Kuan-Yu Wey 衛冠瑜

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Education

University of California, Los Angeles Sep. 2021 – Now
M.S. in Physics (on the Ph.D. program track) Sep. 2021 – Dec. 2022
Ph.D. Candidate in Physics and Astronomy (specialize in Condensed Matter Experiment) Advance to Candidacy in June 2024

- Advisor: Dr. Christopher Gutiérrez
- Current Topic：Probing the Atomic-scale Dynamics of a Quasi-1D Charge Density Wave System by in-plane Current-Tuned Scanning Tunneling Microscopy and Spectroscopy

National Taiwan University, NTU Sep. 2017 – Jan. 2021
B.S. in Physics (Overall GPA: 4.25/4.30; Ranking: 3/60)

- Advisor: Dr. Ya-Ping Chiu (邱雅萍博士), Dr. Mei-Yin Chou (周美吟博士)

Research focus (1): Superconducting Proximity Effect at Cuprate-Insulator Interface, advised by Dr. Ya-Ping Chiu
Research focus (2): First-Principles Study on Stacking of Twisted-Bilayer TMD Materials, advised by Dr. Mei-Yin Chou

Awards

- 教育部 114 年留學獎學金 Government Scholarship to Study Abroad (GSSA) June 2025 to May 2027
- **Julian Schwinger Fellowship -** granted to only one student per year Oct. 2021 to Sep. 2025
- **Best Poster Award in 2023 CA-USG Workshop on 2D Materials** Sep. 2023
- **Chau-Ting Chang Summer Research Scholarship, Academia Sinica** Aug. 2020
  Outstanding performance in summer research in institute of atomic and molecular sciences
- **Excellent Poster Award, Annual Meeting of the Physical Society of Taiwan** Feb. 2020
  Top 1 of 26 in Surface Science field
- **Presidential Award (Five Times), Department of Physics, NTU** 2018 Spring & Fall, 2019 Spring & Fall, 2020 Fall

Publication and Presentations

[1] J. Green, H. W. T. Morgan, M. Mandigo-Stoba, W. T. Laderer, **K.-Y. Wey**, A. G. Prado, C. Jozwiak, A. Bostwick, E. Rotenberg, C. Gutiérrez, A. N. Alexandrova, and N. Ni. "Mapping the three-dimensional fermiology of the triangular lattice magnet EuAg4Sb". (*Physical Review B* **111**, 085139, 2025)

[2] **K.-Y. Wey**, M. Mandigo-Stoba, S. Brown, C. Gutiérrez. "Imaging and Tuning Microscope Phase in a Charge Density Wave" In IBS Conference on STM'25.

[3] **K.-Y. Wey**, M. Mandigo-Stoba, W. Laderer, S. Brown, C. Gutiérrez. "Probing the atomic-scale dynamics of correlated systems using in-plane Current-Tuned Scanning Tunneling Microscopy and Spectroscopy (CT-STM/STS)." in 2025 APS March Meeting.

[4] **K.-Y. Wey**, M. Mandigo-Stoba, A. G. Prado, S. E. Brown, C. Gutiérrez. "Atomic-scale insights into a quasi-1D CDW system by scanning tunneling microscopy and in situ electronic transport" in 2024 APS March Meeting.

[5] **K.-Y. Wey**, M. Mandigo-Stoba, A. G. Prado, S. Brown, A. Alexandrova, C. Gutiérrez. "Atomically Resolved Imaging and in situ Electronic Transport in a Low-dimensional CDW." in 2023 CA-USG Workshop on 2D Materials.

[6] C.-C. Hsu, B.-C. Huang, **K.-Y. Wey**, P. Ebert, Y.-P. Chiu. "Superconducting Proximity Effect at Cuprate-Insulator Interface Using Cross-sectional Scanning Tunneling Microscopy." in 2020 Physical Society of Taiwan.

Research Experience

- **Dynamics of Charge-Density Wave Using Scanning Tunneling Microscope** Nov.2022 – Present
  Probing the Atomic-scale Dynamics of a Quasi-1D CDW System by in-plane CT-STM/STS
- **Band Structures Characterization by ARPES** May 2021 – Present (Only When Beam Time)
  Using Angle-Resolve Photoemission Spectroscopy (ARPES) to measure single crystals/2D devices under large strain.
- **First-Principles Study Internship** July 2020 – Jan. 2021
  First-Principles Study on Different Stackings of Twisted-Bilayer Transitional Metal Dichalcogenides
- **STM Field Emission Resonance (FER) Study** July 2019 – Aug. 2019
  Summer Intern at Academia Sinica. Learning STM/STS and FER under supervision of Dr. Wei-Bin Su and Dr. Chia-Sheng Chang