

Jinwen Lin

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EDUCATION

Zhejiang University

Hangzhou, China

Bachelor's degree in Optical Science and Engineering

Aug. 2022 – Expected May. 2026

- **GPA:** 4.07/4.3
- **Core Modules:** Laser Technology and Application(96), Fundamentals and Applications of Quantum Optics(95), Physical Optics(90), Probability Theory and Mathematical Statistics(94), Optical Inertial Technology(97)

PUBLICATION

- [1] (Co-first Author) K.Y.Lau*, **J.W.Lin***, S.Firstov, F.Afanasiev, X.F.Liu, and J.R.Qiu, *A Low-Threshold Nonlinear-Amplifying-Loop-Mirror Mode-Locked Bismuth-Doped Fiber Laser Using A 3x3 Coupler*, **Journal of Lightwave Technology** 43, 328(2025).
- [2] K.Y.Lau, Z.C.Luo, **J.W.Lin**, B.B.Xu, X.F.Liu, and J.R.Qiu, *Development of Figure-of-Nine Laser Cavity for Mode-Locked Fiber Lasers: A Review*, **Laser & Photonics Reviews** (2024).

EXPERIENCE

A Low-threshold Mode-locked Bismuth-doped Fiber Laser at the O-band

Jan. 2023 – Present

Undergraduate Researcher | **Supervisor:** Prof. Jianrong Qiu and Assoc.Prof. Kuen Yao Lau

- Utilized bismuth-doped phosphosilicate glass fiber fabricated by the modified chemical vapour deposition method to generate high-quality emission for the optical communication O-band(~ 1260 nm to ~ 1360 nm)
- Constructed a nonlinear-amplifying-loop-mirror mode-locked bismuth-doped fiber laser with a 3x3 optical coupler, which induced a phase shift of $\frac{2\pi}{3}$
- Demonstrated that the initiation threshold of mode-locking in this novel structured laser cavity reduced at least by 45% and the output power increased at least 2 times, achieving improved mode-locking initiation capability and high-quality pulse emission than conventional 2x2 coupler nonlinear-amplifying-loop-mirror laser cavity

Femtosecond Laser Direct-written of Waveguide and Quantum Circuit

Mar. 2024 – Present

Undergraduate Researcher | **Supervisor:** Prof. Jianrong Qiu

- Developed a method for direct-written optical waveguides served as connectors between optical fibers and silicon-based chips through accelerated recombination in order to enable flexible control of mode field diameter and reduce losses
- Explored the method of direct-written three-dimensional optical waveguides using femtosecond laser to fabricate qubit logic gates and photonic quantum circuits

MCM-ICM: Quantifying Wear and Human Traffic on Ancient Staircases

Jan. 2025 – Feb. 2025

Core Team Member | *The American Mathematical/Interdisciplinary Contest in Modeling*

- Constructed three quantitative models for analysing wear dynamics and traffic patterns on ancient staircases.
- Predicted the age from the extent of wearing utilizing machine vision and COMSOL simulation

HONORS & AWARDS

- Undergraduate Natural Science Foundation of Zhejiang University (**Top 0.1%**) Jul. 2024
- Zhejiang University First Prize Scholarship (**Top 3%**) Nov. 2024
- Model Student of Outstanding Academic Performance (**Top 10%**) Nov. 2024
- Zhejiang Provincial Government Scholarship (**Top 5%**) Nov. 2023
- Zhejiang University First Prize Scholarship (**Top 3%**) Nov. 2023
- Third Prize in Zhejiang Province College Student Physics Theoretical Competition Dec. 2023
- Third Prize in National College Mathematics Competition Dec. 2023

TECHNICAL SKILLS

Languages: Chinese Mandarin (native), English (fluent)

Software & Tools: Zemax, MATLAB, Origin, Arduino, AutoCAD, Solidworks, Bambu Studio, Keil uVision, Pycharm, Endnote, Zotero, SPSS, Git, MS office, LATEX, Wireshark, Multisim, Machine Learning, COMSOL

Programming Languages: C, Python

Experimental Skills: Construction of passive mode-Locked fiber laser including NPR, NALM, NOLM, CNTs, SESAMs and so on, 3D printing technique, Femtosecond laser direct-written technology