# My journey in cytometry

My journey in cytometry spans 13 years across three distinct career stages, each building upon the last to advance the field from portable hardware to high-content data for the AI era.

**PhD (Tsinghua University, 2012–2017): MEMS and Portable Flow Cytometry**
As a PhD student, I focused on developing next-generation, MEMS-based flow cytometers. My goal was to create a truly portable device, enabling cytometry for anyone, anytime, anywhere. My research led to several key microfluidic innovations, including a high-speed 3D hydrodynamic focusing chip, an on-chip microbubble sorter, a multi-laser diffractive beam shaper, a micro-spectrometer, and a novel method for fabricating multi-layer glass chips. This foundational work, which I aspired to share at CYTO conferences, ignited my lifelong passion, and my advisor's introduction to ISAC embedded me in a community of fellow enthusiasts.

**Postdoc (Stanford Medicine, 2018–2023): Advancing Imaging Flow Cytometry**
My postdoctoral research at Stanford specialized in pushing the boundaries of biomedical microscopic imaging using structured illumination and diffractive optics. While I contributed to developing needle-shaped beams for Optical Coherence Tomography (OCT), my passion for cytometry led to a significant innovation: the Linear Array Spot Excitation (LASE) method, a novel approach for imaging flow cytometry, built on a simple yet powerful principle, simultaneously supporting multi-laser excitation, multi-fluorescence detections, and scattering light detections. In 2021, I was honored to be selected for the ISAC International Innovator Program, an opportunity that allowed me to begin giving back to the society that has been central to my career.

**Professor (HUST, Present): High-Content Cytometry for the AI Era**
Now, as a professor at Huazhong University of Science and Technology, I am dedicated to addressing critical clinical challenges by advancing cytometry and cell imaging. My team is currently developing a high-spectral imaging flow cytometer, capable of 2D and 3D high-resolution imaging with full spectral imaging capability. We aim to generate high-content, high-quality cell data efficiently, which we believe is essential for the age of AI. Our ultimate vision is to leverage such data to build AI virtual cells (AIVC), transforming traditional wet-lab experiments into explorations in a silicon lab—with transformative potential for drug discovery and development, personalized medicine, synthetic biology, cell therapy, disease modeling, and agriculture.

Over the past 13 years, cytometry has been my central research focus, and I view this as just the beginning. As I establish my own laboratory in China, I remain a humble student of this vast domain and am fully committed to devoting my career to cytometry, alongside my fellow ISAC members.

3/31/2026

# Contributions/role in ISAC

**Participation in CYTO**

I have been fortunate to attend every CYTO conference since 2017, along with other CYTO-connect events such as CYTO Asia 2017 and the ACS CYTO Connect 2025. Over the years, I've had the opportunity to contribute more than 15 oral and poster presentations.

**Service to the Society**

In 2021, I was honored to be selected as an ISAC Innovator and to join the Innovation Committee. Between 2022 and 2024, I helped organize the Innovation Story Webinars, and I was delighted to see one webinar attract over 120 attendees. I also began serving on the CYTO Organizing Committee in 2022. Since 2024, I have been serving as an Associate Editor for *Cytometry Part A*, focusing on technology-related topics. I am also privileged to serve as Co-Chair for CYTO 2026 also the editor of special issue of *Cytometry Part A - CYTO 2026*.

**Contributions as Committee Chair**

Since becoming Chair of the Innovation Committee in 2024, I have worked to welcome researchers—particularly early-career colleagues—from diverse institutions and fields. It has been rewarding to help build a multidisciplinary committee of 36 members from across the globe, representing expertise in technological innovation, biomedical applications, data science, medicine, and standardization science. Together, we have supported initiatives such as the Technology Showcase, the Innovation Story Webinar series, and the International Innovators program. This year, we are excited to launch the Tech Trend Discussion, a new forum for committee members to exchange ideas on emerging cytometry technologies, one topic at a time.

**Mentoring Students**

I currently lead a research group at Huazhong University of Science and Technology, where I am privileged to mentor six talented students working in cytometry. Their backgrounds span biology, medicine, physics, AI, optics, and engineering—reflecting the interdisciplinary nature of our field. Previously, I had the pleasure of co-advising four PhD students whose dissertations focused on cytometry innovation. I am proud that all of my students have presented at conferences of the Chinese Cytometry Society, and six have had the opportunity to present at CYTO conferences.

**Future Vision**

ISAC has a unique opportunity to strengthen its role as the global leader in cytometry innovation by continuing to break down barriers between technologies and biomedical applications. Recruiting talented early-career scholars into the Innovation Committee and nurturing them into leadership roles within ISAC will infuse fresh, interdisciplinary perspectives across the organization. By inviting distinguished researchers to CYTO, we can elevate it into a flagship forum that attracts innovators worldwide. Expanded webinars, panel discussions, and internal Tech forums will foster the dialogue needed to generate forward-thinking ideas. Together, we can build an ISAC where innovation flows seamlessly across committees, empowering the next generation to shape the future of cytometry.

# My vision as council member: three pillars for ISAC's innovation future

**1. Bring Innovation to Everywhere at ISAC**

Cultivate a society-wide culture of innovation and accelerate the translation of emerging technologies from bench to practice.

- Within the **Innovation Committee**, organize **Tech Trend Discussions** open to all ISAC members, each focusing on a cutting-edge topic (e.g., high-spectral imaging, AI-driven analysis, microfluidic innovations). These sessions are designed to be inclusive and encourage active participation across disciplines.
- Extend these discussions to the **CYTO Conference** by creating dedicated sessions, forming a seamless loop from regular dialogue to conference-level exchange and beyond.
- Foster **cross-committee collaboration** between the Innovation Committee and other ISAC committees (Education, etc.), ensuring that innovation perspectives are embedded into every facet of the society's work.

**2. Empower Young Scholars**

Proactively recruit talented early-career researchers, support their growth within ISAC, and help them become long-term contributors and leaders.

- Actively reach out to **young scholars at the forefront of technological innovation**—especially those from diverse institutions, fields, and regions—inviting them to join ISAC. Initially engage them through the **Innovation Committee**, where they can connect with peers and feel a strong sense of belonging.
- Establish a **joint mentoring pathway** across committees: after young scholars gain experience in the Innovation Committee, support their transition into other committees (e.g., Education, LDP) based on their interests and expertise. This **spreads innovation ideas to every corner of ISAC** while providing members with broad leadership exposure.
- Retain talent by offering **mentorship pairing, opportunities to lead projects, and support for CYTO attendance**, strengthening their commitment to ISAC and expanding the society's influence among the next generation.

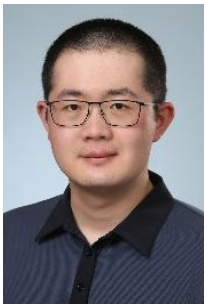
**3. Make ISAC the Global Innovation Hub in Cellular Analysis**

Position ISAC as the world's central forum for innovation, bringing together leading minds and driving the field forward.

- Continue to strengthen signature programs such as the **Technology Showcase**, providing a high-visibility platform for emerging technologies and connecting developers with potential users and partners.
- **Invite distinguished scholars from around the world** to participate in ISAC's online events and deliver keynote presentations at the CYTO Annual Meeting. This not only elevates the scientific caliber of CYTO but also attracts top talent to engage with ISAC.
- Build a **year-round innovation ecosystem** that blends virtual and in-person interactions. Leverage existing platforms such as Innovation Story Webinars and Tech Trend Discussions to keep the innovation conversation active beyond the annual meeting, transforming ISAC into a truly **globally connected hub**.

As a Chinese scholar who has benefited from international collaboration and ISAC's support, I am committed to building bridges across regions and disciplines. These three pillars—**innovation everywhere**, **young scholars**, and **ISAC as the global innovation hub**—will guide my service as Council Member, ensuring that our society remains inclusive, forward-looking, and impactful for years to come.

# Jingjing Zhao



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Chair of Innovation Committee, International Society for Advancement of Cytometry (ISAC)

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## PROFESSIONAL EXPERIENCES

**2023.12-Present, Professor, School of Medical Equipment Science and Engineering, College of Life Science and Technology (by courtesy), School of Mechanical Science and Engineering (by courtesy), Huazhong University of Science and Technology, China**

- Rapid intraoperative pathological detection of tumour margins using cell vibration spectroscopy and optical coherence tomography
- Early Screening and Mass Screening Programme for Malignant Haematological Disorders Based on Spectral Imaging Flow Cytometry
- Micro-Nano Diffractive Optics Theory and Devices: Super-Resolution Pin-Shaped/Three-Dimensional Irregular Beams, Micro-Nano Fabrication

**2023.5-2023.11, Research Scientist, Adam de la Zerda Group at Stanford University School of Medicine, Palo Alto, USA**

- Virtual biopsy by FF-OCT and AI

**2018.5-2023.4, Postdoctoral Researcher, Adam de la Zerda Group at Stanford University School of Medicine, Palo Alto, USA**

- Needle-shaped beam OCT for skin cancer diagnosis
- Invention of needle-shaped beam and its application in biomedical microscopes

**2018.5-2023.11, Project Leader, MEMS flow cytometer project, Tsinghua University, China**

- Spectral imaging flow cytometer using linear array spot excitation (LASE) and MEMS

**2017.11-2018.4, Postdoctoral Researcher, Huaqiang Wu Group, Tsinghua University, China**

- Microfluidic sorting flow cytometer

**2021.1-2024.1, Leadership Development Program, International Society for Advancement of Cytometry**

- Organization of webinars, selection of Inventor Awards, organization of annual conferences, etc.

## EDUCATION

**2012.9-2017.10, Ph.D. in Instrumental Science and Technology, Zheng You Group, Tsinghua University, China**

- Research on hydrodynamic focusing, beam shaping, and on-chip sorting of microfluidic flow cytometer
- GPA: 92.5/100 (Rank: 1/17)

**2008.9-2012.6, Bachelor in Mechatronics, Beijing Institute of Technology, Beijing, China**

- Design, Fabrication and Implementation of a Micro Magnetic Generator
- GPA: 93.2/100 (Rank: 1/223)

**2022.1-2022.4, Ignite Program, Stanford University Graduate School of Business**

## ACADEMIC SERVICES

- 2025-Present, Co-Chair of the 39th 2026 CYTO Annual Meeting of the International Society for Advancement of Cytometry (ISAC)
- 2024-Present, Chair of Innovation Committee, International Society for Advancement of Cytometry (ISAC)
- 2024-Present, Committee member of the Cell Analysis Professional Committee, Chinese Society for Biotechnology
- 2024-Present, Council Member, Micro-Nano Optical Devices and Systems Committee, Chinese Society of Micro-Nano Technology
- 2024-Present, Member of Biomedical Photonics Committee, The Chinese Optical Society
- 2022-Present, Member of Organizing Committee, ISAC CYTO Annual Congress
- 2023-2024, Committee member for the 30th and 31st Cytometry Development Workshop
- 2021-2024, Member of Innovation Committee, International Society for Advancement of Cytometry
- Associate Editor of Cytometry Part A, Special Issue Executive Editor of Cytometry Part A-CYTO 2026, Youth Editorial Board Member of Biomedical Engineering Frontiers
- 2022-Present, Session Chair, SPIE West Photonics, CYTO Conferences, CDW.
- Reviewers for Nature BME, Optica, Cytometry Part A, ACS Nano, Microsystems & Nanoengineering, Theranostics, BMO, Scientific Reports.

## RESEARCH PROJECT

- National Natural Science Foundation of China (NSFC) General Program: Fluorescence and Label-free Microscopic Imaging Methods for High-throughput, High-resolution Imaging Flow Cytometry, 2026–2029, Principal Investigator
- National Natural Science Foundation of China, 2024–2027, Principal Investigator
- Huazhong University of Science and Technology, High-level Startup Fund, 2024–2027, Principal Investigator
- Hubei Provincial Technology Innovation Program Project: Development of an Imaging Flow Cytometry and Microfluidic Sorting System for Whole Blood Samples, 2024–2027, Principal Investigator
- National Key Laboratory of Intelligent Manufacturing Equipment and Technology, Basic Research Fund: All-glass Microfluidic Chip Fabrication Process, 2024, Principal Investigator
- Stanford University, Bio-X Interdisciplinary Initiatives Seed Grant, IIP6-43: Non-invasive Virtual Biopsy for Basal Cell Carcinoma Diagnosis Using Machine Learning, 2022–Present, Sub-project Principal Investigator
- Discovery Innovation Fund (USA), Medical Brain Imaging Technology Research: 3D Brain Tumor Mapping with Single-cell Resolution as a Neurosurgical Tool, 2022–Present, Sub-project Principal Investigator
- US National Institutes of Health, NIH Director's Early Independence Award, DP5 OD031858: OCT as a Platform for Non-invasive Virtual H&E Biopsy, 2021–present, Participant
- Claire Giannini Foundation (USA), Clinical Medical Imaging Technology Research: Bringing SM-OCT to the Operating Room, 2019–2022, Sub-project Principal Investigator
- Chan Zuckerberg Biohub (USA), General Medical Imaging Technology Research: Imaging Cell-to-cell Signaling at the Cellular Level in Living Subjects, 2017–2022, Sub-project Principal Investigator
- National Cancer Institute (USA), Skin Cancer Clinical Research, K23CA211793: Repurposing Systemic Therapies to Improve Clinical Outcomes in Advanced Basal Cell Carcinoma, 2018–2022, Sub-project Principal Investigator
- NSFC Major Research Program: High-throughput Rare Cell Sorting System Based on Multicolor Raman Spectroscopy Microfluidic Chip, 2018–2022, Participant

- Ministry of Science and Technology Major Scientific Instrument Development Project: High-throughput Cell Sorter with Multi-mode Detection and Analysis and Its Applications, 2012–2017, Participant

## PUBLICATIONS

1. M. Zhou, **J. Zhao**, X. Chen, Z. Zhang, Z. Lai, Z. Zhou, A. de la Zerda, Y. Lo; Three-dimensional forward-scattering imaging flow cytometry system for single-cell analysis. ***APL Photonics***, 2025, 10(12): 126115..
2. Q. Zhou, **J. Zhao** (co-first author), C. Glück , Y. Liu, L. Du, L. Glandorf, Z. Chen, L. Jiang, B. Weber, A. de la Zerda, D. Razansky, Needle beam two-photon microscopy for simultaneous multiplane neural and vascular imaging in awake mice. ***PhotoniX*** (2026).
3. W. He, J. Zhu, Y. Feng, K. You, H. Chai, Z. Sui, H. Hao, G. Qi, **J. Zhao**, L. Deng, R. Zhao, W. Wang, Neuromorphic-Enabled Video-Activated Cell Sorting. ***Nature Communications***, 15.1 (2024): 10792.
4. **J. Zhao**, K. Liang, A. Van Vleck, L. Du, Y. Winetraub, Y. Peng, and A. de la Zerda. Extending Depth-of-Field of Arbitrary Diffractive Optics with Needle-Shaped Beam Modulation. ***ACS Photonics*** (2024).
5. X. Guo, **J. Zhao** (co-first author), L. Sun, V. Gupta, L. Du, K. Sharma, A. Van Vleck et al. Visualizing cortical blood perfusion after photothrombotic stroke in vivo by needle-shaped beam optical coherence tomography angiography. ***PhotoniX*** 5, no. 1 (2024): 1-17.
6. R. Cao, Y. Luo, **J. Zhao**, Y. Zeng, Y. Zhang, Q. Zhou, A. de le Zerda, L. Wang. Optical-resolution parallel ultraviolet photoacoustic microscopy for slide-free histology,***Science Advances***, 10.50 (2024): eado0518.
7. Y. Winetraub (co-first author), A. Van Vleck (co-first author), E. Yuan (co-first author), I. Terem (co-first author), **J. Zhao**, C. Yu, Y. Chan, H. Do, S. Shevidi, M. Mao, J. Yu, M. Hong, E. Blankenberg, K. Rieger, S. Chu, S. Asai, K. Sarin, A. de la Zerda. Noninvasive Biopsy Using Micro-Registered Optical Coherence Tomography,***Science Advances*** 10, no. 15 (2024): eadi5794.
8. Y. Han, **J. Zhao** (co-first author & corresponding author), Z. Chao, K. Liang, C. Zhang, L. Jiang, Z, Jiao, F, Bai, A. Tarnok, Z. You. Imaging flow cytometry using linear array spot excitation,***Device*** (2023). (Cover story)
9. X. Guo, X. Li, X. Wang, M. Li, X. Dai, L. Kong, Q. Hao, **J. Zhao** (corresponding author), Y. Huang, L. Sun. Wearable optical coherence tomography angiography probe for freely moving mice,***Biomedical Optics Express*** (2023).
10. **J. Zhao**, A. Van Vleck, L. Du, S. Z. Aasi, K. Y. Sarin, A. de la Zerda. Rapid Cellular-Resolution Skin Imaging with Optical Coherence Tomography using All-Glass Multifocal Metasurfaces,***ACS Nano*** (2023).
11. Z. Chao, Y. Han, Z. Jiao, Z. You, and **J. Zhao** (corresponding author, invited paper). Prism Design for Spectral Flow Cytometry. ***Micromachines*** 14, no. 2 (2023): 315.
12. **J. Zhao**, Y. Winetraub, L. Du, A. Van Vleck, K. Ichimura, C. Huang, S. Z. Aasi, K. Y. Sarin, A. de la Zerda, Flexible method for generating needle-shaped beam and its application in optical coherence tomography,***Optica*** (2022). DOI: 10.1364/OPTICA.386574.
13. R. Cao, **J. Zhao** (co-first author), L. Li, L. Du, Y. Zhang, Y. Luo, L. Jiang, S. Davis, Q. Zou, A. de la Zerda, L. Wang, Optical-resolution photoacoustic microscopy with a needle-shaped beam,***Nature Photonics*** (2022), 1-7.
14. Z. Jiao, H. Yong, **J. Zhao** (corresponding author), Z. Chao, A. Tárnok, and Z. You. Rapid switching and durable on-chip spark-cavitation-bubble cell sorter. ***Nature Microsystems & Nanoengineering*** 8, no. 1 (2022): 1-10.
15. H. Yong, Z. Jiao, **J. Zhao** (corresponding author), Z. Chao, and Z. You. A simple approach to fabricate multi-layer glass microfluidic chips based on laser processing and thermocompression bonding. ***Microfluidics and Nanofluidics*** 25, no. 9 (2021): 1-11.
16. Z. Jiao, **J. Zhao** (corresponding author), Y. Han, Z. Chao, and Z. You. Dynamics of spark cavitation bubbles in a microchamber. ***Microfluidics and Nanofluidics*** 25, no. 2 (2021): 1-8.
17. H. Yong, **J. Zhao** (co-first author & corresponding author), Z. Jiao, Z. Chao, A. Tárnok, and Z. You. Diffractive beam shaper for multiwavelength lasers for flow cytometry. ***Cytometry Part A*** 99, no. 2 (2021): 194-204.
18. **J. Zhao**, Y. Winetraub, E. Yuan, W.H. Chan, S.Z. Aasi, K.Y. Sarin, O. Zohar, and A. de la Zerda. Angular compounding for speckle reduction in optical coherence tomography using geometric image registration algorithm and digital focusing. ***Scientific reports*** 10, no. 1 (2020): 1-11.
19. Z. Jiao, **J. Zhao**, Z. Chao, Z. You, and **J. Zhao**. An air-chamber-based microfluidic stabilizer for attenuating syringe-pump-induced fluctuations. ***Microfluidics and Nanofluidics*** 23, no. 2 (2019): 1-10.

20. **J. Zhao**, and Z. You. Spark-generated microbubble cell sorter for microfluidic flow cytometry. ***Cytometry Part A*** 93, no. 2 (2018): 222-231. (Cover story)
21. **J. Zhao**, and Z. You. Using binary optical elements (BOEs) to generate rectangular spots for illumination in micro flow cytometer. ***Biomicrofluidics*** 10, no. 5 (2016): 054111.
22. **J. Zhao**, and Z. You. A microflow cytometer with a rectangular quasi-flat-top laser spot. ***Sensors*** 16, no. 9 (2016): 1474.
23. **J. Zhao**, and Z. You. Combining microfluidic chip and binary optical element for flow cytometry. ***2016 IEEE SENSORS***, pp. 1-3. IEEE, 2016.
24. Y. Han, Y. Cao, **J. Zhao**, Y. Yin, L. Ye, X. Wang, and Z. You. A self-powered insole for human motion recognition. ***Sensors*** 16, no. 9 (2016): 1502.
25. **J. Zhao**, and Z. You. Microfluidic hydrodynamic focusing for high-throughput applications. ***Journal of Micromechanics and Microengineering*** 25, no. 12 (2015): 125006.
26. **J. Zhao**, G. Shi, and L. Du. Miniaturized air-driven planar magnetic generators. ***Energies*** 8, no. 10 (2015): 11755 -11769.
27. **J. Zhao**, and Z. You. A shoe-embedded piezoelectric energy harvester for wearable sensors. ***Sensors*** 14, no. 7 (2014): 12497-12510.
28. **J. Zhao**, and Z. You. Models for 31-mode PVDF energy harvester for wearable applications. ***The Scientific World Journal*** 2014 (2014).

## PRESENTATION (EXCERPT)

1. **J. Zhao**. Structured Illuminations in Biomedical Microscopy with Diffractive Optics. **Cyto-Connect Perth 2025, 2025. (*Oral*)**
2. **J. Zhao**, Y. Han, L. Liu, L. Jiang, Z. You. Structured Illuminations in Biomedical Microscopy with Diffractive Optics. ***38th Congress of the International Society for Advancement of Cytometry***, 2025. (***Oral***)
3. **J. Zhao**, Y. Han, Z. Chao, K. Liang, C. Zhang, L. Jiang, Z, Jiao, F, Bai, A. Tarnok, Z. You. Imaging flow cytometry with Structured illumination of linear array spot excitation. ***37th Congress of the International Society for Advancement of Cytometry***, 2024. (***Oral***)
4. **J. Zhao**, Y. Han, Z. Chao, K. Liang, C. Zhang, L. Jiang, Z, Jiao, F, Bai, A. Tarnok, Z. You. Structured illuminations for imaging flow cytometer and optical coherence tomography. ***37th Congress of the International Society for Advancement of Cytometry***, 2024. (***Poster***)
5. **J. Zhao**, K. Liang, A. Van Vleck, L. Du, Y. Winetraub, Y. Peng, and A. de la Zerda. (2024, March). Extending depth-of-field of arbitrary diffractive optics using needle-shaped beam phase modulation. In Practical Holography XXXVIII: Displays, Materials, and Applications (p. PC1291001). ***SPIE***. 2024. (***Oral***)
6. X. Guo (student co-advised by Jingjing), **J. Zhao**, A. de la Zerda, and L. Sun. Long-term in vivo visualization of cortical blood perfusion after photothrombotic stroke with needle-shaped beam optical coherence tomography angiography. In Optical Coherence Tomography and Coherence Domain Optical Methods in Biomedicine XXVIII, vol. 12830, pp. 132-135. ***SPIE***, 2024. (***Oral***)
7. X. Guo (student co-advised by Jingjing), X. Li, Y. Huang, **J. Zhao**, and L. Sun. Wearable optical coherence tomography angiography probe for monitoring mouse brain in vivo. In Imaging, Manipulation, and Analysis of Biomolecules, Cells, and Tissues XXII, vol. 12846, pp. 39-42. SPIE, 2024. (***Oral invited***)
8. A. Van Vleck (student co-advised by Jingjing), Y. Winetraub, **J. Zhao**, and A. de la Zerda. High-resolution virtual biopsy: non-invasive pathology using deep learning and optical coherence tomography. In Imaging, Manipulation, and Analysis of Biomolecules, Cells, and Tissues XXII, p. PC128460M. ***SPIE***, 2024. (***Oral invited***)
9. X. Guo (student co-advised by Jingjing), **J. Zhao**, A. de la Zerda, L. Sun. Large depth-of-field and high-resolution optical coherence tomography angiography with a needle-shaped beam. In Optics in Health Care and Biomedical Optics XIII (Vol. 12770, pp. 183-184). ***SPIE***. 2023. (***Poster***)
10. **J. Zhao** and A. de la Zerda. Structured illumination for optical coherence tomography and imaging flow cytometry. ***30th Cytometer Development Workshop***, 2023. (***Oral***)
11. **J. Zhao**, A.V. Vleck, Y. Winetraub, L. Du, and A. de la Zerda. Multifocal metasurface optics for rapid virtual biopsy of cellular-resolution optical coherence tomography. In Label-free Biomedical Imaging and Sensing. ***SPIE***, 2023. (***Oral***)

12. H. Yong, **J. Zhao** (co-first author, presenter), Z. Jiao, Z. Chao, A. Tárnok, and Z. You. Spectral imaging fluorescence flow cytometer for high-content analysis. Imaging, Manipulation, and Analysis of Biomolecules, Cells, and Tissues XXI. ***SPIE***, 2023. (***Oral***)
13. **J. Zhao**, A.V. Vleck, Y. Winetraub, L. Du, and A. de la Zerda. Multifocal metasurface optics for rapid virtual biopsy of cellular-resolution optical coherence tomography. ***SPIE Medical Imaging***, 2023. (***Poster***)
14. **J. Zhao**. MEMS flow cytometer. BD company, 2023. (***Oral invited***)
15. **J. Zhao**, L. Du, A.V. Vleck, and A. de la Zerda. Cellular resolution optical coherence tomography with the extended depth-of-focus by the diffractive optical element. In Optical Coherence Tomography and Coherence Domain Optical Methods in Biomedicine XXVI, p. PC119480X. ***SPIE***, 2022. (***Oral***)
16. H. Yong, **J. Zhao** (co-first author, presenter), Z. Jiao, Z. Chao, A. Tárnok, and Z. You. Imaging flow cytometer based on linear array spot illumination generated by diffractive optical elements. In Imaging, Manipulation, and Analysis of Biomolecules, Cells, and Tissues XX, p. PC1196409. ***SPIE***, 2022. (***Oral invited***)
17. H. Yong, **J. Zhao** (co-first author), Z. Jiao, Z. Chao, A. Tárnok, and Z. You. Multichannel fluorescence imaging flow cytometer based on linear array spot illumination. ***35th Congress of the International Society for Advancement of Cytometry***, 2022. (***Poster***)
18. **J. Zhao**, Y. Winetraub, E. Yuan, and A. de la Zerda. Needle-shaped beam by a novel diffractive optical element for the extended depth-of-focus of optical coherence tomography. In Optical Coherence Tomography and Coherence Domain Optical Methods in Biomedicine XXV, vol. 11630, p. 116301I. ***SPIE***, 2021. (***Oral***)
19. **J.** Zhao, Z. Jiao, Y. Han, Z. Chao, and Z. You. MEMS techniques for microfluidic flow cytometer: focusing, beam shaper, and sorting. ***Virtual Congress of the International Society for Advancement of Cytometry***, 2021. (***Poster***)
20. **J. Zhao**, Z. Jiao, Y. Han, Z. Chao, and Z. You. Microfluidic cell sorter with spark-generated cavitation bubble. ***Virtual Congress of the International Society for Advancement of Cytometry***, 2020. (***Oral***)
21. **J. Zhao**, Y. Winetraub, E. Yuan, O. Zohar, and A. de la Zerda. Digital focusing and image registration for resolution-preserving angular compounding in optical coherence tomography (OCT). In Label-free Biomedical Imaging and Sensing (LBIS) 2020, vol. 11251, p. 112510L. ***SPIE***, 2020. (***Oral***)
22. **J. Zhao**, H. Yong, Z. Jiao, Z. Chao, A. Tárnok, and Z. You.Multi-wavelength diffractive beam shaper for rectangular flattop spots in flow cytometer (Conference Presentation). In Imaging, Manipulation, and Analysis of Biomolecules, Cells, and Tissues XVIII, vol. 11243, p. 112430U. ***SPIE***, 2020. (***Oral invited***)
23. **J. Zhao**, H. Yong, Z. Jiao, Z. Chao, A. Tárnok, and Z. You. Rectangular flattop beam shaper for multi-wavelength lasers using a diffractive optical element. ***34th Congress of the International Society for Advancement of Cytometry***, 2019. (***Oral***)
24. **J. Zhao**, Y. Winetraub, E. Yuan, O. Zohar, and A. de la Zerda. Long Depth-of-Focus Beam for Imaging. ***Biohub Inter-lab Confab: Lightning Talks***, 2019. (***Oral***)
25. **J. Zhao**, and Z. You. MEMS techniques for microfluidic flow cytometers. ***ISAC Advancing Cytometry in Asia***, 2017. (***Oral***)
26. **J. Zhao**, and Z. You. MEMS-based flow cytometer. ***China Instrument Science & Biomedical Engineering PhD Forum***, 2017. (***Best oral presentation award***)
27. **J. Zhao**, and Z. You.A Microfluidic flow cytometer with sorting. ***32th Congress of the International Society for Advancement of Cytometry***, 2017. (***Best poster award***)
28. **J. Zhao**, and Z. You. MEMS techniques for flow cytometers, including hydrodynamic focusing, illumination spot, and on-chip sorting. ***32th Congress of the International Society for Advancement of Cytometry***, 2017. (***Poster***)
29. **J. Zhao**, and Z. You. Combining Microfluidic Chip and Binary Optical Element for Flow Cytometry. ***IEEE Sensors Conference 2016***. (***Poster***)
30. **J. Zhao**, and Z. You. Microfluidic Hydrodynamic Focusing for High-Throughput Applications. ***China Instrument Science & Biomedical Engineering PhD Forum***, 2016. (***Best oral presentation award***)
31. **J. Zhao**, and Z. You. Insole-type Piezoelectric Generator for Wearable Sensors. ***China Instrument Science & Biomedical Engineering PhD Forum***, 2014. (***Oral presentation award***)

## PATENTS

1. **Jingjing Zhao**, Lin Du; High-throughput parallel testing method based on imaging flow cytometry and spatially coded reagent, 2023-10-07, Europe/US/China/Japan.
2. **Jingjing Zhao**, Lin Du; Imaging flow cytometry-based high-throughput drug screening method, 2025-8-13, Europe/US/China/Japan.
3. Zheng You; Yong Han; **Jingjing Zhao**; Flow imaging system based on matrix laser scanning, 2023-12-05, United States, US18249439.
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## HONORS

- Outstanding Young Scientist, Journal of Microsystems & Nanoengineering, 2025
- Huazhong Scholar Distinguished Professorship, Huazhong University of Science and Technology, 2024
- Innovator Award, International Society for Advancement of Cytometry, 2021.