

JUNDA WANG

BASIC INFORMATION

- **Name:** Junda WANG
- **Date of Birth:** Aug. 22, 2001
- **Place of Birth:** Xiangyang, Hubei, China
- **Current Address:** Rue de Bassenges 2, Ecublens VD, Switzerland
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EDUCATION

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

Sep. 2023 - Present

Doctor of Philosophy in Photonics

- **Lab:** Laboratory of Wave Engineering (LWE)
- **Institution:** Inst. of Electrical and Micro Engineering EPFL
- **Supervisor:** Prof. Romain Fleury
- **Research Interest:** Theoretically-oriented research on wave phenomena in Floquet topological insulators, as well as novel techniques and platforms to explore nonequilibrium systems
- **Course:** Some Aspects of Topology in Condensed Matter Physics, Introduction to Field Theory of Driven-dissipative Systems
- **Web:** <https://www.epfl.ch/labs/lwe/>

PEKING UNIVERSITY

Sep. 2019 - Jul. 2023

Bachelor of Science in Physics

- **Institution:** School of Physics
- **Advisor:** Prof. Qifan Yang, Prof. Wenjing Liu
- **Overall GPA:** 3.79/4.0
- **Course:** Thermodynamics and Statistical Mechanics, Quantum Field Theory, Lie Group and Lie Algebra
- **Web:** <https://english.phy.pku.edu.cn/>

PUBLICATIONS

- **Junda Wang**, Haoye Qin, Zhe Zhang, and Romain Fleury, "Intrinsic Non-Hermiticity in Photonic Floquet Topological Insulators with Genuine Temporal Modulation," *International Conference on Metamaterials, Photonic Crystals and Plasmonics* (2025).
- Haoye Qin, Zhe Zhang, **Junda Wang** and Romain Fleury, "Topological hysteretic winding for temporal anti-lasing," *Nature Communications* 16(1), 6189 (2025).
- Zhe Zhang, **Junda Wang**, Haoye Qin, and Romain Fleury, "Floquet topological physics in photonics [Invited]," *Opt. Mater. Express* 15, 828-889 (2025).

- Jiale Sun, **Junda Wang**, Rui-Hua Ni, Xiaoshui Lin, Ming Gong, Youjin Deng and Liang Huang, "Finite difference method for two-dimensional Dirac billiards with arbitrary shape and potentials," *Phy. Rev. B*, 111(16) (2025).
- Zhe Zhang, Yifei Guan, **Junda Wang**, Benjamin Apffel, Aleksi Bossart, Haoye Qin, Oleg V. Yazyev, and Romain Fleury, "Renormalization group of topological scattering networks," *arxiv 2404.15866* (2024).
- **Junda Wang** and Wenjing Liu, "Actively Tunable Chirality Induced by an Asymmetrically Coupled Third Level," *Asia Communications and Photonics Conference Poster 6433* (2022).

CONFERENCES

- 15th International Conference on Metamaterials, Photonic Crystals and Plasmonics, Malaga, Spain, Jul. 22-25, 2025
- Wave Propagation and Control in Complex Media, Cargèse, France, Apr. 15-19, 2024
- 14th International Conference on Metamaterials, Photonic Crystals and Plasmonics, Toyama, Japan, Jul. 16-19, 2024
- Asia Communications and Photonics Conference, Shenzhen, China, Nov. 5-8, 2022

RESEARCH EXPERIENCE

Wave Phenomena in Floquet Topological Insulators Sept. 2023 – Present

Advisor: Prof. Romain Fleury, École Polytechnique Fédérale de Lausanne

- Reviewed previous publications and familiarized with Floquet topological theory.
- Proposed a phenomenological model with temporal coupled mode theory (TCMT) to predict wave dynamics in Floquet Su–Schrieffer–Heeger (SSH) insulators.
- (Ongoing) Develop an ab-initio FDTD simulation package for Floquet systems.

Kerr Optics of Indium Tin Oxide Thin Films June. 2022 – Aug. 2022

Advisor: Prof. Zhaowei Liu, UC San Diego

- Got acquainted with the basic concepts of Kerr optics and nonlinear enhancement.
- Analyzed the structure of energy levels in ITO using a self-consistent method with COMSOL.
- Assisted ITO sample fabrication and materials characterization.

Actively Tunable Chirality Induced by an Asymmetrically Coupled 3rd Level May. 2021 – Jul. 2022

Advisor: Dr. Wenjing Liu, Peking University

- Familiarized with the theoretical framework of the coupling mode theory (CMT).
- Established the phenomenological model of a 3-level coupling system.

SKILLS

- **Programming:** Python, C/C++, Shell Script, MATLAB, Maple, Java, LaTeX, Markdown
- **Computational Applications:** COMSOL, Ansys, OpenEMS, CAD, Adobe PS/AI/PR/AE
- **Languages Proficiency:**
 - **Chinese Mandarin:** Mother tongue
 - **English:** GRE (V156+Q169+AW3.5), TOEFL iBT: 106 (R30+L27+S25+W24)
 - **French:** A2 – easy daily communication