

CURRICULUM VITAE

LIGANG ZHU

Changchun Institute of Applied Chemistry
Chinese Academy of Sciences
Changchun 130022, China

Phone: (+86) 18838968653
E-mail: 18838968653@163.com
Github: <https://github.com/Zhu-1998>

EDUCATION

Jilin University, P.R. China	2022-2025
PhD, Theoretical Physics	
Xiamen University, P.R. China	2019-2022
MS, Biophysics	
Zhengzhou University, P.R. China	2015-2019
BS, Applied Physics	

DISCIPLINARY FIELDS

Computational biology
Non-equilibrium statistical physics

PUBLICATIONS

7. **Ligang Zhu**, Jin Wang*. Quantifying Landscape and Flux from Single-Cell Omics: Unraveling the Physical Mechanisms of Cell Function. *JACS Au*, 5, 3738–3757 (2025)
6. Xumiao Jing#, Changsheng Shao#, **Ligang Zhu**#, Ying Zhang, Wei Zhao, Qiyu Yang, Fengqiu Zhang*, Qing Huang*. Effect of cold atmospheric plasma (CAP) on the energy metabolism in HeLa cells through miRNA regulation. *Journal of Physics D: Applied Physics*, 58, 045209 (2025)
5. **Ligang Zhu**, Songlin Yang, Kun Zhang, Hong Wang, Xiaona Fang*, Jin Wang*. Uncovering underlying physical principles and driving forces of cell differentiation and reprogramming from single-cell transcriptomics. *Proceedings of the National Academy of Sciences of the United States of America*, 121, e2401540121 (2024).
4. **Ligang Zhu**, Jin Wang*. Quantifying Landscape-Flux via Single-Cell Transcriptomics Uncovers the Underlying Mechanism of Cell Cycle. *Advanced Science*, 11, 2308879 (2024).
3. **Ligang Zhu**#, Xiang Li#*, Fei Xu#, Zhiyong Yin, Jun Jin, Zhilong Liu, Hong Qi, Jianwei Shuai*. Network modeling-based identification of the switching targets between pyroptosis and secondary pyroptosis. *Chaos, Solitons & Fractals*, 155, 111724 (2022).
2. Zhiyong Yin, Pei-pei Zhang, Fei Xu, Zhilong Liu, **Ligang Zhu**, Jun Jin, Hong Qi, Jianwei Shuai*, Xiang Li*. Cell death modes are specified by the crosstalk dynamics within pyroptotic and apoptotic signaling. *Chaos*, 31, 093103 (2021).

1. Fei Xu, Zhiyong Yin, **Ligang Zhu**, Jun Jin, Qingzhu He, Xiang Li*, Jianwei Shuai. Oscillations governed by the incoherent dynamics in necroptotic signaling. *Frontiers in Physics*, 9, 726638 (2021).

AWARDS

- Excellent Doctoral Dissertation, Jilin University 2025
- Graduate Excellence Scholarship, Jilin University 2024
- Outstanding Graduate Student, Jilin University 2024

PARTICIPATED IN ACDEMIC CONFERENCE

- The 7th National Conference on Statistical Physics and Complex Systems, Kunming, July 26-28, 2023
- Xiamen Soft Matter Forum 2021 & Institute for Complex Adaptive Matter- China 2021 Autumn Workshop, Xiamen, December 9-12, 2021
- 2021 Symposium on Quantitative Biomedical Modeling and Inference, Xiamen, November 6-7, 2021
- The 6th National Conference on Statistical Physics and Complex Systems and Cross-Strait Conference on Statistical Physics, Changchun, August 1-2, 2021
- The 2nd Workshop on Quantitative Biology: Model Inference, Xiamen, November 15-17, 2019

INVITED SEMINARS

- School of Physics and Electronic Information, Anhui Normal University, Wuhu, China, Oct. 13, 2024