Li Xionghui

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EDUCATION

Shantou University (STU), Shantou, China Sep. 2021 – Jun. 2025
Bachelor of Engineering in Biomedical Engineering (*Collaborated program between University of Michigan Ann Arbor and Shantou University, fully taught in English*)
Average Score: 80/100

PUBLICATIONS

Xionghui Li, Haonan Li, Xuanying Liang, Jing Song, Kanghui Li, Muyang Zhang, Huiru Zhang, Weijin Guo*, Zhuoting Han*, Lok Ting Chu* **"**Facile patterning of microfluidic paper-based analytical devices (μPADs) by Propylene Glycol Methyl Ether Acetate (PGMEA) for point-of-care diagnostics" **Lab on a Chip** (**Q1,** Under Review, LC-COM-10-2024-000837)

Xionghui Li, Haonan Li, Xuanying Liang, Zitao Feng, Zejingqiu Chen, Muyang Zhang, Jie Zhou, Qinghao He, Huiru Zhang, Weijin Guo* **"**Quantitative Measurement of Fibrinogen Concentration by a Spotting Test on a Paper Microfluidic Device" **Engineering Proceedings** (Revised version review, engproc-3174933)

Xionghui Li, Haonan Li, Xuanying Liang, Zejingqiu Chen, Muyang Zhang, Qinghao He, Jie Zhou, Zitao Feng, Yeqian Liu, Xinyi Chen, Huilin Chen, Zitong Ye, Ziwei Huang, Xingwei Zhang, Weijin Guo* "Using Electroosmotic Pump to Control the Flow Rate on Cotton Thread based μTADs" **Sensors and Actuators: A. Physical** (**Q1,** Minor Revision submitted, SNA-D-23-01862R1)

[Yixi Shi, Haonan Li], Hao Chen, **Xionghui Li**, Muyang Zhang, Qinghao He, Jie Zhou, Jiahua Zhong, Xinyi Chen, Lok Ting Chu, Weijin Guo* "Capillary flow of hybrid mode for programmed enhancement of flow rate on μTADs" **Langmuir** (**Q2,** Under Review, la-2024-047686)

[Jie Zhou, Haonan Li], **Xionghui Li**, Xuanying Liang, Zitao Feng, Qinghao He, Muyang Zhang, Xinyi Chen, Huilin Chen, Huiru Zhang, Weijin Guo* "Automatic Characterization of Capillary Flow Profile of Liquid Samples on μTADs Based on Capacitance Measurement" **Journal of Chromatography A** (**Q1**) 465328(2024) https://doi.org/10.1016/j.chroma.2024.465328

Haonan Li, Muyang Zhang, Yeqian Liu, Shangneng Yu, **Xionghui Li**, Zitao Feng, Jie Zhou, Qinghao He, Xinyi Chen, Huiru Zhang, Xingwei Zhang, Weijin Guo* "OSTE Micro Mushroom Forest: A Superhydrophobic Substrate by Polymer Off-Stoichiometry Thiol-Ene (OSTE)" **Micromachines (Q2)** 15(9), 1088(2024) https://doi.org/10.3390/mi15091088

[Zejingqiu Chen, Haonan Li], Muyang Zhang, **Xionghui Li**, Yaqin Zhang, Guangyu Zhu, Zitao Feng, Zhiqing Xiao, Huiru Zhang, Xin Cui, Weijin Guo* "Cotton threads encapsulated by thermal contraction tube for point-of-care diagnostics" **Microchemical Journal (Q1)** 110423(2024) https://doi.org/10.1016/j.microc.2024.110423

RESEARCH EXPERIENCE

Medical Microsystem Laboratory, Shantou University
Research assistant 2023-Present

- **Quantitative Measurement of Fibrinogen Concentration by a Spotting Test on a Paper Microfluidic Device** ***Project leader***
  - Designed a new paper-based microfluidic chip to measure fibrinogen concentration within 4 minutes.

- **Using Electroosmotic Pump to Control the Flow Rate on Cotton Thread Based μTADs** ***Project leader***
  - Verified the feasibility of the electroosmotic pump principle in cotton thread μTADs.
  - Explored the possibility of controlling liquid flow rate in cotton thread μTADs using the electroosmotic pump principle.
- **Cotton Threads Encapsulated by Thermal Contraction Tube for Point-of-care Diagnostics** ***Key project participants***
  - Improved one of the processes of cotton thread μTADs preparation, enhancing the stability and repeatability of the experimental results.
  - Deeply participated in the experiment and completed the blood HCT detection part of the article.

- **OSTE Micro Mushroom Forest: A Superhydrophobic Substrate by Polymer Off-Stoichiometry Thiol-Ene (OSTE)** ***Key project participants***
  - First proposed the use of double photolithography to fabricate superhydrophobic structures (contact angle over 150°) on OSTE materials.

- **Facile patterning of microfluidic paper-based analytical devices (μPADs) by Propylene Glycol Methyl Ether Acetate (PGMEA) for point-of-care diagnostics** ***Project leader***
  - Explore the possibility of this material as a paper-based microfluidic barriers.
  - Exploring the application of microfluidic paper-based chips made of this material in the field of point-of-care testing to explore the application of microfluidic paper-based chips made of this material in the field of point-of-care testing.

- **Automatic Characterization of Capillary Flow Profile of Liquid Samples on μTADs Based on Capacitance Measurement** ***Key project participants***
  - Validated the feasibility of the glass fiber yarn velocity profile, laying the foundation for subsequent experiments.

LANGUAGES & SKILLS

Languages:
IELTS (6(5.5)), Mandarin (Native), Cantonese (Native)
Computer Skills:
Fusion 360, Matlab, Tracker, Imagej, Origin and Microsoft Office (Word, Excel, and PowerPoint).
Lab Skills:
UV Lithography, PDMS Soft Lithography, Cell Culture, Cell Passaging, Cytotoxicity Assay, Mouse Dissection, Animal Experimentation
Instrumentation Skills:
Fluorescence microscope, Step Meter, UV lithography machine, Contact Angle tester, Glue

dispenser, Cutting machine, 3D Printer, Microplate reader, Ultraviolet spectrophotometer, Cell counter, Constant temperature shaker, Cell Crusher, Ultrasonic machine, pH detector, Vortex oscillator, Magnetic stirrer, Glue dispenser.