Jun Hu
Research Assistant

+86 18226761382

juu@mail.ustc.edu.cn | Hefei, Anhui

Bringing a solid background in R&D, I am keen on transitioning to a career in robotics. I've led an underwater mass spectrometry project, earned three patents, and published two papers. Skilled in Python, SolidWorks, Origin Lab, and STM32, I offer excellent problem-solving and teamwork skills. Holding a doctoral degree, seeking a research assistant role for the next few years to pinpoint my research focus within robotics. I am deeply committed to contributing to your team by pursuing the publication of high-quality papers that aim to make a meaningful impact in the field.

PROJECT EXPERIENCE

Underwater Mass Spectrometer Development   Jan. 2019 – Apr. 2022

Project Manager

- Led a team of 5 people in the successful completion of the project on time and within budget.
- Responsible for all phases of the project from application to completion, including proposal submission, execution, budget management, team coordination, stakeholder engagement, and project closure.

Hardware design and Testing [1]

- Led the design and testing of underwater mass spectrometry hardware, enhancing module functionalities through targeted feedback and improvements.
- Ensured underwater mass spectrometry equipment successfully operated continuously for 12 hours and completed 4 rounds of sampling, meeting project requirements.

Ion mobility Spectrometer development   Jan. 2022 – Dec. 2023

Circuit board and control system design

- Utilizing Altium Designer for the power supply, and control system circuits design. Successfully integrated the original four modules into a single unit.
- Utilized STM32 CUBE for allocating STM hardware resources and programmed the microcontroller firmware in C for UART communication.
- Developed the host computer software using Python and PyQt, implementing user interface, UART communication, serial signal decoding, data processing, and scientific calculations.

1. Granted patents: CN112151352A, CN110988287A, CN110880446A

RESEARCH EXPERIENCE

FAIMS Accurate Peak Position Acquisition [1]

Proposing an accurate peak position acquisition method of High-field Asymmetric waveform Ion Mobility Spectrometry (FAIMS) spectral. The method outperforms traditional approaches in quickly and accurately determining FAIMS peak positions. The work underpins the theoretical basis for FAIMS' field application and swift spectral library development.

Study on scanning speed of FAIMS [2]

Proposing a function referred to as F-EMG to describe the impact of scanning speed on FAIMS spectra, and the properties of the function were studied. Theory and experimental results validate that our model, surpassing traditional approaches, precisely describes the shape of FAIMS spectral peaks with greater accuracy.

1. Jun HU., et al. Rapid method for accurate peak position extraction in high-field asymmetric ion mobility spectrometry. Chinese Journal of Analytical Chemistry 51.10 (2023): 100305.
2. Jun HU., et al. Theoretical and Experimental Study on the Effect of Scanning Speed on Faims Peaks. http://dx.doi.org/10.2139/ssrn.4701082 (Under Review)

EDUCATION

University of Science and Technology of China   Hefei, Anhui | Sep. 2019 – Jan. 2024

Ph.D. in Precision Instruments and Machinery   Overall GPA:3.67/4.0

SKILLS

- **Technical Skills:** Office, Origin, SolidWorks, COMSOL, Altium Designer, Python, C++, STM32, Photoshop
- **Languages:** English (TOEFL 100), Simplified Chinese (native)
- **Self-learned courses:** MIT 18.06SC Linear Algebra, Control Theory by Brian Douglas, CS223A Introduction to Robotics (in progress), ROS (in progress)