Haoke Zhou

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EDUCATION

Zhejiang University, Department of Chemistry **Hangzhou, Zhejiang, China**

Bachelor's Degree in Natural Sciences *2020.09 – 2024.06*

- **GPA(cumulative):** 3.57/4.0
- **Core course:** Calculus, Linear Algebra, Probability and Mathematical Statistics, Fundamentals of C Programming, Python Programming, Statistical Thermodynamics, Analytical Chemistry, Organic Chemistry, Inorganic Chemistry, Physical Chemistry, Organic Synthesis, Organometallic Chemistry, Material Chemistry, Instrumental Analysis Experiment, etc**.**
- **Awards:** 2020–2021 Third-class Scholarship, 2021 Second-class Scholarship for Freshmen in Department of Chemistry

RESEARCH EXPERIENCE

Department of Chemistry, Zhejiang University **Hangzhou, Zhejiang, China**

Graduation project, Qi Wang's Group *2023.10 – now*

- Spearheaded an innovative research project aimed at understanding the intricate mechanisms governing lithium ion transport in sulfone-based electrolytes, a critical area for enhancing the performance and safety of lithium-ion batteries.
- Employed quantum chemical calculations using Density Functional Theory (DFT) to optimize the molecular structures of key electrolyte components, including lithium ions, dimethyl sulfone (DMS), and bis(trifluoromethanesulfonyl)imide (TFSI).
- Performed RESP charge calculations to ascertain the atomic partial charges, which are essential for accurate molecular dynamics simulations.
- Utilized GROMACS software to execute molecular dynamics simulations, meticulously tracking the diffusion trajectories and interaction profiles of lithium ions under various electric field intensities.
- Collaborated closely with a team of researchers to integrate computational findings with experimental observations, contributing to a holistic understanding of lithium ion dynamics in sulfone-based electrolytes.

Department of Chemistry, Zhejiang University **Hangzhou, Zhejiang, China**

Chemical experiment center, Course project *2022.04 – 2022.06*

- Developed and optimized a High-Performance Liquid Chromatography (HPLC) method for the determination of Acetaminophen and Pseudoephedrine Hydrochloride in Tylenol tablets, ensuring the accuracy of active pharmaceutical ingredients in over-the-counter medications.
- Demonstrated expertise in analytical chemistry techniques, contributing to public health and safety by enhancing the quality control processes for common medications.
- Conducted the preparation, characterization, and exploration of (S)-2-(N,N dibenzyl amino)-3-phenyl propionate Benzyl Ester, a complex organic molecule with potential applications in the pharmaceutical industry.
- Utilized a variety of spectroscopic techniques (NMR, IR, and Mass Spectrometry) for structural elucidation and confirmation of the synthesized compounds.

Department of Chemistry, Zhejiang University **Hangzhou, Zhejiang, China**

Student research training program(SRTP), Zhan Lu's Group *2022.03 – 2022.05*

- Concentrated on the design and synthesis of novel NNNN-tetradentate ligands for asymmetric synthetic reactions catalysed by inexpensive transition metals.
- Mastered relevant organic experimental techniques and experimental methods: basic operations, reaction methods, control of conditions, post-reaction treatments, product purification techniques, product characterisation methods, analysis of results and evaluation of methods.

WORK EXPERIENCE

Department of Management, Department of Management, Zhejiang University **Hangzhou**

Research assistant *2022.06 – 2022.08*

- Reviewed and summarized the current effective policies and regulations of STAR Market for further research.
- Used Python to write a crawler program to capture listing companies' documents of Shanghai Stock Exchange, conduct statistical analysis of high-frequency audit concerns, and provide practical case support for the research report.

ADDITIONAL INFORMATION

- **Technical Skills:** Gaussian, Gromacs, Python, C , SQL, Microsoft Office,
- **Language:** English (IELTs 7/6.5) , Mandarin (Native) , Cantonese (Beginner)
- **Interests:** Football, Hiking, Table games, Poker, Go-Karts