Bingbin Li

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EDUCATION

Fudan University, Department of Physics Sept. 2020 - Jun. 2024 (expected)
Bachelor of Science in Physics Overall GPA: 3.78 ; Ranking: 3/131 ; Major GPA: 3.87

EXPERIENCE

Twisting and Stacking of 2D Materials Oct. 2022 - May 2023
Research Assistant Nanomaterials and Device Laboratory, Department of Physics, Fudan University
Advisor: Prof. Faxian Xiu

- Designed and assembled a system for the deterministic transfer of 2D materials
- Prepared high-quality mechanically exfoliated few-layer 2D materials (graphene, h-BN, etc.)
- Transferred and stacked samples to get twisted double bilayer graphene (TDBG) on a silicon wafer
- Involved in the characterization of TDBG by Physical Property Measurement System (PPMS)

Nonadiabatic Molecular Dynamics (NAMD) Calculation on Doped Perovskite July 2023 - present
Research Assistant Key Laboratory of Computational Physical Science, Fudan University
Advisor: Prof. Weibin Chu

- Performed ab initio calculation in lattice relaxation, molecular dynamics, and self-consistent calculation of doped perovskite $MPbI_3$ (M = Cs, MA, FA) using VASP
- Used Fewest-Swithes Surface Hopping (FSSH) algorithm to perform nonadiabatic molecular dynamics (NAMD) calculation by Hefei-NAMD
- Analyzed the electron-hole recombination of $MPbI_3$

PROJECTS

Chemical Vapor Deposition (CVD) growth of Cd_3As_2 Jan. 2022

- Performed extensive growth of Cd3As2 growth by CVD tube furnaces on Si/SiO2 substrate
- Optimized the ambient condition for the growth of Cd3As2 on Si/SiO2 substrate

Investigation into 2D Antiferromagnetic Heisenberg Model using DMQMC Method Apr. 2022 - June 2022

- Calculated energy, staggered magnetization, correlation function, and other physical properties by HANDE-QMC

Y-86 Simulator Nov. 2022 - Dec. 2022

- Simulated a CPU with Y86 instructors (an instruction set architecture in *Computer Systems: A Programmer's perspective*, also known as CSAPP)
- Presented the operation of the simulated CPU on the web using the Django frame in Python and implemented frontend-backend communication

Degenerate Electron Gas and Superconductivity with Spin Polarization May 2023 - June 2023

- Derived the order parameter and the self-consistent equation of the finite center-of-mass momentum pairing state (also known as the FFLO state) using Bogoliubov transformation under mean-field approximation
- Explained the difference between the BCS state and the FFLO state in Cooper pairing

SELECTED HONORS AND AWARDS

- Second Prize of the Scholarship for Outstanding Students at Fudan University Dec. 2023
- Honors Student Award in Physics in National Top Talent Undergraduate Training Program, Fudan June 2023
- Second Prize of the Scholarship for Outstanding Students at Fudan University Dec. 2022
- Honors Student Award in Physics in National Strengthening Basic Disciplines Training Program May 2022
- Undergraduate Major Scholarship, Fudan University Oct. 2022
- Huawei Scholarship at Fudan University (the First Prize) (Top 5%) Dec. 2021
- Honors Student Award in Physics in National Strengthening Basic Disciplines Training Program May 2021

SKILLS

- **Programming:** C/C++; Python; LabVIEW; HTML; CSS; JavaScript
- **Software:** VASP; OriginLab; Mathematica; Zemax