

Pei Zeng

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EDUCATION

Nanjing University, Nanjing, Jiangsu, China

- Bachelor of Science (B.S.) in Physics (minor in Acoustics) Sep 2012 – Jun 2016
 - Cumulative GPA: 4.536 / 5.0 (Ranking: 8/182)

RESEARCH EXPERIENCE

Physics Experiment Teaching Center, Nanjing University

- Undergraduate Research Student, Physics Department Dec 2012 – May 2014
 - Project 1: Work on the 2013 IYPT problems
 - Supervisor: Prof. Sihui Wang
 - IYPT problems concerns some daily physical phenomenon. I've accomplished some works on 'Jet and Film', 'Carbon Microphone' and 'Levitation', some of which are published in the 'Collection of works for IYPT problems(25th-26th)' by World Scientific Press.
 - Project 2: Improvement in Measuring Tiny Displacement with Double Gratings
 - Supervisor: Prof. Huijun Zhou
 - A new method to reconstruct the motion process of grating based on anti-solving the 'cos' equation. The work was published in Chinese magazine 'College Physics' in 2016.

Dielectric Superlattice Laboratory, Nanjing University

- Undergraduate Research Student, Physics Department May 2014 – Feb 2016
 - Project: A Feasible Design of Decimeter-size Sub-wavelength Metalens
 - Supervisor: Dr. Shuming Wang, Associate Researcher
 - Partly supported by National Training Programs of Innovation for Undergraduates.
 - Realizing far-field sub-wavelength imaging in mid-infrared band. Using silver microstructure for phase compensation; hyperbolic material for sub-wavelength propagation.
 - Received Certification from National Training Programs of Innovation for Undergraduates with rating "Excellent". Received A patent for the Metalens design.
 - Also took part in some other related works in the lab, including the design of Wheeler delayed-choice experiment in SPP system; the simulation of nonlinear effect using COMSOL, etc.

Light-Matter Interaction Unit, Okinawa Institute of Science and Technology

- Research Intern Oct 2015 – Dec 2016
 - Project: Optomechanical Effect Detection in Slotted Tapered Fiber
 - Supervisors: Prof. Sile Nic Chormaic, Dr. Yong Yang
 - Observe Optomechanical effect in Slotted Tapered Optical Nanofiber using the Mach-Zender Interferometer. Try to couple the optical mode and mechanical mode using the modulated 1550nm laser amplified by EDFA.
 - Completed the construction of MZI both in free space and with in-fibre design. Made the in-fibre MZI sensitive enough for acoustic phonon detection in the fibre. (Homodyne Detection, PZ control)
 - Also learned how to make silicon and As_2S_3 nanosphere using CO_2 laser(10.6um) and how to test the Whisper Gallery Mode in it.

Integrated Circuit and Intelligent System Lab, School of Electronic Science and Engineering, Nanjing University

- Undergraduate Research Student, Physics Department. Feb 2016 – May 2016
 - Project: Algorithm Test and A Digital Circuit Design of The DeSTIN Deep Learning Frame
 - Supervisors: Prof. Zhongfeng Wang, Dr. Jun Lin
 - Worked as my bachelor thesis project. More info on [Bachelor Thesis on Github\(Chinese\)](#).
 - Tested a new deep learning frame: Deep SpatioTemporal Inference Network(DeSTIN) using MATLAB and Python;
 - Exerted the EDA tool to design a Digital Circuit for the core algorithm in DeSTIN, programmed in Verilog HDL.

PUBLICATIONS

JOURNALS

- [1] CHEN Si, ZENG Pei, ZHOU Hui-jun, and WANG si-hui, "Improvement and application on method of measuring the tiny displacement with double grating" *College Physics*, vol. 35, no. 1, pp. 53–56, Jan 2016.
- [2] Sihui Wang and Wenli Gao, "International Young Physicists' Tournament, Problems and Solutions 2012–2013" *World Scientific Press*, chapter. 10, 12, Dec 2014.

AWARDS & SCHOLARSHIPS	<ul style="list-style-type: none"> ▪ Silver Medal of 4th University Physics Competition (hosted by America Physics Society and American Astronomical Society) For works on the Problem B. Extraterrestrial Life. Dec 2013 ▪ Second Prize of 4th China Undergraduate Physics Tournament Aug 2013 ▪ Second Prize of China Undergraduate Mathematical Contest in Modeling Dec 2014 ▪ Industrial Responsibility Scholarship(RMB5000)(for top 5%), Oct 2013 ▪ People's Scholarship(RMB2000)(for top 10%), Oct 2014 ▪ National Scholarship(RMB8000)(for top 1%), Oct 2015
CAMPUS ACTIVITIES	Focus Society, Nanjing University <ul style="list-style-type: none"> ▪ The society mainly focus on life topic and literature, making newspaper 2 3 times every semester from the discussion of society members and other interested students who take part in. ▪ Member in Editoring Minister Oct 2012 – Jun 2013 ▪ Chief Editor Jun 2013 – Jun 2014 <ul style="list-style-type: none"> • Organized the content planning and type setting, and completed the final modification of 5 Focus newspapers as the chief editor, which received good rating in my department. • Arranged 2 3 times of 'type setting with CorelDraw and Photoshop' workshop inside the Focus society. • Arranged a Society travel to Soochow City; Participated in 2 3 travel activities (Xitang City in Zhejiang Province; Mount Qixia in Nanjing, etc.).
	Young Volunteers' Association, Physics Department <ul style="list-style-type: none"> ▪ Member Oct 2012 – Jun 2013 <ul style="list-style-type: none"> • Organized/ Joined in 3 times of 'Enlight Science among Pupils' activities, which mainly aim to popularize science knowledge and inspire the interest in Science among pupils.
	Student Research Training Program's Society, Nanjing University <ul style="list-style-type: none"> ▪ Member Oct 2013 – Jun 2014 <ul style="list-style-type: none"> • Organized the 'XiaoXiongLunDao' activities once, acting as a small platform for communication among students and professors who work in the same academic topics. The 'XiaoXiongLunDao' I arranged mainly focus on 'Architecture and Space Design'.
LANGUAGES	<ul style="list-style-type: none"> ▪ Chinese: Native language. ▪ English: Fluent (speaking, reading, writing, listening). ▪ Japanese: Basic (listening, reading, speaking).
SKILLS	<ul style="list-style-type: none"> ▪ Software and Coding: <ul style="list-style-type: none"> • Intermediate Proficiency: MATLAB, T_EX, COMSOL Multiphysics. • Basic Proficiency: Python, C, Mathematica, Verilog HDL, Adobe Photoshop.
INTERESTS	Acoustic Guitar, Singing(karaoke), Jogging, Anime, Ballroom Dancing(Modern).
STANDARDIZED TESTS	<ul style="list-style-type: none"> ▪ TOEFL(iBT): 94(Reading 25, Listening 25, Speaking 19, Writing 25) Mar 2014 ▪ GRE(General): Verbal 147, Quantitative 170, Analytical Writing 3.5 Apr 2015 ▪ CET-4: 581 Jun 2013 ▪ CET-6: 520 Dec 2013 ▪ Computer Level Test(level 2, C-language): Fine Dec 2013
REFERENCES	<ul style="list-style-type: none"> ▪ Dr. Shuming Wang Associate Researcher in Dielectric Superlattice Laboratory, Quantum Plasmonics and Metamaterials, Nanjing University, National Laboratory of Solid State Microstructure No.15 Jinyinjie, Nanjing City, Jiangsu, China 210008 wangshuming@nju.edu.cn

■ **Prof. Sile Nic Chormaic**

Principle Investigator in Light-Matter Interaction Unit

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[CV compiled on 2016-05-26 in English.(long version)]