

# Zhutao Sheng

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If you want happiness for a lifetime, help somebody.

## Objective

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As a biochemist with a keen interest in computational chemistry, my objective is to leverage my scientific expertise and analytical skills to contribute to the development of innovative solutions in drug discovery and biomolecular modeling. I aim to apply my experience in machine learning and deep learning to create predictive models for chemical and biological systems, enabling faster and more accurate drug design and discovery.

## Education

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### Rutgers, The State University of New Jersey

*PhD in Biochemistry*

New Jersey, U.S.

*Sep 2022 – Jun 2028 (Expected)*

### Anhui Normal University

*B.S. in Chemistry*

Wuhu, China

*Sep. 2019 – Jun. 2022*

## Research Experience

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### Rutgers, The State University of New Jersey

*Research Assistant*

New Jersey, U.S.

*Sep 2022 – Jun 2028 (Expected)*

- Moles of molecules: automated, high-throughput, single-molecule fluorescence microscopy for imaging ensembles of molecules. Research with Prof. Colin Kinz-Thompson

### Anhui Normal University

*B.S. in Chemistry*

Wuhu, China

*Sep. 2019 – Jun. 2022*

- A visible and colorimetric aptasensor for exosomes detection based enzyme-catalyzed coupling and the aggregation of L-tyrosine-capped gold nanoparticles. Research with Prof. Guangfeng Wang
- Synthesis of CuS for the supercapattery applications via hydrothermal method. Research with Prof. Xiaojun Zhang's student Yu Huang
- An aptamer-based DNA-probe sensor and its preparation method for detecting the toxin GTX 1/4. Research with Tianyue Dai

### University of Science and Technology of China

*Internships at School of Chemistry and Materials Science*

Hefei, China

*Summer 2021*

- Small molecule-assisted synthesis of small-sized intermetallic compounds nanoparticles on carbon support. Research with Prof. Haiwei Liang's student Tianwei Song

## Work Experience

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### Rutgers, The State University of New Jersey

*Research Assistant*

New Jersey, U.S.

*Sep 2022 – Jun 2028 (Expected)*

- Collaborating with other researchers to plan and execute experiments.
- Writing up research results for publication in peer-reviewed journals or conference presentations.
- Facilitating laboratory sessions for undergraduate or graduate chemistry courses, including preparing materials and equipment, demonstrating techniques, and answering student questions.

### Anhui Haichuangxin Energy Materials Co., Ltd

*Intern battery materials technician*

Wuhu, China

*Feb 2021 – Aug 2021*

- Knowledge of the properties and behavior of battery materials, including cathode and anode chemistries, electrolyte formulation, and solid-state electrolytes.
- Knowledge of safety protocols and best practices for handling chemicals and equipment in a laboratory setting.
- Skills in project management, collaboration, and effective communication of technical information to a variety of audiences.
- Experience in synthesis and characterization techniques, such as sol-gel, hydrothermal, and solid-state methods, as well as X-ray diffraction, scanning electron microscopy, and Fourier-transform infrared spectroscopy.

## Awards & Achievements

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### Rutgers, The State University of New Jersey

Research Assistant

New Jersey, U.S.

Sep 2022 – Jun 2028 (Expected)

- waiting for the awards

### Anhui Normal University

B.S. in Chemistry

Wuhu, China

Sep. 2019 – Jun. 2022

- Second Prize National College English competition, 2019
- The 7th Readers' Star of the Library, 2019
- First Prize, Fall 2019 Campus Football Tournament, 2019
- The Third Prize, The 11th "Future Teacher Cup" Middle School Teaching Aids Production competition, 2019
- The Third Prize, The 11th "Future Teacher Cup" Middle School Teaching Aids Production competition, 2019
- Excellence Award, "New Oriental Cup" The Most Powerful Brain Challenge Match, 2020
- Excellence Award of the 13th China Mathematical Modeling Network Challenge, 2020
- Excellent Project Achievements, National University Student Innovation and Entrepreneurship, 2020
- The Third Prize, The 16th Fun Chemical Materials Experimental Technology of the School of Chemical Materials Contest, 2020

## Projects

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### Awesome Chemistry | [GitHub](#)

- \* A curated list of chemistry libraries and software. Please feel free to contribute!.

### Python for Scientists & Python Libraries | [GitHub](#)

- \* A curated list of recommended Python frameworks, libraries, software and resources, all particularly useful for scientific Python users.

## Publications

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- \* **Zhutao Sheng**, Li Wang, Mengmeng Xia, Lin Zhang, Xiaojun Zhang, Guangfeng Wang. "A visible and colorimetric aptasensor for exosomes detection based enzyme-catalyzed coupling and the aggregation of L-tyrosine-capped gold nanoparticles." Published patent. Patent No.:202111172169.1.
- \* Suwan Yang, **Zhutao Sheng**, Tianyue Dai, Lin Zhang, Guangfeng Wang. "A pore-sized controllable reduction method for mental organic frameworks and its application in the accurate uptake of DNA-probe." Published patent. Patent No.:202111004758.9
- \* Song, TW., Xu, C., **Sheng, ZT.** et al. Small molecule-assisted synthesis of carbon supported platinum intermetallic fuel cell catalysts. Nat Commun 13, 6521 (2022).

## Skills

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**Programming:**Python, Git, L<sup>A</sup>T<sub>E</sub>X

**Technologies:**Origin, ChemDraw, Photoshop, Illustrator, 3D Max, Mathematica, Anaconda, Visual Studio Code, Git, Arduino

**Lab Skills:**NMR, FRET Microscope, UV-Vis Spectrometer, XRD, CV, Fluorescence Spectrophotometer, Gel electrophoresis, basic ideas about characterization analysis (SEM, TEM, EDS, XPS, element mapping, Roman spectra

**Languages:** Mandarin (Native), English (Professional), Spanish (Elementary)

**Standard English Test:**IELTS Speaking: 7.0, Jun 2021

## Relevant Coursework

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**B.S coursework:** General Chemistry, Organic Chemistry, Analytical Chemistry, Physical Chemistry, Inorganic Chemistry, Biochemistry, Instrumental Analysis, Thermodynamics, Quantum Mechanics, Chemical Kinetics

**PhD coursework:** Molecular Spectroscopy, Materials Chemistry, Electrochemistry, Surface Chemistry, Polymer Chemistry, Computational Chemistry, Chemical Biology, Medicinal Chemistry, Biophysical Chemistry, Quantum Chemistry, Advanced Topics in Organic Chemistry, Advanced Topics in Inorganic Chemistry, Advanced Topics in Analytical Chemistry, Advanced Topics in Physical Chemistry