FENGYAN YANG

(+86) 15122771761 | nkyfy@mail.nankai.edu.cn | fengyanyang.github.io

SUMMARY

I am majoring in physics during my college study, and I have three periods of scientific research experience in different universities. I am proficient in simulation and calculation using MATLAB, COMSOL, FDTD Solution, and I also like to conduct experiments. In research work, I prefer to try ideas which are interesting as well as beneficial to human society. Currently, I have a broad research interests around optics and photonics, such as bio-imaging, bio-sensing, micro/nano-photonics, nonlinear optics, quantum optics, non-Hermitian physics and topological photonic crystals.

EDUCATION

B.S. in Physics

Nankai University

09/2016 - Ongoing

- Major: Physics (Boling Class, an honored program, the Pilot Scheme of Talent Training in Basic Sciences)
- GPA: 3.94/4 (by WES iGPA Calculator), 91.60/100
- Ranking: 3/174 in School of Physics (within top 2%), 3/22 in Boling Class
- Core Courses: Electrodynamics (94), Quantum Mechanics (94), Mathematical Physics (95), Theoretical Mechanics (90), Basic electronics(97), Solid State Physics (90), Nonlinear Optics (92), Modern applied optics (99), Data Structure and Algorithms (95), Python language and machine learning (94), Scientific Research (96), Mechanics (100), Linear Algebra (99)

GPA

3.94 / 4.00

RESERCH EXPERIENCE

RESEARCH INTERN

Washington University in St.Louis

06/2019 - 09/2019 St. Louis, Missouri

Advisor: Lan Yang, Professor of Electrical and Systems Engineering

Project 1: made up a bio-compatible mininature laser out of doped silk fibroin

Project 2: Used higher order mode excited selectively by angle polished fiber in microbubble resonator for sensing

- Pro1: Extracted silk fibroin from cocoons
- Pro1: Used silk fibroin solution doped with laser dye to build microbottle resonator
- Pro1: Built optical experimental setup to test the property of microbottle resonator
- Pro2: Simulated the optical field distribution in microbubble resonator with angle polished fiber

RESEARCH INTERN

University of Arizona

06/2018 - 09/2018 Tucson, Arizona

Advisor: Zhenshen Zhang, Assistant Professor of Optical Science, joint appointed in Material Science and Engineering

Project: Develop a software package for the generation of micro-resonator based frequency combs.

- Developed MATLAB-COMSOL interface to calculate material waveguide dispersion
- Simulated frequency-domain nonlinear interactions in ring resonators by solving coupling mode equations
- Simulated time-domain nonlinear interactions in ring resonators by solving Lugiato–Lefever equation

UNDERGRADUATE RESEARCHER

Nankai University

09/2017 - 03/2019 Tianjin, China

Advisor: Yi Hu, Associate Professor in School of Physics

Project: Calculated band structure of topological photonic crystals and investigated nonlinearity induced topological phase transition.

- Learned FDTD algorithm and commonly used computational methods in physics, including Runge-Kutta, Monte Carlo, and etc.
- Computed band structure of graphene and photonic crystals using Comsol and Matlab
- Investigated topological phase transition induced by nonlinear coupling coefficient

WORK EXPERIENCE

Team Leader of OSA Student Chapter

03/2018 - Ongoing Tianjin, China

Co-founder and president of Optical Society Student Chapter in Nankai University

- Organized the visit of OSA chapter to optics lab in Peking University
- Gave lecture in COMSOL workshop organized by student chapter, the topic was *Calculating Dispersion of Micro Resonator*

Teaching Assistant

09/2018 - 06/2019 Nankai University

General Physics, taught in English | Physics Experiment

- General Physics: Leaded discussion section every week, each time students involved in were about 30
- Physics Experiment: Taught experiment of measuring Young modulus every week, students involved in were about 400 in total

Student Chief Editor

01/2019 - Ongoing Tianjin, China

Journal of Boling School

Student Referee

05/2018 Tianjin, China

China Young Physicists' Tournament

ACADEMIC ACTIVITIES

Sept, 2019 Attendee, Student Leadership Conference of OSA & Frontiers in Optics, Washington DC, U.S.A

Oct, 2018 Poster presentation, Overseas Internship Experience Exchange in Boling School, Nankai Univerisity
Topic: Develop a simulation platform for studying the formation of optical frequency combs in ring resonators

Oct, 2017 Short-term academic visit, National Taipei University and Academia Sinica of Taiwan, China

EXRACURRICULAR ACTIVITIES

Nov, 2017 Champion, College Student Martial Arts Competition in Tianjin

Mar, 2019 - Ongoing, Volunteer (Shopping Guide), Huang Dao book store in Nankai University

AWARDS

China National Motivation Scholarship *2

Boling Scholarship *2

Nankai Physics Tournament, first prize

SKILLS

Programming

MATLAB (Advanced)
Python (Medium)
LaTeX (Medium)

Simulation

COMSOL (Proficient)
FDTD Solution (Advanced)

Language

TOFEL: 101 (Reading: 26 listening:30, speaking: 23, Writing: 22)

GRE: 325+3.5 (Verbal: 155, Math: 170, Writing: 3.5)