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Adjunct Professor

B.S. in Physics, National Taiwan Univ.,
1968

Ph.D. in Physics, Cornell Univ., 1974

Research and Professional Interests

1. Physics of colossal magnetoresistive (CMR) transition metal oxides
2. Electron diffraction and transmission electron microscopy (TEM) at low temperatures
3. Electron energy-loss spectroscopy using a nanoprobe in a scanning TEM (STEM) Structural phase transitions driven by electronic instabilities

Projects (started from 2010)

1. 複雜材料中由於電子組態之不穩定性所引起之相變化：低溫電子顯微技術之探討 Sponsored by National Science Council 96/8/1-99/7/31 NT\$7,808,000
2. 北台灣奈米科技核心設施服務計畫-台灣大學(NSC 100-2120-M-002) 99/08/01-102/07/31
3. 電漿子學：基礎研究與應用(NSC 100-2628-M-002)98/08/01-102/07/31

SCI Papers

1. Wu, C.-T., Chu, M.-W., Liu, C.-P., Chen, K.-H., Chen, L.-C., Chen, C.-W., and **Chen, C.-H.**, "Studies of Electronic Excitations of Rectangular ZnO Nanorods by Electron Energy-Loss Spectroscopy," *Plasmonics*, Volume 7, Issue 1, March 2012, Pages 123-130 (2012)
2. M. H. Lee, **C. H. Chen**, M. W. Chu, C. S. Lue, and Y. K. Kuo, "Electronically Phase-Separated Charge-Density Waves in $\text{Lu}_2\text{Ir}_3\text{Si}_5$," *Phys. Rev. B* 83, 155121 (2011).
3. C. K. Chiang, M. W. Chu, H. T. Jeng, H. S. Sheu, F. R. Chen, and **C. H. Chen**, "Effect of Jahn-Teller Distortion on Magnetic Ordering in $\text{Dy}(\text{Fe},\text{Mn})\text{O}_3$ Perovskite," *Phys. Rev. B* 83, 245105 (2011).
4. T.-C. Han, J. G. Lin, T. C. Wu, M.-W. Chu, and **C. H. Chen**, "Substrate-Dependent Growth of HoMnO_3 Films," *Jpn. J. Appl. Phys.* 49, 041501 (2010).

5. M-W. Chu, S. C. Liou, C-P. Chang, S. F. Choa, and **C. H. Chen**, “Emergent Chemical Mapping at Atomic-Column Resolution by Energy-Dispersive X-ray Spectroscopy in an Aberration-Corrected Electron Microscope”, *Phys. Rev. Lett.* 104, 196101 (2010).
6. F. -T. Huang, A. Gloter, M - W. Chu, F. C. Chou, G. J. Shu, L.-K. Liu, **C. H. Chen**, and C. Colliex, “Scanning transmission electron microscopy using selective high-order Laue zones: three-dimensional atomic ordering in sodium cobaltate”, *Phys. Rev. Lett.* **105**, 125502 (2010).
7. C. T. Wu, M-W. Chu, S-B. Wang, M-S. Hu, K. H. Chen, L. C. Chen, C. W. Chen, and **C. H. Chen**, “Anisotropic Surface Plasmon Excitation in Au-Silica Nanowire”, *Appl. Phys. Lett.* 96, 263106 (2010).
8. Y-M. Chang, S. C. Liou, **C. H. Chen**, H-M. Lee, and S. Gwo, “The Electrostatic Coupling of Longitudinal Optical Phonon and Plasmon in Wurtzite InN Thin Films”, *Appl. Phys. Lett.* 96, 041908 (2010).
9. C.-L. Lin, S. Chattopadhyay, C.-W. Hsu, M.-H. Wu, W-C. Chen, C-T. Wu, S.-C. Tseng, J.-S. Hwang, J.-H. Lee, C. W. Chen, **C. H. Chen**, L. C. Chen, and K.-H. Chen, “Enhanced Charge Separation by Sieve-Layer Mediation in High Efficiency Inorganic-Organic Solar Cell”, *Adv. Mater.* 21, 759 (2009).
10. M. W. Chu, V. Myroshnychenko, **C. H. Chen**, J. P. Deng, C. Y. Mou, and F. J. G. de Abajo, “Probing Bright and Dark Surface-Plasmon Modes in Individual and Coupled Noble Metal Nanoparticles Using an Electron Beam”, *Nano Letters* 9, 399 (2009).
11. F. T. Huang, M. W. Chu, G. J. Shu, H. S. Sheu, **C. H. Chen**, L. K. Liu, P. A. Lee, and F. C. Chou, “X-Ray and Electron Diffraction Studies of Superlattices and Long-Range Three-Dimensional Na Ordering in γ -Na_xCoO₂ (x=0.71 and 0.84)”, *Phys. Rev. B* 79, 014413 (2009).
12. Y. Horibe, J-S. Ahn, P. A. Sharma, S. Mori, **C. H. Chen**, S-J Oh, and S-W. Cheong, “Two Types of Charge Ordering in Half-Doped Manganites Bi_{0.5}(Ca,Sr)_{0.5}MnO₃”, *J. Phys. Soc. Jpn.* 78, 044704 (2009).
13. M. W. Chu, P. Sharma, C. P. Chang, S. C. Liou, K. T. Tsai, J. K. Wang, Y. L. Wang, and **C. H. Chen**, “Probing Surface Plasmons in Individual Ag Nanoparticles in the Ultraviolet Spectral Regime”, *Nanotechnology* 20, 235705 (2009).
14. S. C. Liou, M-W. Chu, Y. J. Lee, J. R. Kwo, M. Hong, and **C. H. Chen**, “Surface Exciton Polariton in Monoclinic HfO₂: an Electron-Energy Loss Spectroscopy Study”, *New J. Phys.* 11, 103009 (2009).

15. A. Gloter, M. W. Chu, **C. H. Chen**, and C. Colliex, "Probing Non-Dipole Allowed Excitations in Highly Correlated Materials with Nanoscale Resolution", *Ultramicroscopy* 109, 1333 (2009).
16. Y. F. Chiang, Y. J. Hsu, T. M. Liu, H. W. Chu, J. G. Lin, **C. H. Chen**, and Y. M. Chang, "Magnetization Reversal Process of Ferromagnetic Granular Thin Films Probed by Magnetization-Induced Second Harmonic Generation", *Appl. Phys. Lett.* 95, 172515 (2009).
17. M. C. Lin, Y. S. Chen, T. C. Han, J. G. Lin, and **C. H. Chen**, "Origin of R-Dependent Dielectric Anomalies in RMnO₃ with R=Y, Ho, Er, Tm, Yb, and Lu", *Ferroelectric* 380, 38 (2009).
18. R.S. Liu, V. Drozd, N. Bagkar, C.C. Shen, I. Baginskiy, **C.H. Chen**, and C.H. Tan, "Direct White Light Phosphor Based on Metallorganic Coordination Extended Networks for UV-Light-Emitting Diodes", *J Electrochem. Soc.*, 155, 71 (2008).
19. S.C. Liou, M.W. Chu, **C.H. Chen**, Y.J. Lee, P. Chang, W.C. Lee, M. Hong, and J. Kwo, "Transmission Electron Microscopy Characterization of HfO₂/GaAs(001) Heterostructures Grown by Molecular Beam Epitaxy", *Appl. Phys. A* 91, 585 (2008).
20. D. Hsu, J.G. Lin, C.P. Chang, **C.H. Chen**, C.H. Chiang, W.C. Chan, and W.F. Wu, "Thickness Dependent Spin-Injection Effects in Nd_{0.7}Ca_{0.3}MnO₃/YBa₂Cu₃O₇", *J. Appl. Phys.* 103, 07C710 (2008).
21. C.M. Tseng, **C.H. Chen**, and H.D. Yang "Direct Observation of Charge-Density Waves in Ho₅Ir₄Si₁₀", *Phys. Rev. B*, 77, 155131 (2008).
22. J. Ghatak, B. Sundaravel, K.G.M. Nair, S.C. Liou, **C.H. Chen**, and P.V. Satyam, "Mass Transport in Ion-Nanostructure Interactions", *Nuclear Inst. Methods Phys. Res. B*, 266, 1671 (2008).
23. J.G. Lin, T.C. Han, C.T. Wu, C.W. Chu and **C.H. Chen** "Directional Growth and Characterizations of Orthorhombic HoMnO₃ Films", *J. Cryst. Growth* , 310, 3878 (2008).
24. M.W. Chu, **C.H. Chen**, F.J.G. de Abajo, J.P. Deng, and C.Y. Mou "Surface Exciton Polaritons in Individual Au Nanoparticles in the Far-UV Spectral Regime", *Phys. Rev. B* , 77, 245402 (2008).

International Conference Papers

1. **C. H. Chen**, "Plasmonics in Nanomaterials and Interdiffusion at Oxide Interfaces" Telluride Workshop on Interfacial Phenomena in Nanostructured Materials and Device", Telluride, Colorado, USA, February 6-10, 2012.

2. **C. H. Chen**, "Atomic Scale Observation of Inverse Charge Transfer at an Oxide Interface", Tonomura FIRST International Symposium on Electron Microscopy and Gauge Fields, Tokyo, Japan, May 9-10, 2012.