

# Yongli He

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## EDUCATION

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- University of Michigan**, Ann Arbor, MI In Progress  
Ph.D. in progress, Applied Physics  
M.Sc. in progress, Electrical and Computer Engineering
- Huazhong University of Science and Technology (HUST)**, Wuhan, China Sept.2018 - June 2022  
B.Sc., Physics (*with honor*)  
GPA: 3.97/4.00 (rank: 2/167)

## RESEARCH EXPERIENCE

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- Functional MRI Lab**, Univ. of Michigan December 2022 - Present  
Graduate Student Research Assistant *Supervisors: Jon-Fredrik Nielsen, Ph.D.*
- **MRI Sequence Design**  
Spatially-selective excitation pulse design  
Tailored excitation and acquisition pulses joint optimization
- Wuhan National Lab for Optoelectronics**, HUST March 2020 - April 2022  
Undergraduate Research Assistant *Supervisor: Jiang Tang, Ph.D., Boxiang Song, Ph.D.*
- **Quantum Dot Infrared Photodetector Design Based on FDTD Simulation**  
Designed metasurfaces to enhance external quantum efficiency of the infrared photodetectors  
Optimized structures of quantum dot (QD) infrared photodetectors to maximize light absorption
  - **Perovskite-based X-ray Photodetector Design based on Monte Carlo Simulation**  
Modeled and Simulated x-ray incidence on MAPbI<sub>3</sub> photodetector using Geant4  
Analyzed the energy deposition spectrum of the process and provided guidance to the fabrication
- NCSU GEARS**, Summer Research Program July 2021 - Aug. 2021  
Research Assistant *Supervisor: Kaveh Ahadi, Ph.D.*
- **Simulation Study of Two-Dimensional Charge Carriers at AlN/GaN Heterointerface**
- Undergraduate Thesis Research** Aug. 2021 - May. 2022  
Research Assistant *Supervisor: Xuebin Bian, Ph.D.*
- **Applications of Parallel Computing in Ultrafast Optics**

## JOURNAL PUBLICATIONS

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- [J1] **Y. He**, B. Song, J. Tang. "Optical metalenses: fundamentals, dispersion manipulation, and applications.", *Front. Optoelectron.*, 15, 24 (2022). [DOI](#).

## CONFERENCE PROCEEDINGS AND ABSTRACTS

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- [C2] **Y. He**, R. Fung, J.-F. Nielsen. "High-Accuracy Ultra-short Inner-Volume Saturation Pulse for 3D Steady-State Imaging." *International Society for Magnetic Resonance in Medicine Annual Meeting*, 2024. (Abstract). (In press).
- [C1] **Y. He**, P. Liu, L. Gao, B. Song, J. Tang. "Efficient Colloidal Quantum Dot Short-infrared Photodetectors with Coupled Metasurfaces." *International Photonics and Optoelectronics Meetings*, 2022. (Poster).

## HONORS AND AWARDS

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<b>National Scholarship</b>	2020
Huazhong Univ. of Sci. and Tech.	
<i>0.2% of the class national wide</i>	
<b>Outstanding Undergraduat Award</b>	2020
Huazhong Univ. of Sci. and Tech.	
<i>1.5% of the class in the university</i>	
<b>First Prize of The National College Student Mathematics Competitions</b>	2019
Award given by Chinese Mathematical Society	