**Yanwei Jia, Ph.D.**

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## Academic Qualification

***Ph. D.*** in Biophysics, National University of Singapore, Singapore, 2006

***M. Sc.*** in Theoretical Physics, Hunan University, China, 2002

***B. Sc.*** in Applied Physics, Hunan University, China, 1996

## Professional Experience

- Associate Professor, University of Macau, Macau (Aug. 2022 – present)
- Assistant Professor, University of Macau, Macau (Jan. 2016 - Aug. 2022)
- Postdoctoral Fellow, University of Macau, Macau (Jan. 2013 - Dec. 2015)
- Research Scientist, Brandeis University, MA, USA (May. 2007 - Dec. 2011)
- Postdoctoral Fellow, Brandeis University, MA, USA (May. 2006 - May 2007)
- Research Fellow, National University of Singapore, Singapore (Jan. 2006 – Apr. 2006)

## Research Expertise

- Digital microfluidics
- Point-of-care devices for precision medicine
- DNA identification technology

## Awards

- **First Prize**, the University of Macau & Bank of China Trophy UltiMater Entrepreneur Competition, 2024
- **Best Trade Show Award**, the University of Macau & Bank of China Trophy UltiMater Entrepreneur Competition, 2024
- **Best Paper Award**, IEEE Biosensors 2024
- **3rd Prize of Technical Invention Award**, Macau Science and Technology Award, 2022
- **Innovation Award,** The 9th International Multidisciplinary Conference on Optofluidics, 2019
- **Innovation Prize,** International Organization for Biological Crystallization, 2008
- **Outstanding Mentor Award,** Ministry of Education of Singapore, 2004

## Courses Taught

- B.Sc. course
  - Fundamental Bioelectricity, 2019 - present
- M.Sc. course
  - Special Topics in Biomedical Engineering, 2016 - present
- Ph.D. course
  - Advanced Topics in Electrical and Computer Engineering, 2016 - present

**Student Supervision**

- Current students: 7 Ph.D. students
- Graduated students: 3 Ph.D. and 2 M.Sc.

| Student Name | Degree | Year of Graduation | Current Position | Institute / Company |
|---|---|---|---|---|
| Ren Shen | Ph.D. | 2021 | Postdoctoral Fellow | University of Macau |
| Haoran Li | Ph.D. | 2021 | Engineer | Huawei Ltd. |
| Liang Wan | Ph.D. | 2022 | Scientist | Livzon Mabpharm, Inc. |
| Wenzhen Miao | M.Sc. | 2021 | Algorithm Engineer | ByteDance Ltd. |
| Yujun Mao | M.Sc. | 2021 | Technical Analyst | Agricultural Bank of China |

**Research Projects**

| No. | Project | Fund | Period |
|---|---|---|---|
| 15 | **PI,** FDCT 0168/2023/RIA3, Cancer drug screening based on single-cell impedance detection on integrated circuit chip | MOP 2,484,700 | 2024-2027 |
| 14 | **PI,** MYRG-GRG2023-00034-IME, Deep droplet digital PCR (dddPCR) on digital microfluidics | MOP 640,000 | 2024-2025 |
| 13 | **PI,** SHMDF-OIRFS/2024/001, Primary tumor drug screening on digital microfluidics | MOP 300,000 | 2024-2024 |
| 12 | **PI,** Huafa-UM Joint Project, Portable drug screening platform based on digital microfluidics | RMB 4,140,000 | 2022-2025 |
| 11 | **PI,** FDCT 0029/2021/A1, Digital microfluidic system for cancer drug screening, | MOP 1,933,000 | 2021-2024 |
| 10 | **PI,** FDCT 0072/2020/AGJ, Digital microfluidic system for breast cancer biomarker detection and drug screening | MOP 977,000 | 2021-2023 |
| 9 | **PI,** Zhuhai Science and Technology Innovation and Development of Special Funds, EF019/IME-JYW/2021/ZHSTIB, Development and industrialization of digital microfluidics for high throughput multi-respiratory-pathogen detection | RMB 160,000 | 2021-2023 |
| 8 | **PI**, MYRG 2020-00078-IME, Precise drug delivery on digital microfluidics for drug screening | MOP 520,000 | 2022-2023 |
| 7 | **PI,** FDCT 0053/2019/A1, Pico-pipette in Digital Microfluidic System for Precise Sample Delivery with Wide Range | MOP 2,243,000 | 2019-2022 |
| 6 | **PI,** Guangzhou Science and Technology Innovation and Development of Special Funds, EF009/AMSV-JYW/2018/GSTIC, Development and Industrialization of Drug | RMB 700,000 | 2019-2021 |

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|---|---|---|---|
| | Resistant Tuberculosis Detection Kit and Equipment Based on Digital Microfluidic PCR and HRM Platform | | |
| 5 | **PI,** MYRG 2018-00114-AMSV, 3D Micro-structured Digital Microfluidic System with Closed-Loop Image Analysis for Cell Recognition in Precision Medicine Investigations | MOP 1,455,000 | 2019-2021 |
| 4 | **PI,** FDCT 110/A3/2016, Integration of Digital & Channel Microfluidic Systems for High-throughput Drug Screening | MOP 1,923,000 | 2017-2020 |
| 3 | **PI,** MYRG 2017-00022-AMSV, Intelligent-controlled Point-of-Care Fast Infectious Disease Diagnostic System | MOP 900,000 | 2018-2020 |
| 2 | **PI,** SRG 2016-00072-AMSV, Digital Microfluidics for Disease Diagnostics, | MOP 150,00, | 2016-2019 |
| 1 | **Co-PI,** FDCT 047/A1/2014, Electronic-automated Digital Microfluidic System for Disease diagnostics | MOP 3,290,000 | 2015-2018 |
| | **Total amount: > USD 2,000,000** | **MOP 16,300,000**<br>**RMB 5,000,000** | |

**Patents & Technology Transfer**

1. Y. W. Jia, A. M. Lyu, P. I. Mak, R. P. Martins, 一种深度液滴数字核酸检测方法及其应用，UMPT0794-2024
2. Y. W. Jia, W. H. Hui, P. I. Mak, R. P. Martins, 基于 Wi-Fi 互联的智能语音助老药箱，UMPT0761-2024
3. Y. W. Jia, W. H. Hui, P. I. Mak, R. P. Martins, 基于荧光 PCR 检测技术的微生物污染核酸检测系统， UMPT0760-2024
4. Y. W. Jia, Y. Y. Liu, A. M. Lyu, J. J. Wu, R. H. Xu, 一种促进伤口愈合的敷料的制备方法及其应用，Application No. 202410927033.4
5. Y. W. Jia, W. H. Hui, K. M. Lei, P. I. Mak, R. P. Martins, 集成电路芯片上基于阻抗的单细胞区分，UMPT0637-2023
6. Y. W. Jia, R. Shen, P. I. Mak, R. P. Martins, 一种利用无修饰探针的核酸检测方法及其应用, CN PATENT, Application No. 202311053608.6, 2023
7. Y. W. Jia, H. R. Li, P. I. Mak, R. P. Martins, 微流控系统、微流体分配方法、处理设备及存储介质，CN PATENT, Application No. 2023101654632, 24 Feb. 2023
8. Y. W. Jia, H. R. Li, P. I. Mak, R. P. Martins, 微流控芯片以及微流控系统，CN PATENT, Application No. 2023101715481, 24 Feb. 2023
9. Y. W. Jia, L. Wan, M. Z. Li, M. K. Law, P. I. Mak, R. P. Martins, 一种 DMF 芯片、快速 PCR 系统和 PCR 方法, CHN PATENT, 202210450451.X， 2022
10. Y. W. Jia, L. Wan, H. R. Li, Y. Y. Liu, P. I. Mak, and R. Martins, 一种基于电润湿现象的液滴生成方法及应用，**CN PATENT**, CN 114160221B, Aug. 8, 2023
11. Y. W. Jia, H. R. Li, R. Shen, C. Dong, T. L. Chen, J. Gao, P. I. Mak, and R. Martins, A method for on-chip precise sample delivery in a microfluidic system, **US PATENT,** No. 11618025, Apr 4, 2023

12. S. Fraden, H. Boukellal, Y. W. Jia, S. Selimovic, A. Rowat, J.y Agresti, D. A. Weitz, Manipulation of fluids, fluid components and reactions in microfluidic systems, **US PATENT**, No. 11618024, April 4, 2023 (Licensed to RainDance Technologies, USA)
13. Y. W. Jia, L. Wan, C. Dong, H. R. Li, T. L. Chen, P. I. Mak, R. Martins, Digital Microfluidics for Polymerase Chain Reaction, **US PATENT**, No. 11517904, Dec. 6, 2022
14. S. Fraden, H. Boukellal, Y. W. Jia, S. Selimovic, A. Rowat, J.y Agresti, D. A. Weitz, Manipulation of fluids, fluid components and reactions in microfluidic systems, **US PATENT**, No. 11224876, Jan. 18, 2022 (Licensed to RainDance Technologies, USA)
15. S. Fraden, H. Boukellal, Y. W. Jia, S. Selimovic, A. Rowat, J.y Agresti, D. A. Weitz, Manipulation of fluids, fluid components and reactions in microfluidic systems, **US PATENT**, No. 10960397, Mar 30, 2021 (Licensed to RainDance Technologies, USA)
16. S. Fraden, H. Boukellal, Y. W. Jia, S. Selimovic, A. Rowat, J.y Agresti, D. A. Weitz, Manipulation of fluids, fluid components and reactions in microfluidic systems, **US PATENT**, No. 10675626, Jun 9, 2020 (Licensed to RainDance Technologies, USA)
17. Y. W. Jia, J. Zhai, P. I. Mak and R. Martins, Flexible Drug Delivery on Digital Microfluidics for Drug Screening, **US PROVISIONAL PATENT** No. 202110074407.9, 2020
18. S. Fraden, H. Boukellal, Y. W. Jia, S. Selimovic, A. Rowat, J. Agresti, D. A. Weitz, Manipulation of fluids, fluid components and reactions in microfluidic systems, **US PATENT**, No. 10357772, July 23, 2019 (Licensed to RainDance Technologies, USA)
19. S. Fraden, H. Boukellal, Y. W. Jia, S. Selimovic, A. Rowat, J.y Agresti, D. A. Weitz, Manipulation of fluids, fluid components and reactions in microfluidic systems, **US PATENT**, No. 10286396, May 14, 2019 (Licensed to RainDance Technologies, USA)
20. Y. W. Jia, R. Shen, P. I. Mak and R. Martins, Chip to Release on Amplification – A Novel Polymerase Chain Reaction Enhancer, **US PROVISIONAL PATENT** No. 62849173, May 17, 2019.
21. Y. W. Jia, L. Wan, et al., Ultrafast PCR on Digital Microfluidic Chip with Sloppy Temperature Control, **US Provisional Patent** No. 62677071, 28 May 2018
22. C. Dong, T. L. Chen, J. Gao, Y. W. Jia, P. I. Mak, M. I. Vai, R. Martins, Cooperative-electrode Driving Technique for Droplet-velocity Improvement of Digital Microfluidic Systems, **US PATENT**, No. 10016759 , Jul 10, 2018 (Licensed to DigiFluidic Biotech Ltd., China)
23. T. L. Chen, C. Dong, J. Gao, Y. W. Jia, P. I. Mak, M. I. Vai, R. Martins, Electrode-voltage Waveform for Droplet-Velocity and Chip-lifetime Improvements of Digital Microfluidic Systems, **US PATEN**T No. 9808800, Nov. 7, 2017 (Licensed to DigiFluidic Biotech Ltd., China)
24. L. J. Wangh, J. E. Rice, N. Rice, Y. W. Jia, Reagents and Methods for PCR, **US PATENT** No. 9758813, Sept 12, 2017 (Licensed to ThermaGenix Inc, USA)
25. J. Gao, T. L. Chen, C. Dong, Y. W. Jia, P. I. Mak, M. I. Vai, R. Martins, Electronic Module for Real-time Droplet-position Sensing and Driving in Digital Microfluidic System, **US PATENT** No. 9751083, Sept 5, 2017 (Licensed to DigiFluidic Biotech Ltd., China)
26. S. Fraden, H. Boukellal, Y. W. Jia, S. Selimovic, A. Rowat, J. Agresti, D. A. Weitz, Manipulation of Fluids, Fluid Components and Reactions in Microfluidic Systems, **US PATENT** No. 9588025, March 7, 2017 (Licensed to RainDance Technologies, USA)
27. Y. W. Jia, L. J. Wangh, J. A. Sanchez and J. Rice, Detecting Nucleic Acid Variations within Populations of Genomes, **US PATENT** No. 9169514, Oct. 23. 2015 (Licensed to ThermaGenix Inc, USA)
28. S. Fraden, H. Boukellal, Y. W. Jia, S. Selimovic, A. Rowat, J. Agresti, D. A. Weitz, Manipulation of Fluids, Fluid Components and Reactions in Microfluidic Systems, **US PATENT** No. 9068699, Issued date: June 30, 2015 (Licensed to RainDance Technologies, USA)
29. L. J. Wangh, J. Rice, N. Rice and Y. W. Jia, Reagents and Methods for PCR, **US PATENT** No. 9034605, Issued Date: May 19, 2015 (Licensed to ThermaGenix Inc, USA)

30. S. Fraden, Y. W. Jia, H. Boukellal, S. Selimovic, A. Rowat, J. Agresti, D. A. Weitz, Manipulation of Fluids, Fluid Components and Reactions in Microfluidic Systems, **US PATENT** No. 8592221, Issued date: Nov. 23, 2013 (Licensed to RainDance Technologies, USA)
31. X. Y. Liu and Y. W. Jia, Method for Prediction de novo Biomacromolecule Crystallization Conditions and for Crystallization of the Same, **SINGAPORE PATENT** No. 124995 (WO2005/080422); Issued date: Sept. 28, 2007

**Book Chapter**

1. C. Li, J. Zhai, Y. W. Jia*, Digital microfluidics with an on-chip dispenser for single or combinational drug screening, **Microfluidic Systems for Cancer Diagnosis**, 25-39, Springer Protocols, Humana Press, 2023

**Journal Papers** (*corresponding author)

1. N. Yang, M. F. Yuan, L. L. Xie, Y. W. Jia* and H. P. Mao*, An online IoT-based strawberry health monitoring system using adaptive leaf-soft measurement method performed on infrared thermal imaging sensors, **Journal of Science of Food and Agriculture,** submitted, 2024
2. M. Q. Liu, Y. W. Jia*, and Y. Zhang*, Selective and sensitive iodide sensing in aqueous solutions by peptide-functionalized plasmonic gold nanoparticles, **Biosensors and Bioelectronics**, submitted, 2024
3. G. W. Xing, S. Feng, Q. Zhang, X. Z. Yi, Z. N. Wu, Y. W. Jia*, J. M. Lin*, In-situ cell extraction-mass spectrometry for EpCAM analysis via DNA-mediated rolling circle amplification, **Analytical Chemistry**, submitted, 2024
4. X. C. Zhang, T. G. Li, S. H. Wang, Q. H. Ling, J. Y. Sun, N. Yang, Z. L. Fu, Z. Y. Zhang, S. Chen, Y. F. Wang, N. Yu, Y. F. Wang, Z. X. Ding, H. D. Liu, Y. W. Jia, Y. F. Wang, Cell viability, drug screening and mechanism study under photochemical coupling, **Journal of American Chemical Society**, submitted, 2024
5. G. W. Xing, Y. X. Li, H. R. Yao, Y. W. Jia*, J. M. Lin*, establishing hydrogel-based physiological barriers for modelling the gut-brain-axis in a microchip, **Lab on a Chip**, submitted.
6. C. W. Li, N. Shi, S. Andaluz, Y. Lu, P. I. Mak, R. P. Martins, Y. W. Jia*, Portable integrated digital microfluidic system for on-chip rapid antibiotic susceptibility testing, **Biosensors and Bioelectronics**, submitted.
7. Y. Y. Liu, A. M. Lyu, J. J. Wu, X. Y. Wang, Y. Liu, P. I. Mak, R. P. Martins, R. H. Xu,* Y. W. Jia*, Wound healing accelerated by stem cell bandage stored at room temperature, **Science Advances**, submitted
8. W. Z. Wang, Y .H. Zhang, M. Yu, P. Xiu, Y. W. Jia, H. Chen, S. M. Le*, J. Qian*, J. Yan*, Salt-bridge mediated cooperativity and mechanical stabilization of tandem spectrin repeats, **Advanced Science**, submitted.
9. W. H. Hui, K. M. Lei, Y. Y. Liu, X. R. Huang, Y. L. Zhong, X. J. Chen, P. I. Mak, R. P. Martins, S. H. Yi*, P. Wang*, Y. W. Jia*, 1C-EIS chip: single-cell electric impedance sensing on a semiconductor chip for cell identification and cancer drug screening, **Nature Communications**, major revision, 2024
10. T. Peng, Z. X. Zhang, S. Yuan, J. Qiang, Y. W. Jia*, Investigation on sheathless inertial focusing within low-aspect ratio spiral microchannel for cascaded microfluidic tumor cell separation, **Physics of Fluids**, 36, 077153, 2024
11. R. Shen, Y. M. Fang, C. X. Yang, Q. D. Wei, P. I. Mak, R. P. Martins, Y. W. Jia*, UV-assisted ratiometric fluorescence sensor for one-pot visual detection of Salmonella, **Chinese Chemical Letters**, https://doi.org/10.1016/j.cclet.2024.110143, 2024
12. Y. P. Xia, R. T. Rao, M. Q. Xiong, B. S. He, B. X. Zheng, Y. W. Jia, Y. Li, Y. H. Yang, CRISPR-powered strategies for amplification-free diagnostics of infectious diseases, **Analytical Chemistry**, 96, 8091-8108, 2024

13. J. Zhai, Y. Y. Liu, W. Q. Ji, X. R. Huang, P. Wang, Y. Y. Li, H. R. Li, A. H. H. Wong, X. Zhou, L. H. Wang, N. Yang, C. Chen, H. T. Chen, P. I. Mak, C. X. Deng, R. Martins, M. S. Yang, S. H. Yi, H. L. Yao, T. Y. Ho, Y. W. Jia*, Drug screening on digital microfluidics for cancer precision medicine, **Nature Communications**, 15, 4363, 2024
14. M. Q. Liu, H. Y. Zhunag, Y. Zhang, Y. W. Jia*, A sandwich FRET biosensor for lysozyme detection based on peptide-functionalized bold nanoparticles and FAM-labeled aptamer, **Talanta**, 276, 126226, 2024
15. R. Shen, W. H. Hui, W. G. Wu, N. Yang, X. D. Lin, P. I. Mak, R. P. Martins, A. Q. Liu, Y. W. Jia*, A cost-effective and field-deployable sensing system for chip-integrated detection of bacteria with the naked eye, **Sensors and Actuators B**, 410, 135668, 2024
16. T. Peng*, X. D. Lin, L. M. Li, L. Huang, B. Y. Jiang*, Y. W. Jia*, Investigation on submicron particle separation and deflection using tilted-angle standing surface acoustic wave microfluidics, **Heliyon**, 10, e25042, 2024
17. H. Jiang, C. C. Tsoi, L. R. Sun, W. X. Yu, H. Fan, M. C. Ma, Y. W. Jia, X. M. Zhang*, Biomimetic curved artificial compound eyes: a review, **Advanced Devices & Instrumentation**, https://doi.org/10.34133/adi.0034, 2024
18. T. Peng, C. X. Zhou, Z. X. Zhang, Y. Y. Liu, X. D. Lin, Y. Q. Ye, Y. L. Zhong, P. Wang*, Y. W. Jia*, Bile dynamics within the biliary tract and microfluidic-based bile component detection: a review, **Biomicrofluidics**, 18, 014105, 2024
19. L. Meng, M. Z. Li, Z. Y. Xu, A. M. Lv, Y. W. Jia, M. W. Chen, P. I. Mak, R. P. Martins, M. K. Law, Absolute Quantification of Nucleic Acid on Digital Microfluidics Platform Based on Superhydrophobic–Superhydrophilic Micropatterning, **Sensors and Actuators B**, 402, 135079, 2024
20. Y. J. Zhu, F. J. Xie, T. C. K. Wun, K. C. Li, H. Lin, C. C. Tsoi, H. P. Jia, Y. Chai, Q. Zhao. B. T. Lo, S. Y. Leu, Y. W. Jia, K. N. Ren, and X. M. Zhang*, Bio-inspired microreactors continuously synthesize glucose precursor from CO2 with an energy conversion efficiency 3.3 times of rice, **Advanced Science**, 11(6), 2470037, 2024
21. T. Peng, Y. L. Zhong, X. D. Lin, F. Z. Jiang, B. Y. Jiang, P. Wang*, Y. W. Jia*, Analysis and numerical investigation of bile flow dynamics within the strictured biliary duct, **International Journal of Numerical Methods in Biomedical Engineering**, e3790, 2023, **(Cover Story** https://doi.org/10.1002/cnm.3829 **)**
22. H. R. Li, T. Peng, Y. L. Zhong, M. Q. Liu, P. I. Mak, R. P. Martins, P. Wang*, Y. W. Jia*, pH regulation on digital microfluidics with pico-dosing technique, **Biosensors**, 13, 951, 2023
23. L. Wan, M. Z. Li, M. K. Law, P. I. Mak, R. P. Martins, Y. W. Jia*, Sub-5-minute ultrafast PCR using digital microfluidics, **Biosensors and Bioelectronics**, 242, 115711, 2023
24. T. Peng, X. D. Lin, S. Yuan, M. Y. Zhou, B. Y. Jiang, Y. W. Jia*, Mixing enhancement in a straight microchannel with ultrasonically activated attached bubbles, **International Journal of Heat and Mass Transfer**, 217, 124635, 2023
25. X. L. Chen, R. J. Deng, D. D. su, X. C. Ma, X. Han. S. Z. Wang, Y. Q. Xia, Z. F. Yang, Y. W. Jia, X. Y. Gao, X. J. Ren*, Visual genetic typing of glioma using proximity-anchored in situ spectral coding amplification, **Exploration**, https://doi.org/10.1002/EXP.20220175, 2023.
26. J. Hu, E.L. Song, Y.H. Liu, Q.C. Yang, H.H. Sun, J.N. Chen, Y. Meng, Y.W. Jia, Z.G. Yu, Y. Ran, L.Y. Shao, P. P. Shum, Fiber Laser-Based Lasso-Shaped Biosensor for High Precision Detection of Cancer Biomarker-CEACAM5 in Serum, **Biosensors**, 13 (7), 674, 2023.
27. X. D. Lin*, M. Y. Zhao, T. Peng, P. Zhang, R. Shen, Y. W. Jia*, Detection and discrimination of pathogenic bacteria with nanomaterials-based optical biosensors: a review, **Food Chemistry**, 426, 136578, 2023
28. X. D. Lin*, H. T. Wu, S.Y. Zeng , T Peng, P Zhang, X. Wan, Y Lang, B Zhang, Y. W. Jia, R Shen, B. Yin*, A self-designed device integrated with a Fermat spiral microfluidic chip for ratiometric and

automated point-of-care testing of anthrax biomarker in real samples, **Biosensors and Bioelectronics**, 230，115283, 2023

29. R. Shen, A. M. Lyu, S. H. Yi, P. Wang, P. I. Mak, R. P. Martins, Y. W. Jia*, Nucleic acid analysis on electrowetting-based digital microfluidics, **Trends in Analytical Chemistry**, 158, 116826, 2023
30. N. Yang, T. W. Li, S. Z. Dong, S. L. Zhang, Y. W. Jia*, H. P. Mao*, Z. Zhang*, F. Zhang, X. Q. Pan, X. D. Zhang, and Zining Dong, Detection of airborne pathogens with single photon counting and real-time spectrometer on microfluidics, **Lab on a Chip**, 22, 4995, 2022
31. N. Yang, K. P. Chang, S. Z. Dong, J. Tang*, A. Y. Wang, R. B. Huang, Y. W. Jia*, Rapid image detection and recognition of rice false smut based on mobile smart devices with anti-light features from cloud database, **Biosystems Engineering**, 218, 229-244, 2022
32. K. U. Wong, J. X. Shi, P. Li, H. T. Wang, Y. W. Jia, C. X. Deng, L. M. Jiang, A. H. H. Wong, Assessment of Chimeric antigen receptor T (CAR-T) cytotoxicity by droplet microfluidics in vitro, **Antibody Therapeutics**, 5(2), 85-99, 2022
33. M. Q. Liu, R. Shen, H. R. Li, Y. W. Jia*, P. I. Mak, and R. Martins, Ratiometric fluorescence analysis for miR-141 detection with hairpin DNA-templated silver nanoclusters, **Journal of Materials Chemistry C**, 10, 655, 2022.
34. M. Z. Li, L. Wan, M. K. Law*, L. Meng, Y. W. Jia*, P. I. Mak, and R. Martins, One-shot high resolution melting curve analysis for Kras point-mutation discrimination on a digital microfluidic platform, **Lab on a Chip**, 22, 537, 2022 **(Cover Story)**
35. J. Zhai, C. W. Li, H. R. Li, S. H. Yi, N. Yang, K. Miao, C. X. Deng, Y. W. Jia*, P. I. Mak, and R. Martins, Cancer drug screening with an on-chip multi-drug dispenser in digital microfluidics, **Lab on a Chip**, 21, 4749, 2021 **(Cover Story)**
36. N. Yang, W. H. Hui, S. Z. Dong, X. M. Zhang, L. Y. Shao, Y. W. Jia*, P. I. Mak and R. Martins, Temperature tolerance electric cell-substrate impedance sensing (ECIS) for joint assessment of cell viability and vitality, **ACS Sensors**, 6, 10, 3640-3649, 2021 **(Cover Story)**
37. M. Q. Liu, H. R. Li, Y. W. Jia*, P. I. Mak and R. P. Martins, SARS-CoV-2 RNA detection with duplex-specific nuclease signal amplification, **Micromachines**, 12, 197, 2021.
38. H. R. Li, R. Shen, Y. W. Jia*, P. I. Mak, R. P. Martins, Turning on/off satellite droplet ejection for flexible sample delivery on digital microfluidics, **Lab on a Chip,** 20,3709-3719, 2020 **(Cover Story)**
39. J. Zhai, H. R. Li, A. H. H. Wong, C. Dong, S. H. Yi, Y. W. Jia*, P. I. Mak, C. X. Deng and R. P. Martins, A novel and robust single-cell trapping method on digital microfluidics, **Bio-protocol**, 10(19): e3769, 2020.
40. C. C. Tsoi, X. W. Huang, P. H. M. Leung, N. Wang, W. X. Yu, Y. W. Jia, Z. H. Li and X. M. Zhang, Photocatalytic ozonation for sea water decontamination, **Journal of Water Process Engineering**, 37, 101501, 2020.
41. R. Shen, Y. W. Jia*, P. I. Mak, and R. P. Martins, Clip to release on amplification (CRoA): a novel enhancer for DNA amplification on and off microfluidics, **Lab on a Chip**, 20, 1928-1938, 2020 **(Cover Story)**
42. Q. M. Chen, X. L. Tong, Y. J. Zhu, C. C. Tsoi, Y. W. Jia, Z. H. Li, and X. M. Zhang, Aberration-free aspherical tunable liquid lenses by regulating local curvatures, **Lab on a Chip**, 20, 995-1001, 2020.
43. J. Zhai, H. R. Li, A. H. H. Wong, C. Dong, S. H. Yi, Y. W. Jia*, P. I. Mak, C. X. Deng and R. P. Martins, A digital microfluidic system with 3D microstructures for single-cell culture, **Microsystems and Nanoengineering**, 6, 6, 2020.
44. Y. J. Zhu, Q. M. Chen, L. Y. Shao, Y. W. Jia, and X. M. Zhang, Microfluiidc immobilized enzyme reactors for continuous biocatalysis, **Reaction Chemistry and Engineering**, 5, 9-32, 2020 **(Cover Story)**

45. Y. J. Zhu, Z. Huang, Q. Chen, Q. Wu, X. Huang, P. So, L. Shao, Z. Yao, Y. W. Jia, Z. Li, W. Yu, Y. Yang, A. Jian, S. Sang, W. Zhang, X. M. Zhang, Continuous artificial synthesis of glucose precursor using enzyme-immobilized microfluidic reactors, **Nature Communications**, 10, 4049, 2019.
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**Conference Presentations**

1. W. H. Hui, Y. W. Jia, single-cell electric impedance sensor based on integrated circuit chip, Oral presentation, microFIP 2024, Hong Kong, June. 2024
2. A. M. Lyu, Y. W. Jia, Deep droplet digital LAMP (dddLAMP) by omni-directional ejection on digital microfluidics, Oral presentation, microFIP 2024, Hong Kong, June. 2024
3. Y. F. Wang, Y. W. Jia, High-throughput and low-cost orthogonal electrode matrix digital microfluidics chip, Oral presentation, microFIP 2024, Hong Kong, June. 2024
4. Yanwei Jia, Digital microfluidics for precision medicine, **Invited Speaker**, IEEE NANOMED, Okinawa, Japan, 2023
5. W. H. Hui, A. Lyu, Y. Y. Liu, P. I. Mak, R. P. Martins, Y. W. Jia, single-cell electric impedance sensor based on integrated circuit chip, Oral presentation, microTAS 2023, Poland, Oct. 2023
6. C. W. Li, N. Shi, Y. Y. Liu, Y. Lu, P. I. Mak, R. P. Martins, Y. W. Jia, A portable integrated system for on-chip antibiotic susceptibility testing, Poster presentation, microTAS 2023, Poland, Oct. 2023
7. Y. Y. Liu, P. I. Mak, R. P. Martins, Y. W. Jia, Drug screening of primary tumor cells on smart digital microfluidics for cancer precision medicine, Poster presentation, microTAS 2023, Poland, Oct. 2023
8. T. Peng, Y. W. Jia, Investigation on particle deflection in surface acoustic wave microfluidic device for efficient exosome extraction, Poster presentation, microTAS 2023, Poland, Oct. 2023

9. Y. F. Wang, C. C. Tsoi, X. D. Lin, H. R. Li, R. Shen, X. M. Zhang, Y. W. Jia, High-throughput and low-cost orthogonal electrode matrix digital microfluidic chip, Poster presentation, microTAS 2023, Poland, Oct. 2023
10. Yanwei Jia, Digital microfluidics for precision medicine, **Keynote Speaker**, BCEIA 2023, Sept. 2023
11. Yanwei Jia, Digital microfluidics for precision medicine, **Invited Speaker**, iCANX Youth Talk, May 2023
12. Yanwei Jia, Digital microfluidics for cancer drug screening, **Invited Speaker,** 微纳米技术与医疗健康创新大会暨中国微米纳米技术学会第六届微米纳米技术应用创新大会, Apr. 2023
13. Ren Shen, Yanwei Jia, Pui-In Mak, Rui Martins, Naked eye observation of PCR on digital microfluidics with CRoA, microTAS, online, Oct. 2020
14. Ren Shen, Yanwei Jia, Pui-In Mak, Rui Martins, Digital microfluidics for precision medicine, **Invited Speaker**, 2019 EMN Meeting on Droplets, Chengdu, China, Dec. 2019
15. Yanwei Jia, Digital microfluidics for precision medicine, **Invited Speaker**, 第三届微流控技术应用创新论坛, Xiamen, China, Dec. 2019
16. Jiao Zhai, Yanwei Jia, Pui-In Mak, Rui Martins, Digital microfluidic drug screening on biopsies from xenograft mouse breast cancer, Poster presentation, microTAS 2019, Switzerland, Oct. 2019
17. Liang Wan, Tianlan Chen, Haoran Li, Ren Shen, Cheng Dong, Yanwei Jia, Pui-In Mak, and Rui Martins, A dual-heater digital microfluidic system for fast polymerase chain reaction with sloppy temperature control, Poster presentation, microTAS 2019, Switzerland, Oct. 2019
18. Ren Shen, Yanwei Jia, Pui-In Mak and Rui Martins, Hairpin-structured PCR enhancer for microfluidic platforms, Poster presentation, microTAS 2019, Switzerland, Oct. 2019
19. Yanwei Jia, Cell-based drug screening on microfluidics, **Keynote Speaker**, The second symposium for cell analysis on micro/nanofluidics, Beijing, Sept. 2019.
20. Yanwei Jia, Digital microfluidics for disease diagnostics, **Invited Speaker**, IMCO 2019, Hong Kong, Jun., 2019
21. Ren Shen, Yanwei Jia, Pui-In Mak, Rui Martins, Hairpin-structured PCR enhancer for digital microfluidic systems, Poster presentation, IMCO 2019, Hong Kong, Jun., 2019
22. Jiao Zhai, Yanwei Jia, Pui-In Mak, Rui Martins, Digital microfluidic system for single cell culture and drug screening, Poster presentation, IMCO 2019, Hong Kong, Jun., 2019
23. Haoran, Li, Ren Shen, Tianlan Chen, Cheng Dong, Yanwei Jia, Pui-In Mak, Rui P. Martins, Electric-controlled precise and flexible sample delivery on DMF, Oral presentation, IMCO 2019, Hong Kong, Jun., 2019
24. Jiao Zhai, Yunyi Li, Cheng Dong, Haoran Li, Yanwei Jia, Pui-In Mak and Rui P. Martins, 3D Microstructures to Realize Single Cell Culture on Digital Microfluidic Chip for Precision Medicine, Poster presentation, microTAS 2018, Kaohsiung, Taiwan, Nov. 2018.
25. Haoran Li, Yanwei Jia, Ren Shen, Tianlan Chen, Cheng Dong, Pui-In Mak, Rui P. Martins, On-chip Pico-pipette: A Method for Precise Delivery in a DMF system, Poster presentation, microTAS 2018, Kaohsiung, Taiwan, Nov. 2018.
26. Liang Wan, Haoran Li, Tianlan Chen, Cheng Dong, Yanwei Jia, Pui-In Mak, Rui Martins, In-minutes Polymerase Chain Reaction With Specific Dna Amplification On Digital Microfluidics With Sloppy Temperature Control, Poster presentation, APCOT 2018, Hong Kong, June 2018
27. Yanwei Jia, Intelligent Digital Microfluidics, **Keynote Speaker**, APCOT 2018, Hong Kong, June 2018
28. Yanwei Jia, Development of Digital Microfluidic Systems for Disease Diagnostics**, Invited Speaker**, *BIT's 8th World Convention*, Macau, Nov 2017.

29. Liang Wan, Tianlan Chen, Jie Gao, Cheng dong, Yanwei Jia, Pui-In Mak, Rui P. Martins, Digital Microfluidic Platform for False-Positivie-Free Loop-Mediated Isothermal Amplification, *microTAS*, Savannah, USA, Oct_2017
30. Tianlan Chen, Jie Gao, Cheng Dong, Yanwei Jia, Pui-In Mak, Rui P. Martins, "Digital Microfluidic System with Intelligent Control for Ultrafast DNA Analysis", *Oral Presentation at the 8th International Symposium on Microchemistry and Microsystems (ISMM)*, Hong Kong, May-2016
31. Ada Hang-Heng Wong, Yanwei Jia, Chuxia Deng, "Detection of cellular drug response on microfluidic chip for personalized cancer therapy", *the 8th International Symposium on Microchemistry and Microsystems (ISMM)*, Hong Kong, May-2016
32. Cheng Dong, Yanwei Jia, Tianlan Chen, Jie Gao, Liang Wan, Pui-In Mak, Mang-I Vai, Rui P.Martins, "Precise Droplet Splitting on Digital Microfluidic Chip with Blade Structures", *microTAS*, Dublin, Ireland, Oct_2016
33. Tianlan Chen, Yanwei Jia, Cheng Dong, Jie Gao, Liang Wan, Pui-In Mak and Rui P. Martins, "A Calibration-free Thermal Digital Microfluidic Device for Ultrafast DNA Melting Curve Analysis", *microTAS*, Dublin, Ireland, Oct-2016
34. Jie Gao, Liang Wan, Yanwei Jia, Tianlan Chen, Cheng Dong, Haoran Li, Shun Liu, Pui-In Mak and Rui P. Martins, "A Thermal Digital Microfluidic Device and Its Application to Disease Diagnostics", *Lab on a Chip International Symposium: Droplet-based Microfluidics*, Hang Zhou, China, Nov-2016
35. Liang Wan, Tianlan Chen, Jie Gao, Cheng Dong, Yanwei Jia, Pui-In Mak and Rui P. Martins, "Digital microfluidic system for LAMP-based detection of Trypanosoma brucei using molecular beacon probes", *Lab on a Chip International Symposium: Droplet-based Microfluidics*, Hang Zhou, China, Nov-2016

**Community Services**

- Non-residential Fellow in Choi Kai Yao College, 2016 – present
- Board member of Zhuhai University of Macau Research Institute, 2017 – 2020
- Member of UM Scholarship committee, 2019 - present
- Member of UM Ethic Committee, 2020 – present
- Member of ZUMRI Ethic Committee, 2023 - present
- Member of UM patent review panel, 2016 – 2018
- Member of Ph.D. Oral defense committee, 2016 – present
- Member of Ph.D. proposal evaluation, 2016 – present
- Member of Ph.D. qualifying exam, 2016 – present
- Member of master thesis committee, 2020 – present

**Professional Services**

- Session chair, iCANX Youth Talks, 2023 - 2024
- Technical Committee member, microTAS, 2023-2026
- Grant reviewer for Singapore Food Agency, 2020
- Grant reviewer for Hong Kong RAISe, 2024-2026
- Technical committee member, The 9$^{th}$ International Multidisciplinary Conference on Optofluidics, 2019
- Session chair, The 9$^{th}$ International Multidisciplinary Conference on Optofluidics, 2019
- Committee member of Nansha postdoctoral fellow intake review panel, 2019
- Technical committee member, The 9$^{th}$ conference of Transducers and Micro-Nano Technology, 2018

- Session chair, The 9th conference of Transducers and Micro-Nano Technology, 2018
- Reviewer for the following journals
  - Nature Communications
  - Advanced Science
  - Chemical Science
  - ACS Sensors
  - Lab on a Chip
  - Bioengineering Translational Medicine
  - Chemical Engineering Journal
  - Analytical Chemistry
  - Small Methods
  - Chemical Communications
  - ACS Applied Materials & Interfaces
  - Chemical Society Reviews
  - Analytica chimica acta
  - Analytical Methods
  - Biosensors
  - Microfluidics and Nanofluidics
  - Biomicrofluidics
  - Scientific Reports
  - IEEE Journal of Radio Frequency Identification
  - Sensors
  - Critical Review in Clinical Laboratory Sciences
  - Microchimica Acta
  - Molecules
  - Expert Opinion on Drug Discovery
  - Australian plant pathology
  - IJERPH
  - Langmuir
  - Biophysical Journal