

Rui-Lin Han

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EDUCATION

Nankai University, College of Chemistry

Tianjin, China

B.S. in Chemistry, Poling Honor Class (expected)

Sep. 2021-Jun. 2025

- **GPA: 3.80/4.0** **Cumulative weighted average: 89.67/100**
- **Relevant coursework:** Calculus, Linear Algebra, Basic Physics (classical mechanics, thermodynamics, electromagnetics, optics), **Advanced Organic/Inorganic Chemistry, Physical Chemistry**, Instrumental Analysis, **Structural Chemistry, Quantum Chemistry**, Chemistry of Material, Chemical Power Source
- **TOEFL 102** (R27 L25 S25 W25)

RESEARCH EXPERIENCE

Sodium Battery Cathodes and Lithium Battery Electrolytes

03/2023-04/2024

Supervisor: Prof. Kai Zhang, College of Chemistry, Nankai University

Synthesis of layered oxide cathodes for sodium batteries

Construction of a composite solid-state electrolyte with a garnet and a polymer for lithium batteries

Design of a fluorinated deep eutectic electrolyte for lithium batteries

Simulation of lithium-ion diffusion in a garnet electrolyte

09/2023-07/2024

Supervisor: Prof. Ke R. Yang, College of Chemistry, Nankai University

Quantum chemistry learning through weekly seminar

Ab-initio molecular dynamics (AIMD) simulation of Li ion diffusion

Metal Organic Cage and Its Application in Catalysis (Full time research internship) 07/2024-03/2025

Supervisor: Prof. Joseph T. Hupp, Department of Chemistry, Northwestern University

Design and synthesis of zirconium metal organic cages

Construction of salt with metal organic cages and polyoxometalates

Electrocatalysis and gas separation

HONORS AND AWARDS

Scholarship of Institution of Chemistry, Chinese Academy of Sciences

2022

LANDUN Eyas Scholarship of Nankai University

2022

Huaxiang Pharmaceutical Special Scholarship of Nankai University

2023

PUBLICATION

[1] Han, R.; Yan, X. Comparison of Multiple Function Methods for Fitting Surface Tension and Concentration Curves. *University Chemistry*, 2024, 39(7): 381-385. (10.3866/PKU.DXHX202311023)

[2] Han, R.; Sui, J.; Wang, Z.; Li, A.; Wang, Q.; Yang H.; Hupp, J. T. Zirconium metal organic cages with polyoxometalates salts for catalysis. *In preparation*.

PROFESSIONAL SKILLS

- Experiment: inorganic/organic synthesis, electrochemical and battery performance test, electrocatalysis.
- Instrumental analysis: XRD, SEM, NMR, XPS, FTIR, Gas Sorption, Electrochemical workstation.
- Computation: DFT calculation on periodic systems and small molecules, AIMD.
- Program: MS Office, Origin, Jade, VASP, GaussView, Gaussian16, VESTA, ChemDraw, C/C++, Linux.

EXTRACURRICULAR EXPERIENCE

Starting guard of basketball team of College of Chemistry, Nankai University.

Coach of the freshman basketball team of College of Chemistry, Nankai University.