

Jacob H. Nie

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PERSONAL INFORMATION

Personal email: jacobnie2008@gmail.com (preferred)

School email: jacobhnie@ucsb.edu

Current residence: Santa Barbara, CA

Age: 19

EDUCATION

University of California, Santa Barbara

B. S., Physics, 2020–2024 (expected)

GPA: 3.98/4.00

EXPERIENCE

Undergraduate researcher, UC Santa Barbara (April 2021–Present)

PI: *Prof. Chenhao Jin*

Research focus: Ultrafast optical spectroscopy of many-body physics in transition metal dichalcogenide (TMD) heterostructures; transport and optical characterization of topology and magnetism in MoTe₂/WSe₂ heterostructures (in collaboration with Prof. Andrea Young)

Visiting student, UC Berkeley (June 2021–September 2021)

PI: *Prof. Feng Wang*

Research focus: Fabricating 2D van der Waals heterostructures, and optical spectroscopy of twisted TMD heterostructures.

SELECTED HONORS

Worster Summer Research Fellowship (2022)

Barry Goldwater Scholarship: nominee (2022)

USA Physics Olympiad National Team Training Camp Attendee (2019)

USA Physics Olympiad: Gold Medalist (2019)

PUBLICATIONS

R. Xiong, **J. H. Nie**, S. B. Brantly, P. Hays, R. Sailus, K. Watanabe, T. Taniguchi, S. Tongay, C. Jin. Bosonic Mott insulator in WSe₂/WS₂ moiré superlattice. *arXiv:2207.10764* (2022)

SELECTED COURSEWORK

PHYS 13A,B - Honors Experimental Physics (A, A, A-)

PHYS 101 - Complex Variables (A+)

PHYS 104 - Advanced Mechanics (A+)

PHYS 110A - Electromagnetism (A+)

PHYS 123B - Topics in Condensed Matter Physics (A+)

PHYS 215A,B,C - Quantum Mechanics* (A+, A+, A+)

PHYS 223A - Condensed Matter Physics* (A+)

ECE 162C - Optoelectronic Materials and Devices (A+)

* *Graduate course*