Zhutao Sheng

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Education Background

- **Anhui Normal University,Anhui, China** July 2018 - June 2022
  Bachelor of Major in Chemistry; ***GPA:3.00 / 4.00 by WES***
  Courses: *Organic Chemistry, Inorganic Chemistry, Analytical Chemistry, Physical Chemistry, Biological Chemistry, Polymer Chemistry, Structural Chemistry, Intermediate Analytical Chemistry, Cell Biology, Advanced Mathematics, Linear Mathematics, etc.*

Publications

- **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." ***In Process.***
- 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." ***In Process.***
- Tianwei Song, **Zhutao Sheng**, Lujie Zuo, Shuai Li , Haiwei Liang. "Small molecule-assisted synthesis of small-sized intermetallic compounds nanoparticles on carbon support" ***In Process.***

Research Experience

- **Anhui Normal University (AHNU), Wuhu, China**
  A visible and colorimetric aptasensor for exosomes detection based enzyme-catalyzed coupling and the aggregation of L-tyrosine
  Published patent on October 9th, 2021. Patent No.:202111172169.1, supervised by Prof. Guangfeng Wang
  - Carried out series of experiments with detection of UV-vis spectrometer and visualized the data with Origin and Excel.
  - Learned about the usage of pipette and UV-vis Spectrophotometer and carried out the experiments of Exosome detection, which opened the new world gate of chemical research for me.
  - Determined research topic and general experimental plan through three months of literature review under the guidance of Prof. Wang. Initiated experiment work from purchasing the key chemicals, aptamers and exosomes, and experienced the whole process from price discussion, contract signing, and reimbursement independently.
  - Determined representative DNA sequence and modification group for 3' end of DNA by literature review and carried out the detection of exosome samples under different conditions.
  - Found optimal synthesis pathway from numerous adjustments of dosages among different raw materials, the sequence and interval of their additions. Monitored the color change process by more than one thousand pictures taken from dozens of samples. Taught myself the usage of Photoshop to analyze these pictures and dug out meaningful messages from all the obtained information.
- **An aptamer-based DNA-probe sensor and its preparation method for detecting the toxin GTX 1/4.** Feb
  Published patent on August 30th, 2021. Patent No.:202111004758.9, supervised by Prof. Guangfeng Wang
  - Learned about how to prepare aptamer DNA-fluorescent probe.
  - Analyzed and calculated the concentration of GTX 1/4 based on fluorescence spectrophotometer.
  - Excellent presentation and written skills in patent competition.
- **University of Science and Technology of China (USTC), Hefei, China**
  Small molecule-assisted synthesis of small-sized intermetallic compounds nanoparticles on carbon support*Jul 2*
  - Participated in literature review and brainstormed about the sulfur-doped the carbon support inducing Pt loads for superior ORR.
  - Got exposed to research of Pt-based ORR electrocatalysts for PEMFCs for the first time.
  - Learned about the effect of the synthesis method for the deposition of Pt nanoparticles on carbon support with respect to the ECSA, the ORR mass activity, and the fuel cell performance of the resulting catalysts was investigated.
  - The usage of Electrochemical Workstation, Raman spectra, Infrared Spectroscopy and the corresponding software.

Honors and Awards

- Second Prize National College English competition, 2019
- The 7th Readers' Star of the Library, 2019
- First Prize, Fall 2019 Campus Football Tournament, 2019
- Excellence Award, Team Leader of Summer Practice about participation in epidemic prevention., 2019
- The Third Prize, The 11th "Future Teacher Cup" Middle School Teaching Aids Production competition, 2019
- The Third Prize, The 14th "Innovation Cup" College Student Academic Subject Technical works competition, 2019
- Excellence Award, "New Oriental Cup" The Most Powerful Brain Challenge Match, 2020
- Excellence Award, "New Oriental Cup" The Most Powerful Brain Challenge Match, 2020
- The Third Prize, The 16th Chemical Materials Experimental Technology of the School of Chemical Materials Contest, 2020

Lab Computer Skills

UV-Vis Spectrometer, XRD, CV, Fluorescence Spectrophotometer, Gel electrophoresis, basic ideas about characterization analysis (SEM, TEM, EDS, XPS, element mapping, Roman spectra)

C, Origin, ChemDraw, Photoshop, Illustrator, Mathematica,Latex

Standard Test

- **IELTS**: 6.5 (Speaking: 7.0, Reading: 6.5, Listening: 5.5, Writing: 6.0)