CURRICULUM VITAE

Lijie Ding

Spallation Neutron Scattering Division,
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Appointments

May 2024 - present	Postdoctoral Research Associate, Oak Ridge National Laboratory
Jan 2023 - May 2024	Vice President, Quantitative Strategist, Goldman Sachs
Jun 2022 - Dec 2022	Associate, Quantitative Strategist, Goldman Sachs

Education

Sep 2017 - Jun 2022	Ph.D. in Physics, Brown University Dissertation: Chiral Liquid Crystal on Deformable Surfaces: A Monte Carlo Study Advisor: Robert A. Pelcovits and Thomas R. Powers
Sep 2013 - Jun 2017	B.Sc. in Applied Physics, University of Science and Technology of China Thesis: Irreversible Monte Carlo Algorithms Advisor: Youjin Deng

Publications

Preprints

5. Lijie Ding, Chi-Huan Tung, Jan-Michael Y Carrillo, Wei-Ren Chen, and Changwoo Do. Machine learning inversion from small-angle scattering for charged polymers. *arXiv preprint arXiv:2501.14647*, 2025

4. Chi-Huan Tung, Lijie Ding, Ming-Ching Chang, Guan-Rong Huang, Lionel Porcar, Yangyang Wang, Jan-Michael Y Carrillo, Bobby G Sumpter, Yuya Shinohara, Changwoo Do, and Wei-Ren Chen. Scattering-based structural inversion of soft materials via kolmogorov-arnold networks. *arXiv:2412.15474*, 2024

3. Lijie Ding, Yihao Chen, and Changwoo Do. Machine learning-informed scattering correlation analysis of sheared colloids. *arXiv preprint arXiv:2412.07926*, 2024

2. Lijie Ding, Chi-Huan Tung, Zhiqiang Cao, Zekun Ye, Xiaodan Gu, Yan Xia, Wei-Ren Chen, and Changwoo Do. Machine learning-assisted profiling of ladder polymer structure using scattering. *arXiv preprint arXiv:2411.00134*, 2024

1. Lijie Ding, Chi-Huan Tung, Bobby G Sumpter, Wei-Ren Chen, and Changwoo Do. Machine learning inversion from scattering for mechanically driven polymers. *arXiv preprint arXiv:2410.05574*, 2024

Journal Articles

8. Chi-Huan Tung, Lijie Ding, Guan-Rong Huang, Yangyang Wang, Jan-Michael Y. Carrillo, Bobby G. Sumpter, Yuya Shinohara, Changwoo Do, and Wei-Ren Chen. A discretized representation for monte carlo simulation of deformed semiflexible chains. *The Journal of Chemical Physics*, 161(22):224107, 12 2024

7. Lijie Ding, Chi-Huan Tung, Bobby G Sumpter, Wei-Ren Chen, and Changwoo Do. Off-lattice markov chain monte carlo simulations of mechanically driven polymers. *Journal of Chemical Theory and Computation*, 2024

6. Lijie Ding, Robert A Pelcovits, and Thomas R Powers. Chiral fluid membranes with orientational order and multiple edges. *Soft Matter*, 19(43):8453–8464, 2023

5. Lijie Ding, Robert A. Pelcovits, and Thomas R. Powers. Deformation and orientational order of chiral membranes with free edges. *Soft Matter*, 17:6580–6588, 2021

4. Lijie Ding, Robert A Pelcovits, and Thomas R Powers. Shapes of fluid membranes with chiral edges. *Physical Review E*, 102(3):032608, 2020

3. Shayan Lameh, Lijie Ding, and Derek Stein. Controlled Amplification of DNA Brownian Motion Using Electrokinetic Noise. *Physical Review Applied*, 14(5):054042, 2020

2. Sherjeel M Khan, Nadeem Qaiser, Sohail F Shaikh, Lijie J Ding, and Muhammad M Hussain. Do-it-yourself integration of a paper sensor in a smart lid for medication adherence. *Flexible and Printed Electronics*, 4(2):025001, 2019

1. Eren Metin Elçi, Jens Grimm, Lijie Ding, Abrahim Nasrawi, Timothy M Garoni, and Youjin Deng. Lifted worm algorithm for the Ising model. *Physical Review E*, 97(4):042126, 2018

Presentations

Invited Talks

3. Machine Learning-Assisted Inference of Sheared Suspension using Scattering, Oak Ridge National Laboratory. Neutron Scattering Day (Jan. 2025)

2. Characterizing structure of ladder polymer using machine learning assisted scattering data analysis. AI for Neutrons Workshop, Oak Ridge National Laboratory (Oct. 2024)

1. Shapes and orientational order of colloidal membrane. Oak Ridge National Laboratories (Apr. 2022), Johns Hopkins University (Apr. 2022), Instituto Gulbenkian de Ciência (Apr. 2022), Merck (Mar. 2022), Rice University (Feb. 2022), Sandia National Laboratories (Dec. 2021)

Contributed Talks

6. Characterizing structure of ladder polymer using machine learning assisted scattering data analysis. 99th New England Complex Fluids Meeting Brown University (Jun. 2024)

5. Three-dimensional structures of chiral membrane with edges, APS March Meeting, Session on Membranes, Micelles and Vesicles. Chicago (Mar. 2022)

4. 3D structures of chiral membrane with edges. 89th New England Complex Fluids Meeting. Harvard University (Dec. 2021)

3. Chiral membranes with orientational order and free edges, APS March Meeting, Session on Membranes, Micelles and Vesicles. Online (Mar. 2021)

2. Membranes with orientational order and free edges. 86th New England Complex Fluids Meeting. Online (Mar. 2021)

1. Shapes of fluid membrane with chiral edges. 81st New England Complex Fluids Meeting. Harvard University (Dec. 2019)

Posters

6. Characterizing structure of ladder polymer using machine learning assisted scattering data analysis. Southeast Polymer Forum, Oak Ridge National Laboratory (Oct. 2024)

5. 3D structures of chiral membranes with free edges. Mechanics of Life workshop, Flatiron Institute (May. 2022)

4. 3D structures of chiral membranes with free edges. Physics Department Poster Session. Brown University(Nov. 2021)

3. Membranes with orientational order and free edges. Physics Department Poster Session. Brown University(Nov. 2020)

2. Shapes of fluid membrane with chiral edges. Physics Department Poster Session. Brown University (Nov. 2019)

1. Membranes with edges. Materials Research Science and Engineering Centers Retreat. Brandeis University (Nov. 2018)

Teaching Experience

Sep. 2017 - Jun. 2018 Teaching Assistant (Basic Physics A, B), Brown University
Sep. 2016 - Dec. 2016 Teaching Assistant (Mechanics and Thermal Physics), USTC

Awards and Honors

2021 Physics Dissertation Fellowship, Brown University, U.S.
2016 National Scholarship, Ministry of Education, China
2015 Grand Prize, China Undergraduate Physics Tournament, China
2015 National Scholarship, Ministry of Education, China
2012 Bronze Medal, Chinese Physics Olympiad, China

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