李自达

副教授

深圳大学生物医学工程

zidali@szu.edu.cn | (+86) 17841138287

https://zidalab.github.io/

研究兴趣

- 微流控、微加工
- 数字化、高灵敏单分子检测
- 单细胞转录组测序
- 凝血检验方法

教育经历

密歇根大学安娜堡分校　　　　　　　　　　　　　　　　　　　Ann Arbor, MI, US

博士，机械工程，导师：Prof. Jianping Fu　　　　　　　　　　　　　2013 – 2018

中国科学技术大学　　　　　　　　　　　　　　　　　　　　　　　安徽合肥

学士，热能与动力工程，导师：何立群教授　　　　　　　　　　　　　2008 – 2012

工作经历

深圳大学　　　　　　　　　　　　　　　　　　　　　　　　　　　广东深圳

副教授（长聘），生物医学工程　　　　　　　　　　　　　　　　　2024 – 至今

助理教授，生物医学工程　　　　　　　　　　　　　　　　　　　　2018 – 2023

香港大学　　　　　　　　　　　　　　　　　　　　　　　　　　　香港

研究助理，导师：Prof. Anderson Ho Cheung Shum　　　　　　　　2012 – 2013

主要荣誉和奖项

- ACS 口头报告奖, 中国化学会分析化学年会 (2023)
- 深圳市优秀科技学术论文, 深圳市科学技术协会 (2023)
- 深圳大学 "优秀班主任" (2022)
- 深圳大学 "优秀本科教师奖" (2022)
- 深圳大学 "教学单项奖" (2021)
- 深圳大学年度考核优秀 (2020)
- Baxter Young Investigator Award First-Tier, Baxter Healthcare Inc. (2016)
- 安徽省优秀本科毕业生 (2012)
- 本科生国家奖学金 (2011)

指导学生获奖

- 硕士研究生 "国家奖学金" (方琪, Top 5%, 2023)
- 广东省生命健康研究生学术论坛-口头报告二等奖 (武凯, 2023)
- 深圳大学 "优秀研究生学位论文" (陈琳喆, Top 2%, 2022)
- 深圳大学 "腾讯创新奖学金" (李东豪, Top 1%, 2022)
- 深圳大学优秀硕士毕业生 (陈琳喆, 2022; 李东豪, 2023)
- 深圳大学 "荔园挑战" 创新创业大赛特等奖 (李东豪, Top 2%, 2021; 丁婧怡, 2022)
- 深圳大学百篇优秀本科毕业论文 (金美池, Top 2%, 2021)

科研项目

- 国家自然科学基金青年项目 (主持, 2024)
- 高新企业技术开发协作项目 (主持, 2022)
- 广东省自然科学基金面上项目 (主持, 2019)
- 广东省卫健委医学科学技术研究基金青年项目 (主持, 2019)
- 深圳大学医工交叉项目 (Co-PI, 2024-2025)
- 深圳市高层次人才科研启动经费 (主持, 2020)
- 深圳大学新引进教师科研启动经费 (主持, 2019)

授权专利

- **李自达**, 陈琳喆, 郑卫东, 单洁滢, 谢以瀚, 刘昕宇. 一种基于微流控技术的血液粘度检测装置及方法. 中国发明专利 ZL202110639057.6 (2023)
- **李自达**, 赵展陶. 一种图像激发超微注射方法、系统及设备. 中国发明专利 ZL202211449260.8 (2023)
- **李自达**, 方琪, 武凯. 基于深度学习的多重数字核酸检测方法、装置及相关介质. 中国发明专利 ZL202211516857.X (2023)
- **李自达**, 余夏夏, 刘昕宇, 单洁滢, 谢以瀚. 体外诊断仿真系统及方法. 中国发明专利 ZL202110750662.0 (2023)
- **李自达**, 黄兰蛛, 郑卫东. 一种用于检测凝块收缩力的柔性微柱环阵列及其制备方法和应用. *中国发明专利* ZL202010260648.8 (2022)
- Jianping Fu, Kevin Ward, **Zida Li**, and Xiang Li. A microscale device for blood coagulation assay. *U.S. Patent Application* 62/304,385 (2017)
- Ho Cheung Shum, Alban Sauret, **Zida Li**, and Yang Song. System and method for generation of emulsions with low interfacial tension and measuring frequency vibrations in the system. *U.S. Patent Application* 13/839,072 (2013)

主要论文 (#第一作者; *通讯作者; <u>指导的学生</u>)

<u>独立通讯</u>:

[1] Yujuan Chai, Xiaoxiang Hu, <u>Qi Fang</u>, Yuanyuan Guo, Binmao Zhang, Hangjia Tu, and **Zida Li*** (2024). Embracing Poisson encapsulation statistics for improved droplet digital immunoassay. ***Analytical Chemistry***, Under Review

一区, IF: 8.0

[2] Zhantao Zhao, Heng Zhai, Peng Zuo, Tao Wang, Run Xie, Mu Tian, Ruyuan Song, Xiaonan Xu, and **Zida Li*** (2024). Image-activated pico-injection for single cell analysis. ***Talanta***, 272, 125765

一区, IF: 6.5

[3] Meichi Jin,# Jingyi Ding,# Yu Zhou, Jiazhao Chen, Yi, Wang, and **Zida Li*** (2024). StratoLAMP: Label-free, multiplex digital loop-mediated isothermal amplification based on visual stratification of precipitate. ***Proceedings of the National Academy of Sciences***, 121(2), e2314030121

一区, IF: 11.1

[4] Meichi Jin, Kai Wu, Mengzhen Wang, Yang Zhang, Chengbin Yang, and **Zida Li*** (2023). High-resolution, multiplex antibody patterning using micropillar-focused droplet printing and microcontact printing. ***Advanced Biology***, 7(8), 2300111, 2023

三区, IF: 4.1

[5] Kai Wu,# Qi Fang,# Zhantao Zhao, and **Zida Li*** (2023). CoID-LAMP: Color-encoded, intelligent digital LAMP for multiplexed nucleic acid quantification. ***Analytical Chemistry***, 95(11), 5069–5078

一区, IF: 8.0

[6] Yang Zhang, Taozhao Yu, Jingyi Ding, and **Zida Li*** (2023). Bone-on-a-chip platforms and integrated biosensors: towards advanced *in vitro* bone models with real-time biosensing. ***Biosensors & Bioelectronics***, 219, 114798

一区, IF: 12.5

[7] Linzhe Chen, Donghao Li, Xinyu Liu, Yihan Xie, Jieying Shan, Haofan Huang, Xiaxia Yu, Yudan Chen, Weidong Zheng, and **Zida Li*** (2022). Point-of-care blood coagulation assay based on dynamic monitoring of blood viscosity using droplet microfluidics. ***ACS Sensors***, 7(8), 2170–2177

一区, IF: 9.6, Front cover

[8] Donghao Li,# Xinyu Liu,# Yujuan Chai,# Jieying Shan, Yihan Xie, Yong Liang, Susu Huang, Weidong Zheng, and **Zida Li*** (2022). Point-of-care blood coagulation assay enabled by printed circuit board-based digital microfluidics. ***Lab on a Chip***, 22(4), 1473-0197

一区, IF: 7.5

[9] Lanzhu Huang,# Xinyu Liu,# Yuanbin Ou, Haofan Huang, Xia Zhang, Yize Wang, Yong Liang, Xiaxia Yu, Weidong Zheng, Huisheng Zhang, and **Zida Li*** (2020). Micro-engineered flexural post rings for effective blood sample fencing and high throughput measurement of clot retraction force. ***ACS Sensors***, 5(12), 3949-3955

一区, IF: 9.6, Front cover

主导角色的共同通讯：

[10] Run Xie,# Yang Liu,# Xuyang Shi, Shiyu Wang, Zhantao Zhao, Longqi Liu, Ya Liu,* and **Zida Li*** (2023). Combinatorial perturbation sequencing on single cells using microwell-based droplet random pairing. ***Biosensors & Bioelectronics***, 220, 114913

一区, IF: 12.5

[11] Linzhe Chen,# Jingyi Ding,# Hao Yuan, Chi Chen*, and **Zida Li*** (2022). deep-dLAMP: deep learning-enabled polydisperse emulsion-based digital loop-mediated isothermal amplification. ***Advanced Science***, 9(9), 2105450

一区, IF: 17.5

[12] Linzhe Chen, Guoliang Zhang, Longqi Liu,* and **Zida Li*** (2021). Emerging biosensing technologies for improved diagnostics of COVID-19 and future pandemics. ***Talanta***, 225, 121986

一区, IF: 6.5

第一作者兼共同通讯：

[13] **Zida Li**[#,*], Feng Lin[#], Shue Wang, Xufeng Xue, and Yue Shao* (2022). Single-cell sequencing to unveil the mystery of embryonic development. ***Advanced Biology***, 6(2), 2701-0198

三区, IF: 3.5

[14] **Zida Li**,* Luoquan Li, Meixiang Liao, Liqun He, and Ping Wu* (2019). Multiple splitting of droplets using multi-furcating microfluidic channels. ***Biomicrofluidics***, 13(2), 024112

三区, IF: 3.2

次要角色的通讯作者：

[15] Shiyu Wang,[#] Yang Liu,[#] Yijian Li, Menghua Lv, Kai Gao, Ying He, Wenbo Wei, Yonggang Zhu, Xuan Dong, Xun Xu, **Zida Li**,* Longqi Liu,* and Ya Liu* (2022). High-throughput functional screening of antigen-specific T-cells based on droplet microfluidics on single-cell level. ***Analytical Chemistry***, 94(2), 918–926

一区, IF: 8.0, Front cover

[16] Xue Chen, Nicolo Simone Villa, Yanfeng Zhuang, Linzhe Chen, Tianfu Wang, **Zida Li**,* and Tiantian Kong* (2020). Stretchable supercapacitors as emergent energy storage units for health monitoring bioelectronics. ***Advanced Energy Materials***, 10(4), 1902769

一区, IF: 29.7

[17] Luoquan Li[#], Ping Wu[#], Zhaofeng Luo, Lei Wang, Weiping Ding, Tao Wu, Jinyu Chen, Jinlong He, Ying Chen, Guibo Li, **Zida Li**,* and Liqun He* (2019). Dean flow assisted single cell and bead encapsulation for high performance single cell expression profiling. ***ACS Sensors***, 4(5), 1299-1305

一区, IF: 9.6

独立一作（加入深圳大学之前）：

[18] **Zida Li**, Yize Wang, Xufeng Xue, Brendan McCracken, Kevin Ward, and Jianping Fu* (2018). Carbon nanotube strain sensor based hemoretractometer for blood coagulation testing. ***ACS Sensors***, 3(3), 670-676

一区, IF: 9.6

[19] **Zida Li**, Xufeng Xue, Feng Lin, Yize Wang, Kevin Ward, and Jianping Fu* (2017). Capillary-assisted coating of carbon nanotube thin film as a strain gauge. ***Applied Physics Letters***, 111(17), 173105

二区, IF: 3.9

[20] **Zida Li**, Xiang Li, Brendan McCracken, Yue Shao, Kevin Ward, and Jianping Fu* (2016). A miniaturized hemoretractometer for blood clot retraction testing. ***Small***, 12(29), 3926-3934.

一区, IF: 12.5

[21] **Zida Li**, Sze Yi Mak, Alban Sauret, and Ho Cheung Shum* (2014). Syringe-pump-induced fluctuation in all-aqueous microfluidic system implications for flow rate accuracy. ***Lab on a Chip***, 14(4), 744-749

一区, IF: 7.5

其他：

[22] Yi Zheng, Xufeng Xue, Yue Shao, Sicong Wang, Sajedeh Nasr Esfahani, **Zida Li**, Jonathon M. Muncie, Johnathon N. Lakins, Valerie M. Weaver, Deborah L. Gumucio, and Jianping Fu* (2019).

Controlled modeling of human epiblast and amnion development using stem cells. ***Nature***, 573(7774), 421-425

[23] Yuanyuan Zheng,[#] Xufeng Xue,[#] Agnes M. Resto Irizarry, **Zida Li**, Yue Shao, Yi Zheng, Gang Zhao,* and Jianping Fu* (2019). A patterned model for neural tube development studies by human embryonic stem cells in a biomimetic niche. ***Science Advances***, 5(12), eaax5993