

Yi-Shiuan Huang

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RESEARCH INTEREST

First-principles calculations / Excited states calculations / Bulk photovoltaic effect / Electron-phonon coupling / Quantum defect

SKILLS

First-principles calculations: Quantum espresso, BerkeleyGW, EPW, VASP, Wannier90

Tight-binding modeling: PythTB, Wannier Berri

Programming: Python, LINUX, Shell Scripting, LATEX

Language: Chinese (Native), English (Professional Working Proficiency)

EDUCATION

2021.9 ~ 2023.7 **National Taiwan University (NTU), Taipei, Taiwan**

Department of Physics

Master's degree majored in Physics

2017.9 ~ 2021.6 **National Taiwan University (NTU), Taipei, Taiwan**

Department of Physics

Bachelor's degree majored in Physics

PUBLICATION

2023.8 **Y.-S. Huang**, Y.-H. Chan, and G.-Y. Guo, Large shift currents via in-gap and charge-neutral excitons in a monolayer and nanotubes of BN, Phys. Rev. B 108, 075413

AWARDS AND SCHOLARSHIPS

2023.12.22 Best oral presentation at 4th 2DSynChar international workshop

2022.7.04 ~ 2022.9.30 Deutscher Akademischer Austauschdienst (DAAD) Taiwan Summer Institute Programme

RESEARCH EXPERIENCE

Research Assistant at Institute of Atomic and Molecular Science (IAMS), Academia

Sinica, Taipei, Taiwan

2023.8 ~ present Advisors: Prof. Guang-Yu, Guo (NTU), Yang-Hao, Chan (IAMS)

Collaborator: Prof. Zhenglu Li (USC)

- Study high-temperature phonon-mediated superconductivity with GW perturbation theory method

Graduate study

2021.9 ~ 2023.7 Advisors: Prof. Guang-Yu, Guo (NTU), Yang-Hao, Chan (IAMS)

- Study nonlinear optical responses in low dimensional materials using GW-BSE approaches
- Investigate quasiparticle and optical properties of wurtzite CdS using GW-BSE methods

Exchange research at Technische Universität Dortmund (TU Dortmund)

2022.7.04 ~ 2022.9.30

Advisors: Prof. Dr. Frithjof Anders (TU Dortmund), Guang-Yu, Guo (NTU)

- Calculate the effective three bands Green's function and local density of states of Mn impurities in graphene
- Supported by the DAAD Taiwan Summer Institute Programme

Undergraduate study

2020.7 ~ 2021.6

Advisor: Prof. Jer-Lai Kuo (IAMS)

- First principle calculations of infrared spectrum and its fermi resonance of methylamine family

TALKS AND POSTER PRESENTATIONS

2023.12.22

4th 2DSynChar international workshop

- Oral presentation on "Large shift current generated via in-gap and charge-neutral exciton excitations in BN nanotubes and single BN layer"
- Best oral presentation

2023.6.29 ~ 2023.6.30

The 21st Workshop on First-Principles Computational Materials Physics

- Oral presentation on "Large shift current generated via in-gap and charge-neutral exciton excitations in BN nanotubes and single BN layer"

2023.4.27 ~ 2023.4.29

2023 NCTS-KIAS Workshop on Ab Initio Approaches to Quantum Materials

- Poster presentation on "Large shift current generated via in-gap and charge-neutral exciton excitations in BN nanotubes and single BN layer"

2023.2.03

Academic Advisory Committee of IAMS, poster section

- Poster presentation on excitonic effect of nonlinear optics in atomically thin two-dimensional materials

2022.2.10 ~ 2022.2.11

Excited States mini-workshop

- Oral presentation on "Excited state GW-BSE calculations of Wurtzite CdS"

TEACHING ASSISTANT

2023.8.28 ~ 2023.9.01

Summer school on First Principles Computational Materials Research- Advance Level, National Center for Theoretical Sciences (NCTS) , Taiwan

2023.6.26 ~ 2023.6.27

Summer school on First Principles Computational Materials Research- Introductory Level, NCTS

2022.2.10 ~ 2022.2.11

Excited States mini-workshop, NCTS

OUTREACH

2019.3 ~ 2021.6

Member of Symphony Orchestra, NTU

2018.9 ~ 2019.6

President of Riot Jazz Orchestra, NTU