

# Zhibo LI

SoMeX lab, Boltzmannngasse 5  
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## Education

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- Université Paris Cité (PMMH lab, ESPCI Paris - PSL)** Oct. 2019 – Sep. 2023  
*Ph.D. in physics* Paris, France  
• “Dynamics of rigid and flexible fibers in complex microfluidic environments” supervised by A. Lindner and O. du Roure
- Beihang University** Sep. 2016 – Jan. 2019  
*MSc Fluid Mechanics* Beijing, China  
• “Experimental investigation on flow field under root canal irrigation” supervised by C. Pan
- Beihang University** Sep. 2012 – July 2016  
*BEng Fluid Mechanics* Beijing, China

## Academic employment

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- Postdoctoral Fellow** March 2026 – Present  
*SoMeX Lab, University of Vienna* Vienna, Austria
- Postdoctoral Fellow** Oct. 2023 – Dec. 2025  
*PMMH lab, CNRS & ESPCI Paris – PSL* Paris, France

## Publications

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- Liu, Y., Liu, Y., Li, Z., Luo, H., Du Roure, O., Zottl, A., Lindner, A., & Jing, G. (2025). Self-focusing of swimming bacteria in flowing nematic order. (*in prep.*)
- Li, Z., Poole, R. J., Du Roure, O., & Lindner, A. (2025). Viscous flow characterization in pillar arrays. (*in prep.*)
- Li, Zhibo, Clément Bielinski, Anke Lindner, Blaise Delmotte, and Olivia du Roure. A microfluidic band-pass filter for flexible fiber separation. *Proceedings of the National Academy of Sciences*, 123(6):e2520537123, 2026
- Li, Zhibo, Zheng Su, He Liu, Yuhao Bai, Ya Shen, and Chong Pan. Phase-locked  $\mu\text{piv}$  analysis of flow dynamics in a simulated root canal with different laser-activated irrigations. *Lasers in Medical Science*, 39(1):112, 2024
- Li, Zhibo, Clément Bielinski, Anke Lindner, Olivia du Roure, and Blaise Delmotte. Dynamics of rigid fibers interacting with triangular obstacles in microchannel flows. *Physical Review Fluids*, 9(4):044302, 2024
- Zheng Su, Li, Zhibo<sup>\*</sup>, Ya Shen, Yuhao Bai, Ying Zheng, Chong Pan, and Benxiang Hou. Characteristics of the irrigant flow in a simulated lateral canal under two typical laser-activated irrigation regimens. *Lasers in surgery and medicine*, 53(4):587–594, 2021

\*Co-first authorship.

## Research Presentations

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**Li, Z.**, “Dynamics of Elongated Particles in Complex Microscale Environments: A Focus on Particle Sorting”, Northwest University, Xi’an, China, July 22, 2025 (*Invited Talk*).

Khakpour, A., **Li, Z.**, Robinson, S., Du Roure, O., Lindner, A., Oliveira, M. S. N., & Chaparian, E., “Single Molecule Dynamics in Microfluidic Flows With Different Kinematics”, Annual European Rheology Conference, Lyon, France, April 14-17, 2025 (Poster, *Best Poster Award*).

**Li, Z.**, Poole, R. J., Du Roure, O., & Lindner, A., “Viscous Flow Characterization in Pillar Arrays With Newtonian and Non-newtonian Fluids”, Annual European Rheology Conference, Lyon, France, April 14-17, 2025 (Oral).

**Li, Z.**, Pérez-Estay, B., Lindner, A., & Du Roure, O., “Flexible Fibers in Bacteria Suspensions”, “Living Fluids” Conference, Marrakech, Maroc, April 1-4, 2025 (Oral).

**Li, Z.**, Bielinski, C., Delmotte, B., Lindner, A., & Du Roure, O., “Dynamics of Flexible Fibers in Complex Viscous Flows in Pillar Arrays and Their Separation”, The 95th Annual Meeting of The Society of Rheology, Austin, Texas, USA, October 13-17, 2024 (Oral).

**Li, Z.**, Bielinski, C., Delmotte, B., Lindner, A., & Du Roure, O., “Dynamics of Flexible Fibers in Complex Viscous Flows in Pillar Arrays”, Annual European Rheology Conference, Leeds, UK, April 10-12, 2024 (Oral).

**Li, Z.**, Bielinski, C., Delmotte, B., Lindner, A., & Du Roure, O., “Interactions of Fibers With Pillars: From One Pillar to Pillar Arrays”, Bulletin of the American Physical Society, Washington, D.C., USA, November 19–21, 2023 (Oral).

**Li, Z.**, Du Roure, O., & Lindner, A., “Dynamics of Flexible Brownian Filaments in 2D Porous Media”, Annual European Rheology Conference, Seville, Spain, April 26-28, 2022 (Oral).

**Li, Z.**, Du Roure, O., & Lindner, A., “Dynamics of Brownian Flexible Filaments in 2D Regular Porous Media”, Fluids and Complexity II, Nice, France, November 29-30, 2021 (Poster).

**Li, Z.**, Su Z. & Pan, C., “Flow Field Measurement of Root Canal Irrigation”, the 8th International Conference on Fluid Mechanics, Sendai, Japan, September 28, 2018 (Oral).

**Li, Z.**, Su Z. & Pan, C., “Flow Field Measurement of Root Canal Irrigation: Challenges and Approaches”, the 3rd PNU-SJTU-BUAA Joint Workshop on Thermo-fluids Engineering, Pusan, Rep. of Korea, January 19, 2018 (Oral).

## Other Experience

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**MSc Intern: Sarah DUCLOS-IVETICH (directed with Lars KOOL)** Oct. 2020 – Jan. 2021  
*Paris, France*

- Title: Fabrication of microchannels with pillar arrays

**MSc Intern: Thomas CHARLES (directed with Francesco BONACCI)** May 2022 – July 2022  
*Paris, France*

- Title: Fabrication and characterization of actin filament bundles

**MSc Intern: Federica PINCI** Apr. 2024 – June 2024  
*Paris, France*

- Title: Fluctuation of flexible fibers in a fiber network.

**MSc Intern: Anuran KAR GUPTA** Apr. 2025 – July 2025  
*Paris, France*

- Title: Dynamics of flexible fibers in active bath.

*Awards & Honors*

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**Software Copyright**

*Velocity field calculation software based on single-pixel ensemble correlation algorithm V1.0*

*2017*

**Excellent Graduation Thesis**

*Beihang University, School of Aeronautic Science and Engineering*

*2016*

*Specialized Skills*

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**Languages:** Mandarin (native), English (fluent)

**Programming languages & Software:** MATLAB, Python, LaTeX, ImageJ, OpenFOAM, Blender, Autodesk Inventor, Microsoft office

**Experimental skills:** Microfluidic fabrication techniques, Microparticle synthesis, (Micro)-particle image velocimetry