

Xinzhe Zhang

+86 13821021784 | zxzzhe02@gmail.com | [personal website](#)

Office 417, Teaching Building 5, Nankai University
94 Weijin Road, Nankai District, Tianjin, P.R.China

EDUCATION

- **M.S. Nankai University**, Tianjin, China Sept. 2023 - Jun. 2025
Optics, GPA:93.45/100, adviser: *Jing Chen* (expected)
- **B.S. Nankai University**, Tianjin, China Sept. 2019 - Jun. 2023
Physics, GPA:88.27/100

RESEARCH EXPERIENCE

- **Prof. Chen's Group at Nankai University** *Research Assistant*
Tianjin, China Jul. 2022 - present
 - Worked on **Simulation of PT-symmetric Bragg Gratings**. Studied the superluminal effects of transmission and non-reciprocity of reflectivity in this structure.[4][5]
 - Worked on **Simulation of Coupled Loss-free Waveguides** made of Positive-index Materials and Negative-index Materials. Studied the slow light effect in this structure and extended this structure to multilayer coupled waveguides.[2][3]
 - Worked on **Simulation of Parity-Time Symmetric Waveguides**. Refined the definition of the Poynting vector in non-Hermitian systems by analyzing the dispersion relation.[1]

PUBLICATIONS

- [1] **ZHANG XZ**, LUO RZ, CHEN J. Revisit the Poynting vector in PT-symmetric coupled waveguides [J]. OPTICS EXPRESS, 2022, 30(21): 38753-63.[DOI] [PDF]
- [2] **ZHANG XZ**, WU LT, LUO RZ, et al. Higher-order exceptional points using lossfree negative-index materials [J]. PHYSICA SCRIPTA, 2023, 98(9): 095511.[DOI] [PDF]
- [3] WU LT, **ZHANG XZ**, LUO RZ, et al. Non-Hermitian guided modes and exceptional points using loss-free negative-index materials [J]. OPTICS EXPRESS, 2023, 31(9): 14109-18.[DOI] [PDF]
- [4] WU LT, **ZHANG XZ**, MING KANG, et al. Broken phase of parity-time symmetry enables efficient superluminal pulse transmission [J]. OPTICS EXPRESS, 2024, 32(24): 42489-99.[DOI] [PDF]
- [5] WU LT, **ZHANG XZ**, GUO TJ, et al. Superluminality in parity-time symmetric Bragg gratings [J]. PHYSICA SCRIPTA, 2024, 99(8): 085544.[DOI] [PDF]

SKILLS

- **Programming Languages:** MATLAB, Python(numpy, pandas), L^AT_EX
- **Softwares:** COMSOL

HONORS AND AWARDS

- **National Scholarship** 2023
Top 1/130+, the highest scholarship for Chinese graduates granted by the Ministry of Education of China
- **National Encouragement scholarship** 2022
Granted by Nankai University
- **National Encouragement scholarship** 2021
Granted by Nankai University

LANGUAGES

TOEFL: 95 (R: 26 | L: 23 | **S: 23** | W: 23)
GRE: 330 (V: 161 | Q: 169)

REFERENCES

1. **Jing Chen**

Professor, Department of Physics, Nankai University
Email: jchen4@nankai.edu.cn | Phone: +86 13132161393
Relationship: supervisor

2. **Zhenpeng Hu**

Professor, Department of Physics, Nankai University
Email: zphu@nankai.edu.cn | Phone: +86 15022625376
Relationship: undergraduate mentor, course instructor

3. **Ming Kang**

Professor, College of Physics and Materials Science, Tianjin Normal University
Email: mingkang@tjnu.edu.cn | Phone: +86 15222899640
Relationship: collaborator