# Jichen Feng

University of Pennsylvania
Department of Chemistry 260B CRET
Tel: (1)215-452-9136 Email: jcfeng@sas.upenn.edu

## EDUCATION

*Aug. 2021–present* **UNIVERSITY OF PENNSYLVANIA** Philadelphia, PA
Ph.D. in Chemistry
*Advisors: Prof. Joseph E. Subotnik and Prof. Abraham Nitzan*

*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 Researchs: 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

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