

Jichen Feng

University of Pennsylvania
Department of Chemistry 260B CRET
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EDUCATION

Aug. 2021–present	UNIVERSITY OF PENNSYLVANIA	Philadelphia, PA
	Ph.D. in Chemistry (GPA: 4.0/ 4.0)	
	<i>Advisors: Prof. Joseph E. Subotnik and Prof. Abraham Nitzan</i>	
Sept. 2017–Jun. 2021	UNIVERSITY OF SCIENCE AND TECHNOLOGY OF CHINA (USTC)	Hefei, Anhui, China
	B.S. in Physics	
Jul. 2018	TSINGHUA UNIVERSITY	Beijing, China
	Summer School in Quantum Information	

WORKING EXPERIENCE

Jul. 2024–present	PRINCETON UNIVERSITY	Princeton, NJ
	Research with Prof. Joseph E. Subotnik	
	• Research on quantum–classical dynamics in chiral molecular systems	

RESEARCH

- **Graduate Research: Chirality-Induced Spin Selectivity** May. 2023–present
Advisor: Prof. Abraham Nitzan, University of Pennsylvania and Prof. Joseph E. Subotnik, Princeton University
 - * Analyze structural chirality and chiral vibrational modes in small molecules
 - * Study linear and angular momentum coupling in chiral molecular systems
 - * Investigate polaron formation and dynamics in chiral molecular systems
- **Graduate Research: Bulk Photovoltaic Effect** May. 2022–May. 2023
Advisor: Prof. Andrew M. Rappe, University of Pennsylvania
 - * Developed a real-time photocurrent simulation algorithm for solid-state systems
 - * Investigated shift-current responses in noncollinear magnetic materials
- **Undergraduate Research: Quantum Information and Condensed Matter Physics** 2018-2021
 - * Quantum Optics Experiments: PDH locking, MOT operation, single-photon sources, quantum-state tomography
 - * Designed an experimental scheme for state-dependent quantum cloning; evaluated achievable cloning fidelities
 - * Built DFT + machine-learning workflows for two-dimensional materials;

FIRST AUTHOR PUBLICATIONS

1. **Jichen Feng**, Yifan Zhang, Chenggong Zhang, Yifu Lu, Shilong Liu, Mengdi Wang, “Web World Models,” *arXiv* preprint arxiv:2512.23676 (2025)
2. **Jichen Feng**, Ethan Abraham, Joseph E. Subotnik, and Abraham Nitzan, “Rectification of vibrational energy transfer in driven chiral molecules,” *The Journal of Chemical Physics* **163**(23) (2025).
3. **Jichen Feng**, Ethan Abraham, Joseph E. Subotnik, and Abraham Nitzan, “Nuclear Angular Momentum Generation in Thermally Driven Chiral Systems,” *arXiv* preprint arXiv:2508.06738 (2025).
4. **Jichen Feng**, Ethan Abraham, Joseph E. Subotnik, and Abraham Nitzan, “Chiral vibrational modes in small molecules,” *The Journal of Chemical Physics* **163**(1) (2025).

RESEARCH SKILLS

- Programming: C / MATLAB / Python / Julia
- Scientific Computing: LAMMPS; DFT; Quantum–Classical Dynamics

RESEARCH INTERESTS

- Quantum information
- Computational condensed matter physics

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- Nonadiabatic dynamics
- AI for science

AWARDS & SCHOLARSHIPS

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|---|-----------|
| • Outstanding Student Scholarship | 2018–2020 |
| • Yanjici Physics Elite Class Scholarship | 2018 |
| • Graduate Committee's List | 2022 |