

Publication

Selected publications

1. Y. Li*, X. Xu, M.-H. Lee, M.-W. Chu, and C. L. Chien*, 2019: Observation of Half-Quantum Flux in the Unconventional Superconductor β -Bi₂Pd. *Science*, 366, 238.
2. F.-T. Huang, S. J. Lim, S. Singh, J. Kim, L. Zhang, J.-W. Kim, M.-W. Chu, K. Rabe, D. Vanderbilt, and S.-W. Cheong*, 2019: Polar and Phase Domain Walls with Conducting Interfacial States in a Weyl Semimetal MoTe₂. *Nature Communications*, 10, 4211.
3. C.-P. Su, A. Kr. Singh, T.-C. Wu, M.-C. Chen, Y.-C. Lai, W.-L. Lee, G. Y. Guo, and M.-W. Chu*, 2019: Impact of Strain-Field Interference on the Coexistence of Electron and Hole Gases in SrTiO₃/LaAlO₃/SrTiO₃. *Phys. Rev. Materials*, 3, 075003.
4. W.-T. Hsu, L.-S. Lu, P.-H. Wu, M.-H. Lee, P.-J. Chen, P.-Y. Wu, Y.-C. Chou, H.-T. Jeng, L.-J. Li, M.-W. Chu, and W.-H. Chang*, 2018: Negative Circular Polarization Emissions from WSe₂/MoSe₂ Commensurate Heterobilayers. *Nature Communications*, 9, 1356.
5. M. H. Lee, C.-P. Chang, F.-T. Huang, G. Y. Guo, B. Gao, C. H. Chen, S.-W. Cheong, and M.-W. Chu*, 2017: Hidden Antipolar Order Parameter and Charged Néel-Type Domain Walls in Hybrid Improper Ferroelectrics. *Phys. Rev. Lett.*, 119, 157601. **[Cover of the issue]**
6. P.-W. Lee, M.-H. Lee, S.-C. Lee, C.-P. Chang, Y.-C. Lai, G. Y. Guo, Y.-H. Chu, W.-L. Lee, C. H. Chen, and M.-W. Chu*, 2017: Quantitative STEM-EELS Characterizations of Oxide Superlattices and Atomic-Scale Electron Spectroscopy at 100 K at National Taiwan University. *JEOL News*, 52, 23-28. **[Invited]**
7. S.-Y. Guan, P.-J. Chen, M.-W. Chu, R. Sankar, F. C. Chou, H.-T. Jeng, C.-S. Chang, T.-M. Chuang*, 2016: Superconducting topological surface states in the noncentrosymmetric bulk superconductor PbTaSe₂. *Science Advances*, 2, e1600894.
8. P. W. Lee, V. N. Singh, G. Y. Guo*, H.-J. Liu, Y.-H. Chu*, C. H. Chen, and M.-W. Chu*, 2016: Hidden lattice instabilities as origin of the conductive interface between insulating LaAlO₃ and SrTiO₃. *Nature Communications*, 7, 12773.
9. M.-H. Liu, Y.-W. Chen, X. Liu, J.-L. Kuo, M.-W. Chu*, and C.-Y. Mou*, 2016: Defect-mediated gold substitution doping in ZnO mesocrystals and catalysis in CO oxidation. *ACS Catalysis*, 6, 115-122.
10. S. C. Liou, C.-S. Shie, C. H. Chen, R. Breitwieser, W. W. Pai, G. Y. Guo*, and M.-W. Chu*, 2015: π -plasmon dispersion in free-standing graphene by momentum-resolved electron energy-loss spectroscopy. *Phys. Rev. B*, 91, 045418. **[PRB Editors' Suggestion]**
11. F.-T. Huang, X. Wang, S. M. Griffin, Y. Kumagai, O. Gindele, M.-W. Chu, Y. Horibe, N. A. Spaldin, and S.-W. Cheong*, 2014: Duality of topological defects in hexagonal manganites. *Phys. Rev. Lett.*, 113, 267602.
12. M. H. Lee, C. H. Chen, C. M. Tseng, C. S. Lue, Y. K. Kuo, H. D. Yang, and M.-W. Chu*, 2014: Concomitant charge-density-wave and unit-cell-doubling structural transitions in Dy₅Ir₄Si₁₀. *Phys. Rev. B*, 89, 195142. **[PRB Kaleidoscope]**

13. C.-P. Chang, M.-W. Chu*, H. T. Jeng*, S.-L. Cheng, J. G. Lin, J.-R. Yang, and C. H. Chen, 2014: Condensation of two-dimensional oxide-interfacial charges into one-dimensional electron chains by the misfit-dislocation strain field. *Nature Communications*, 5, 3522.
14. M.-W. Chu* and C. H. Chen*, 2013: Chemical mapping and quantification at the atomic scale by scanning transmission electron microscope. *ACS Nano*, 7, 4700-4707. **[Invited Perspective]**
15. C.-P. Chang, J. G. Lin, H. T. Jeng, S.-L. Cheng, W. F. Pong, Y. C. Shao, Y. Y. Chin, H.-J. Lin, C. W. Chen, J.-R. Yang, C. H. Chen, and M.-W. Chu*, 2013: Atomic-scale observation of a graded polar discontinuity and a localized two-dimensional electron density at an insulating oxide interface. *Phys. Rev. B*, 87, 075129.
16. T.-K. Hsiao, H.-K. Chang, S.-C. Liou, M.-W. Chu, S.-C. Lee, and C.-W. Chang*, 2013: Observation of room-temperature ballistic thermal conduction persisting over 8.3 μm in SiGe nanowires. *Nature Nanotechnology*, 8, 534-538.
17. F.-T. Huang, M.-W. Chu, H. H. kung, W. L. Lee, R. Sankar, S.-C. Liou, K. K. Wu, Y. K. Kuo, and F. C. Chou*, 2012: Nonstoichiometric doping and Bi antisite defect in single crystal Bi_2Se_3 . *Phys. Rev. B*, 86, 081104. **[PRB Editors' Suggestion]**
18. F. K. Chiang, M.-W. Chu*, F. C. Chou, H. T. Jeng, F. R. Chen, and C. H. Chen, 2011: Effect of Jahn-Teller Distortion on Magnetic Ordering in $\text{Dy}(\text{Fe},\text{Mn})\text{O}_3$ Perovskites. *Phys. Rev. B*, 83, 245105.
19. F.-T. Huang, A. Gloter*, M.-W. Chu, F. C. Chou, G. J. Shu, L. K. Liu, C. H. Chen, and C. Colliex, 2010: Scanning transmission electron microscopy using selective high-order Laue zones: three-dimensional atomic ordering in sodium cobaltate. *Phys. Rev. Lett.*, 105, 125502.
20. M.-W. Chu, S. C. Liou, C.-P. Chang, F.-S. Chao, and C. H. Chen*, 2010: Emergent chemical mapping at atomic-column resolution by energy-dispersive X-Ray spectroscopy in an aberration-corrected electron microscope. *Phys. Rev. Lett.*, 104, 196101.
21. M.-W. Chu and C. H. Chen, 2010: Current progresses of electron energy-loss spectroscopy in National Taiwan University: applications in plasmonics and surface resonances in nanomaterials. *Microscopy*, 45, 3-8. **[Invited; in Japanese]**
22. S. C. Liou, M.-W. Chu*, Y. J. Lee, M. Hong, J. Kwo, and C. H. Chen, 2009: Surface exciton polariton in monoclinic HfO_2 : an electron energy-loss spectroscopy study. *New J. Phys.*, 11, 103009.
23. F.-T. Huang, M.-W. Chu*, G. J. Shu, H. S. Sheu, C. H. Chen, L.-K. Liu, Patrick A. Lee, F. C. Chou, 2009: X-ray and Electron Diffraction Studies of Superlattices and Long-range Three-dimensional Na Ordering in $\gamma\text{-Na}_x\text{CoO}_2$ ($x = 0.71$ and 0.84). *Phys. Rev. B*, 79, 014413.
24. M.-W. Chu*, V. Myroshnychenko*, C. H. Chen, J.-P. Deng, C.-Y. Mou, F. J. García de Abajo, 2009: Probing Bright and Dark Surface-Plasmon Modes in Individual and Coupled Noble Metal Nanoparticles Using an Electron Beam. *Nano Lett.*, 9, 399-404. **[Highly Cited Paper in Physics, 2015~2018]**
25. F. C. Chou*, M.-W. Chu*, G. J. Shu, F.-T. Huang, Woei Wu Pai, H. S. Sheu, Patrick A. Lee, 2008:

Sodium Ion Ordering and Vacancy Cluster Formation in Na_xCoO_2 ($x = 0.71$ and 0.84) Single Crystals by Synchrotron X-ray Diffraction. *Phys. Rev. Lett.*, 101, 127404.

26. M.-W. Chu, C. H. Chen*, F. J. García de Abajo, J. P. Deng, and C. Y. Mou, 2008: Surface Exciton Polaritons in Individual Au Nanoparticles in the Far-UV Spectral Regime. *Phys. Rev. B*, 77, 245402.