RUIQI YONG

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EDUCATION

Xi'an Jiaotong-Liverpool University (XJTLU) Suzhou, China
Bachelor of Science in Applied Chemistry *Expected: Jun. 2025*
University of Liverpool (UoL) Liverpool, United Kingdom
Bachelor of Science in Applied Chemistry *Expected: Jun. 2025*

- Weighted Average Mark: 62/100 (British marking criteria)

CONFERENCE PARTICIPATION

1. **R. Yong**†, W. Yuan† *et al*. Nanocellulose-Paper-Based Analytical Devices with MOFs/Heterojunction Structures for Multiplex SERS Detection. *46th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2024)*, Orlando, U.S.A., Jul. 15-19, 2024. [Poster] † denotes equal contributions.
2. H. Yuan†, **R. Yong**† *et al*. A Centrifugation-Assisted Lateral Flow Assay Platform for Bioassay Sensitivity and Visualization Enhancement. 45*th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2023)*, Sydney, Australia, Jul. 24-27, 2023. [Poster] † denotes equal contributions.

PUBLICATIONS

Peer-Reviewed Conference Papers:

1. S. Duan, **R. Yong** *et al*. Automated Offline Smartphone-Assisted Microfluidic Paper-Based Analytical Device for Biomarker Detection of Alzheimer's Disease. *EMBC 2024*, Orlando, U.S.A., Jul. 15-19, 2024. (Accepted pending publication)
2. J. Sun, S. Duan, **R. Yong** *et al*. An automated microfluidic paper-based analytical device for chemiluminescence immunoassay. *EMBC 2024*, Orlando, U.S.A., Jul. 15-19, 2024. (Accepted pending publication)

Peer-Reviewed Journal Papers:

1. J. Zhang†, S. Liu†, H. Yuan†, **R. Yong** *et al*. Deep Learning for Microfluidic-Assisted *Caenorhabditis elegans* Multi-Parameter Identification Using YOLOv7. *Micromachines*, *14*, 1339, Jun. 2023. † denotes equal contributions.
2. W. Yuan, H. Yuan, R. Li, **R. Yong** *et al*. A SERS nanocellulose-paper-based analytical device for ultrasensitive detection of Alzheimer's disease. *Analytica Chimica Acta*, *1301*, 342447, May 2024.
3. W. Yuan, H. Yuan, S. Duan, **R. Yong** *et al*. Microembossing: A Convenient Process for Fabricating Microchannels on Nanocellulose Paper-Based Microfluidics. *Journal of Visualized Experiments*, *200*, e65965, Oct. 2023.

RESEARCH EXPERIENCES

Research Leader, XJTLU *Supervisor: Dr. Pengfei Song, XJTLU*
Centrifugation-Assisted Lateral Flow Assay (CLFA) Platform Jun. 2022 - Present

- Developed a CLFA platform with adjustable rotation speeds, enabling smartphone-based quantitative bioassay and active sample flow control.
- Developed a bio-inspired microfluidic channel to enhance the bioassay sensitivity of LFAs.

Research Assistant, XJTLU *Supervisor: Dr. Pengfei Song, XJTLU*

Nanocellulose Paper (nanopaper)-Based Microfluidic Platform Jul. 2022 - Present

- Developed a facile microembossing process using plastic micro-molds to fabricate microchannels on nanopaper efficiently.
- Detected glial fibrillary acidic protein in human plasma using SERS on nanopaper-based analytical devices, enabling high-sensitive biomarker detection of Alzheimer's disease.

Research Assistant, XJTLU *Supervisor: Dr. Pengfei Song, XJTLU*

Metal-Organic Frameworks (MOFs)/heterojunction structure Jun. 2023 - Present

- Developed an *in-situ* ZIF-67/$Co(OH)_2$ heterojunction-based nanopaper plate that facilitates efficient photoinduced charge transfer to enhance the SERS signal.
- Developed nanocellulose-paper-based analytical devices with both *in-situ* ZIF-8/$Zn(OH)_2$ and ZIF-67/$Co(OH)_2$ structures for multiplex SERS detection of environmental pollutants.

Research Assistant, XJTLU *Supervisor: Dr. Meng Ding, XJTLU*

High-performance capacitive deionization (CDI) technology material Jun. 2024 - Present

- Developed a self-supporting composite of lithium cobalt manganese oxide (LCMO) and MXene electrodes in CDI technology, enabling efficient lithium extraction from salt lakes.

SKILLS

Computer Skills & Software:

- *Programming*: R
- *CAD/CAE*: SolidWorks, Cinema 4D, Rhinoceros 3D, AutoCAD, KeyShot
- *Graphic design*: ChemDraw, Adobe Illustrator, Adobe Premiere Pro, Adobe Photoshop
- *Data analysis*: Origin, MestReNova, Cytoscape

Experimental Skills:

- *Fabrication*: 3D printing, Laser cutting
- *Immunoassays*: Enzyme-linked immunosorbent assay (ELISA), Lateral flow assay (LFA)
- *Molecular biology techniques*: Cell culture, Gel electrophoresis, qPCR
- *Chemical synthesis*: AuNPs, AgNPs, MXene, LCMO
- *Characterization*: UV-vis, FTIR, SEM, SERS, NMR, MS, XRD, XPS
- *Separation and analysis techniques*: HPLC, GC, TLC, EIS, CDI, Flash column chromatography, Cyclic voltammetry, Galvanostatic charge/discharge

Language: Mandarin (Native), English (English-only instruction)

SELECTED HONORS & AWARDS

- Outstanding Student (School-wide top 5%), XJTLU 2024
- Excellent Student Cadre (University-wide top 1%), XJTLU 2022 & 2023

SERVICE & ACTIVITIES

- **Academic Buddy**, XJTLU 2022-2023
- **Vice President & Activities Minister**, XJTLU Sagittarius Astronomy Club 2022-2023
- **Vice President**, XJTLU Cheerleading Club 2022-2023