Wenzhuo **HUANG**

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Summary

PhD candidate in ECE photonics with strong analytic and experimental skills. 4 years of solid undergraduate background in physics at Peking University and 3+ years of research experience in nano-photonics and metamaterials at UC San Diego, with expertise in designing novel photonic devices, building optical setup and performing measurement. Currently looking for a summer internship in optics/photonics related fields.

Education

University of California, San Diego — *La Jolla, CA, USA*

Ph.D. in Electrical and Computer Engineering, Photonics — *2016 - Present*

M.S. in Electrical and Computer Engineering, Photonics — *2016 - 2018*

Peking University — *Beijing, China*

B.S. in Physics — *2012 - 2016*

Skills

Simulation	FDTD (Lumerical, MEEP), FEM (COMSOL), RCWA (S^4)
Experiment	Visible & IR spectroscopy, opto-mechanical assemblies and alignment processes, Thin film characterization
Data analysis	Optimization and Regression analysis, Image processing, Neural networks
Programming	Python, Matlab, Mathematica, LabVIEW, Linux, LaTeX

Projects

Nanophotonics with Two-Dimensional Semiconductors

Graduate Student Researcher at UC San Diego, ECE Department — *2017 - Present*

- Extract refractive indexes of anisotropic thin films using Lorentz Dispersion Model and Transfer Matrix Method in Matlab.
- Perform electromagnetic simulations of light propagation and scattering in photonic nanostructures (e.g. photonic crystals, metasurfaces) using commercial softwares (Lumerical, COMSOL) and open-source modules in Python (S^4 and MEEP).
- Design and build optical measurement setup to characterize optical responses of nanodevices with linear/circular polarizations.

Plasmonic Metamaterials in Opto-mechanical System

Graduate Student Researcher at UC San Diego, ECE Department — *2016 - 2017*

- Multiphysics simulation of light absorption and thermo-mechanical effect in plasmonic microcavities and metamaterials.
- Built an infrared pump/probe system in a vacuum chamber.

Black Hole Mass and Accretion Rate in Active Galaxy Nuclei (AGN)

Undergraduate Student Researcher at PKU, Kavli Institute for Astronomy and Astrophysics — *2014 - 2015*

- Modified the thin-disk model of AGN after analyzing thousands of galaxy spectra using Mathematica.

Nano-optical Antenna based on Surface Plasmon Polariton (SPP)

Undergraduate Student Researcher at PKU, School of Physics — *2013 - 2015*

- Designed an ultra-compact (size $< \lambda^2/10$) slot antenna that launches unidirectional SPP using FDTD method.

Honors & Awards

2015	**Academic Innovation Award**, Peking University	*Beijing, China*
2012	**Gold Medalist**, 43rd International Physics Olympiad (IPhO)	*Tallinn, Estonia*
2011	**Gold Medalist**, 28th Chinese Physics Olympiad	*Xi'an, China*

Courses and Activities

Selected courses	Lasers and Optics, Optical Information Processing, Optical Modulation and Detection, Integrated Photonics, Optical Processes in Semiconductors, General Relativity
Teaching Assistantship	Electronic Devices and Circuits for NanoEngineers, Fundamentals of Devices and Materials
Volunteering	Graduate mentor of Jacobs Undergraduate Mentoring Program (JUMP)

Selected Publications

- **W. Huang**, C. De-Eknamkul, ..., E. Cubukcu. "Monolayer Excitonic Emission for Imaging Spatial Dispersion of Photonic Crystals." *ACS Photonics* 6.9 (2019): 2312-2319.
- X. Zhang, N. Biekert, ..., **W. Huang**, ..., E. Cubukcu. "Dynamic photochemical and optoelectronic control of photonic Fano resonances via monolayer MoS_2 trions." *Nano letters*, 18.2 (2018): 957-963.
- **W. Huang**, J. Yang, X. Xiao, J. Zhang. "Surface Plasmon Polariton Unidirectional Nano-Launcher Based on the Strong Coupling Effects in an Asymmetric Optical Slot Nanoantenna Pair." *Plasmonics* 10.6 (2015):1551-1556.