Kexin Wang

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EDUCATION

Fudan University (FDU) Sept 2017 - Present

- B.S., Physics (expected Jun 2021)
- GPA: **3.76**/4.0 Rank: **6**/115
- Upper division (Junior year): **3.91**/4.0 Rank: **3**/115
- Major courses: Solid Physics (A), Atomic Physics (Honors) (A), Low Temperature and Superconductivity (A), Electrodynamics (Honors) (A-)

University of California, Berkeley Jan 2019 - May 2019

- Exchange student sponsored by Fudan University
- GPA: **3.9**/4.0
- Major courses: Quantum Mechanics (A+), Introduction to Mathematical Physics (A+), Introduction to Statistical and Thermal Physics (A-)

RESEARCH EXPERIENCE

❖ **Dynamics of phase-mismatched dipole spin waves in atomic medium**
Advisor: Saijun Wu, Professor, Department of Physics, Fudan University Jan 2020 - Present

- Examined light-atoms interaction in the modal of classic dipoles
- Introduced nonlinear items into the coupled dipole model, in order to explain the unexpected decay rate of phase-mismatched atoms

❖ **UCLA-CSST program (canceled due to COVID-19)** May 2020 - Sept 2020
Advisor: Wes Campbell, Professor, Department of Physics, University of California, Los Angles

- Transformed ultra-cold atoms and molecules to quantum simulators, in order to solve intractable supercomputer simulations

❖ **Abnormal reflection of electromagnetic waves with metasurface** May 2019 - Jan 2020
Advisor: Lei Zhou, Professor, Department of Physics, Fudan University

- Induced abrupt phase addition, facilitated by artificial atoms or metasurface, in order to produce reflection angles that can be tuned at will according to Snell's Law
- Simulated various methods to achieve abnormal reflection by CST and Comsol, under the hypothesis that near field effects would boost the efficiency numerically

❖ **Preparation of graphene with zigzag edge by hydrogen plasma etching** Feb 2019-May 2019
Advisor: Mike Crommie, Professor, Department of Physics, UC Berkeley

- Exfoliation of 2D materials, including graphene and hexagonal boron nitride
- Vacuum annealing and Ar/H_2 annealing
- Introduced pits with zigzag edge on graphene by hydrogen plasma etching

- Conducted examinations and measurements under atom force microscopes (AFM)

❖ **Production of gratings with fine structures by lithography** Aug 2018 - Jan 2019
Advisor: Wei-Tao Liu, Professor, Department of Physics, Fudan University

- Constructed optical system similar to a Michelson interferometer after designing on CorelDraw, in order to produce special patterns for subsequent lithography

SKILLS

- Simulation: Comsol, CST
- Laboratory: AFM, exfoliation, annealing
- Programming: Python, Matlab, Mathematica, IDL

HONOURS AND AWARDS

- Chinese National Scholarship (2020, 2018)
- Member, *Junzheng Program* - scholarship for outstanding undergraduate research (2020)
  - Supported by the Chinese Undergraduate Research Endowment (CURE) and Zhengdao Li, Nobel Prize Winner in Physics
- Outstanding Project, *Venus Innovative Scientific Research Program* at Fudan (2017 - 2019)
  - Thesis: Optimal ingredients for up-conversion nanophosphors in bioimaging
  - Advisor: Wei Feng, Professor, Department of Chemistry, Fudan University
- Physics Honor Roll, Fudan University (2019)
- Silver Medal, 200-meter individual medley in the 2019 Chinese Swimming Competition for College Non-Athletes (2019)
- Honor Student in Fudan University (2018)

STANDARDIZED TESTS

- TOEFL: **109**/120 (Reading 29, Listening 29, Speaking 26, Writing 25)
- GRE: **330**/340 (Verbal 160, Quantitative 170, Writing 3.0)

EXTRACURRICULAR ACTIVITIES

- Vice Chairman, Swimming Association of Fudan University (2018 - Present)
- Member, *Siyuan Program* (2018 - Present)
  - Organized community and academic programming for cohort, with a focus on social responsibility and interdisciplinary collaboration.
  - Secured sponsorship from Acorn Campus Ventures and Suma Ventures
- Volunteer Physics Tutor - over 50 service hours during COVID-19 pandemic (Feb - Jun 2020)
- Cohort Representative, Department of Physics in Fudan University (2018 - 2019)
- Director of Academic Affairs, Physics Society in Fudan University (2018 Autumn Semester)