries, where I

- Examined the electrochemical profile of half cells or three-electrode systems via galvanostatic charge/discharge and cyclic voltammetry.
- Characterized a $ZnCl_2$/acetonitrile hybrid electrolyte and its discharge product on the electrode using ^1H NMR, Fourier Transform Infrared Spectroscopy and X-Ray diffraction.
- Experimentally analyzed acetonitrile's function as the 'water remover' to the zinc solvation sheath, enabling a >99.8% Coulombic efficiency and suppression of zinc metal dendrites.

SCHOLARSHIP & HONORS

Outstanding Graduate of Fudan University *May 2023*

Undergraduate Academic Scholarship *October 2021*

Chemours Chemicals Scholarship *September 2021*

First Prize of Chinese Chemistry Olympiad (CCO), Shanghai *October 2018*

SKILLS & QUALIFICATIONS

Laboratory/Equipment Skills: Electrochemical: Potentiostat; Microscopy: TEM, SEM, AFM; Spectroscopy: NMR, FTIR, Raman, UV/vis absorbance; Chromatography: HPLC, GC; Other characterization techniques: XRD, XPS, DSC, TG, BET analysis

Programming Language: Python, Matlab

Software: Origin, Chem Office, Gaussian 09w, Materials Studio

Language: Mandarin (native), English (proficient)