Jiayu Yang

Undergraduate

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Education

Peking University

Beijing, P.R.China

B.Sc. in Physics

2018 Sep - 2022 Jul (Expected)

- GPA 3.918/4.0 – within best 3 out of 138 students
- Related courses and grades:
  — Group Theory (Graduate Course) 99/100
  — Advanced Quantum Mechanics (Graduate Course) 97/100
  — Quantum Statistical Physics (Graduate Course) 95/100
  — Electrodynamics 99/100
  — Methods of Mathematical Physics (2) 98/100
  — Modern Physics Laboratory I 93/100
  — Seminar for Quantum Mechanics 95/100

Research Experience

Institute of Modern Optics, School of Physics, Peking University

Beijing, P.R.China

Undergraduate Student, Directed by Prof. Xiaoyong Hu

2019 Jul - Now

Individual research:

- Realized the conversion of circularly polarized light with two on-chip silicon waveguides based on EP-encirclement in a four dimensional system. (The publication is in preparation.)
- Constructed an exceptional point in a photonic crystal waveguide with gain and loss.

Team collaboration:

- Participated in writing a review on all-optical switch: I finished the part of PT symmetry and exceptional points independently.
- Participated in the inverse design of basic devices in all-optical binary computation.

Centre for Advanced Photonics and Electronics, University of Cambridge

Cambridge, United Kingdom

Student Visitor, Directed by Prof. Daping Chu

2021 Jul - Now

- Designed a new type of photonic crystal waveguide with liquid crystal on silicon, and realized optical switch and wavelength division multiplexing based on the structure.
- Fabricated the Bragg Gratings experimentally and measured its transmission spectrum.

Publications

- H. Qi, X. Wang, X. Hu, Z. Du, **J. Yang**, Z. Yu, Shaoqi Ding, S. Chu, and Q. Gong. *"All-optical switch based on novel physics effects"* J. Appl. Phys. 129, 210906 (2021).
  https://doi.org/10.1063/5.0048878
- H. Qi, Z. Du, **J. Yang**, X. Hu and Q. Gong. *"All-optical binary computation based on inverse design method"* Nanophotonics, Published Online (2021).
  https://doi.org/10.1515/nanoph-2021-0467
- H. Qi, Z. Du, X. Hu, **J. Yang**, S. Chu and Q. Gong. *"High Performance Integrated Photonic Circuit Based on Inverse Design Method"* Opto-Electronic Advances, Accepted on 22-Sep-2021 (2021).

Extracurricular Activities

Undergraduate enrollment for Peking University

Beijing, P.R.China

Student Volunteer and Chief of one group in Shaanxi

2019 Jun - Now

- Enrollment counselor for high school students.
- Trained new members in our group.

The Student Union in School of Physics

Beijing, P.R.China

Secretary

2019 Sep - 2020 Jun

- One of the directors of the New Year's party and the Welcome Party.
- Organized several students activities in school of physics.
- Cultivated members of the department in the student union.

Track Team in Peking University

Beijing, P.R.China

Athlete in 100m

2019 Sep - Now

- Personal Best: 11.32s.
- Organized training for all the team members.

Additional Information

- Software: Skilled in COMSOL Multiphysics and Lumerical FDTD Solutions.
- Programming: Skilled in Python, C and Matlab.
- Language: TOEFL(2021 Aug) - R28 L26 S23 W25.

Honors and Awards

2021 National Scholarship

2021 The National Southwest Associated University Scholarship

2021 Merit Student Pacesetter

2020 National Scholarship

2020 Merit Student Pacesetter

2019 National Scholarship

2019 Merit Student Pacesetter

2018 The First Prize of Freshman Scholarship · Mingde Scholarship