

## **Publication**

### **Selected publications**

1. I. C. Lin, M. H. Lee, P. C. Wu, S. C. Lin, J. W. Chen, C.-C. Li, G. Y. Guo, Y.-H. Chu, R. Sankar, and M.-W. Chu\*, 2022: Atomic-Scale Observation of Spontaneous Hole Doping and Concomitant Lattice Instabilities in Strained Nickelate Films. *New J. Phys.*, 24, 023011. **[WoS 被引参考文献深度分析]**
2. M.-W. Chu\*, G. Y. Guo, W. T. Chen, M. H. Lee, S. H. Lee, Y.-C. Lai, C. H. Du, and C. H. Chen, 2021: Probing Charge Orders and Hidden Topology at the Atomic Scale by Cryogenic Scanning Transmission Electron Microscopy and Spectroscopy. *Phys. Rev. B.*, 103, 115130.
3. X. Xu, F.-T. Huang, Y. Qi, S. Singh, K. M. Rabe, D. Obeysekera, J. Yang, M.-W. Chu, and S.-W. Cheong\*, 2021: Kinetically stabilized ferroelectricity in bulk single-crystalline HfO<sub>2</sub>:Y. *Nature Materials*, 20, 826. **[Highly Cited Paper in Physics, 2021~]**
4. Y. Li\*, X. Xu, M.-H. Lee, M.-W. Chu, and C. L. Chien\*, 2019: Observation of Half-Quantum Flux in the Unconventional Superconductor  $\beta$ -Bi<sub>2</sub>Pd. *Science*, 366, 238.
5. 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 MoTe<sub>2</sub>. *Nature Communications*, 10, 4211.
6. 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 SrTiO<sub>3</sub>/LaAlO<sub>3</sub>/SrTiO<sub>3</sub>. *Phys. Rev. Materials*, 3, 075003.
7. 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]**
8. 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 PbTaSe<sub>2</sub>. *Science Advances*, 2, e1600894.
9. 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 LaAlO<sub>3</sub> and SrTiO<sub>3</sub>. *Nature Communications*, 7, 12773.
10. S. C. Liou, C.-S. Shie, C. H. Chen, R. Breitwieser, W. W. Pai, G. Y. Guo\*, and M.-W. Chu\*, 2015:  $\pi$ -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 Dy<sub>5</sub>Ir<sub>4</sub>Si<sub>10</sub>. *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  $\mu\text{m}$  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  $\text{Bi}_2\text{Se}_3$ . *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. S. C. Liou, M.-W. Chu\*, Y. J. Lee, M. Hong, J. Kwo, and C. H. Chen, 2009: Surface exciton polariton in monoclinic  $\text{HfO}_2$ : an electron energy-loss spectroscopy study. *New J. Phys.*, 11, 103009.
22. 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.
23. 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]**
24. 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  $\text{Na}_x\text{CoO}_2$  ( $x = 0.71$  and  $0.84$ ) Single Crystals by Synchrotron X-ray Diffraction. *Phys. Rev. Lett.*, 101, 127404.
25. 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.