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Education

Ph. D. Physics	June 2008	Stanford University; Stanford, California 94305, USA
	<i>Advisor:</i>	Prof. Zhi-Xun Shen
	<i>Dissertation:</i>	Angle resolved photoemission study on multi-layer high temperature superconductor and advances on photoemission spectroscopy
B. S. Physics	June 2000	University of Science & Technology of China; Hefei, China
	<i>Advisor:</i>	Prof. Kezun Xu
	<i>Dissertation:</i>	Experiment scheme for single atom recognition and development of related instruments

Research Experience

Oxford University (Physics department) Associate Professor & Fellow of Jesus College	2014~present
Oxford University (Physics department) University Lecturer & Fellow of Jesus College	2012~2014
Stanford University (SIMES, SLAC National Accelerator Laboratory) Staff Scientist	2010~2011
Stanford University (SIMES, SLAC National Accelerator Laboratory) Associate Staff Scientist	2009~2010
Stanford University (SLAC National Accelerator Laboratory) Post-Doctoral Research	2008~2009
Stanford University (Physics Department) Research Assistant	2000~2003, 2006~2008
Lawrence Berkeley National Laboratory Beamline (HERS) Assistant	2001 ~ 2008
National Lab of Synchrotron Elettra, Trieste Italy Beamline (BACH) Assistant	2003 ~ 2006
University of Science & Technology of China Research Assistant	1997 ~ 2000

Teaching Experience

Oxford University (Jesus College/Physics department):

“Mechanics”, “Special relativity”, “Statistical physics”, “Thermal Physics”, “Statistics & Data Analysis”
“Electromagnetism”, “Quantum, Atomic and Molecular Physics.” **2012-2013**

Stanford University (Physics Department):

“Electricity and optics”(2006), “Light and heat” (2001), and “Electricity” (2001)

Honors and Awards

Outstanding Young Researcher Award (Macronix Prize) 2012

Institution: International Organization of Chinese Physicists and Astronomers

William E. and Diane M. Spicer Young Investigator Award 2009

Institution: Stanford Synchrotron Radiation Lightsource

ABC interview on realization of topological insulator Bi_2Te_3 2009

Video link: <http://abclocal.go.com/kgostory?section=news/technology&id=6871012>

ALS Doctoral Fellow 2003 ~ 2006

Institution: Advanced Light Source (ALS), Lawrence Berkeley National Laboratory

Outstanding Thesis Award 2000

Institution: Department of Modern Physics, University of Science and Technology of China

Procter & Gamble Scholarship for Outstanding Student 2000

Institution: University of Science and Technology of China (funded by Procter & Gamble Co.)

University Scholarship for Outstanding Student 1996, 97, 98, 99

Institution: University of Science and Technology of China

University Scholarship for Outstanding New Student 1995

Institution: University of Science and Technology of China

Invited Presentations

1. “*Visualization of Novel Electronic Structures in Topological Quantum Matter*”

17th International Conference on Crystal Growth and Epitaxy, 2013

2. “*Visualization of Novel Electronic Structures in Topological Insulators*”

2012 CECAM conference, Bremen, Germany, August, 2012

3. “*Experimental observation and manipulation of topological surface states*”

MRS (Materials Research Society) Spring Meeting San Francisco, USA, April, 2012

4. “*Topological Insulator Thin Film Electronics Structure and Application in Flexible Transparent Electrode*”

2012 EMN (Energy, Materials and Nanotechnology) conference, Orlando, USA, April 2012

5. “*Experimental observation and manipulation of topological surface states*”
26th International Conference on Low Temperature Physics: Topological Insulator and Superconductors Satellite conference, Beijing, China August, 2011
6. “*Direct Probing the Electronic Structures of Topological Insulators*”
American Physical Society March Meeting, Dallas, USA, March, 2011
7. “*ARPES measurements on topological insulators*”
SpinAge 2010, Watsonville, USA, August, 2010
8. “*Experimental observation of the electronic structure of topological insulators*”
Chinese academy of Science, IOP 2010Forum, Beijing, China, July, 2010
9. “*Experimental Realization of a Three-Dimensional Topological Insulator*”
American Physical Society March Meeting, Portland, USA, March, 2010
10. “*Experimental Realization of a Large Gap 3D Topological Insulator with a Single Dirac-Cone on the Surface*”
Exotic Insulating States of Matter, John Hopkins University, USA, Jan, 2010
11. “*ARPES measurements on topological insulators*”
Spin Currents 2009; South Lake Tahoe USA, April. 2009
12. “*ARPES Study on the Self-doping High Tc Superconductor $Ba_2Ca_3Cu_4O_8F_2$* ”
62nd annual meeting of Japan Physical Society; Sapporo Japan, Sept. 2007
13. “*ARPES study on four layered cuprate superconductor $Ba_2Ca_3Cu_4O_8(O_{\delta}F_{1-\delta})_2$* ”
8th International Conference on Materials and Mechanisms of Superconductivity and High Temperature Superconductors; Dresden Germany, July 2006
14. “*Photoemission Study on Four Layer High Tc Superconductor F0234*”
18th International Symposium on Superconductivity; Tsukuba Japan, Oct. 2005

Conference Presentations

1. “*Ambipolar field effect in a ternary topological insulator by composition tuning*”
American Physical Society March Meeting; Boston MA, Feb 2012
2. “*Massive Dirac Fermion on the Surface of a Magnetically Doped Topological Insulator*”
American Physical Society March Meeting; Dallas TX, March 2011
3. “*Energy scales revealed by ARPES study on four layered cuprate superconductor F0234*”
American Physical Society March Meeting; Denver CO, March 2007
4. “*Doping dependence study by ARPES on four layered cuprate superconductor $Ba_2Ca_3Cu_4O_8(O_{\delta}F_{1-\delta})_2$* ”
American Physical Society March Meeting; Baltimore MD, March 2006
5. “*ARPES study on four layered superconductor compound $Ba_2Ca_3Cu_4O_8F_2$ (F0234)*”

Selected Publications (*Total citation: 2243*)

1. Z. K. Liu, B. Zhou, Z. J. Wang, H. M. Weng, D. Prabhakaran, S. -K. Mo, Y. Zhang, Z. X. Shen, Z. Fang, X. Dai, Z. Hussain, **Y. L. Chen**
“Discovery of a Three-dimensional Topological Dirac Semimetal, Na_3Bi ”
Science, in press *Citation: N/A*
2. **Y. L. Chen**, M. Kanou, Z. K. Liu, H. J. Zhang, J. A. Sobota, D. Leuenberger, S. K. Mo, B. Zhou, S.-L. Yang, P. S. Kirchmann, D. H. Lu, R. G. Moore, Z. Hussain, Z. X. Shen, X. L. Qi, and T. Sasagawa
“Discovery of a single topological Dirac fermion in the strong inversion asymmetric compound BiTeCl ”
Nature Physics, 9, 704 (2013) *Citation: N/A*
3. Yunfan Guo, Mahaya Aisijiang, Kai Zhang, Wei Jiang, **Yulin Chen**, Wenshan Zheng, Zehao Song, Jie Cao, Zhongfan Liu, Hailin Peng.
“Selective-area van der Waals epitaxy of topological insulator grid nanostructures for broadband transparent flexible electrodes”
Advanced Materials, in press *Citation: N/A*
4. Li Zhang, Merav Dolev, Qi I. Yang, Robert H. Hammond, Bo Zhou, Alexander Palevski, **Yulin Chen**, Aharon Kapitulnik
“Weak Localization Effects as Evidence for Bulk Quantization in Thin Films Bi_2Se_3 ”
Phys. Rev. B, 88, 121103R (2013) *Citation: N/A*
5. S. Li, S. E. Harrison, Y. Huo, A. Pushp, H. T. Yuan, B. Zhou, A. J. Kellock, S. S. P. Parkin, **Y.-L. Chen**, T. Hesjedal, and J. S. Harris
“Magnetic properties of gadolinium substituted Bi_2Te_3 thin films”
Appl. Phys. Lett. 102, 242412 (2013) *Citation: N/A*
6. S. E. Harrison, S. Li, Y. Huo, B. Zhou, **Y. L. Chen**, and J. S. Harris
“Two-step growth of high quality Bi_2Te_3 thin films on Al_2O_3 (0001) by molecular beam epitaxy”
Appl. Phys. Lett. 102, 171906 (2013) *Citation: 1*
7. Z. K. Liu, R.-H. He, D. H. Lu, M. Yi, **Y. L. Chen**, M. Hashimoto, R. G. Moore, S.-K. Mo, E. A. Nowadnick, J. Hu, T. J. Liu, Z. Q. Mao, T. P. Devereaux, Z. Hussain, and Z.-X. Shen
“Measurement of coherent polarons in the strongly coupled antiferromagnetically ordered iron-chalcogenide $\text{Fe}_1.02\text{Te}$ using angle-resolved photoemission spectroscopy”
Phys. Rev. Lett., 110, 037003 (2013) *Citation: 7*
8. S. H. Yao, B. Zhou, M. H. Lu, Z. K. Liu, Y. B. Chen, J. G. Analytis, C. Brüne, W. H. Dang, S.-K. Mo, Z.-X. Shen, I. R. Fisher, L. W. Molenkamp, H. L. Peng, Z. Hussain, **Y. L. Chen**
“Observing electronic structures on ex-situ grown topological insulator thin films”
Phys. Status Solidi RRL, 7, 130(2013) *Citation: 2*

9. Bo Zhou, Z. K. Liu, J. G. Analytis¹, K. Igarashi, S. K. Mo, D. H. Lu, R. G. Moore, I. R. Fisher, T. Sasagawa, Z. X. Shen, Z. Hussain, and **Y. L. Chen**
"Controlling the carriers of topological insulators by bulk and surface doping"
Semicond. Sci. Technol. **27** 124002 (2012) *Citation: 1*

10. S.-K. Mo, W. S. Lee, F. Schmitt, **Y. L. Chen**, D. H. Lu, C. Capan, D. J. Kim, Z. Fisk, C.-Q. Zhang, Z. Hussain, and Z.-X. Shen
"Emerging coherence with unified energy, temperature, and lifetime scale in heavy fermion YbRh₂Si₂"
Phys. Rev. B **85**, 241103(R) (2012) *Citation: 4*

11. Hui Li⁺, Jie Cao⁺, Wenshan Zheng⁺, **Yulin Chen**⁺, Di Wu, Wenhui Dang, Kai Wang, Hailin Peng, Zhongfan Liu
⁺ These authors contributed equally to this work
"Controlled synthesis of topological insulator nanoplate arrays on mica"
Journal of the American Chemical Society, **134**, 6132 (2012) *Citation: 15*

12. W. S. Lee, Y. D. Chuang, R. G. Moore, Y. Zhu, L. Patthey, M. Trigo, D. H. Lu, P. S. Kirchmann, O. Krupin, M. Yi, M. Langner, N. Huse, J. S. Robinson, **Y. Chen**, S. Y. Zhou, G. Coslovich, B. Huber, D. A. Reis, R. A. Kaind, R. W. Schoenlein, D. Doering, P. Denes, W. F. Schlotter, J. J. Turner, S. L. Johnson, M. Först, T. Sasagawa, Y. F. Kung, A. P. Sorini, A. F. Kemper, B. Moritz, T. P. Devereaux, D.-H. Lee, Z. X. Shen, and Z. Hussain
"Phase Fluctuations and the Absence of Topological Defects in Photo-excited Charge Ordered Nickelate"
Nature Communication, Nature Commun. **3**, 838 (2012) *Citation: 10*

13. Hailin Peng, Wenhui Dang, Jie Cao, **Yulin Chen**, Di Wu, Wenshan Zheng, Hui Li, Zhi-Xun Shen, Zhongfan Liu
"Topological insulator nanostructures for transparent flexible electrodes"
Nature Chemistry, **4**, 281 (2012) *Citation: 32*

14. Donghui Lu, Inna M. Vishik, Ming Yi, **Yulin Chen**, Rob G. Moore, and Zhi-Xun Shen
"Angle-Resolved Photoemission Studies of Quantum Materials"
Annual Review of Condensed Matter Physics, **3**, 129 (2012) *Citation: 5*

15. Z. K. Liu, **Y. L. Chen**, J. G. Analytis, S. K. Mo, D. H. Lu, R. G. Moore, I. R. Fisher, Z. Hussain, Z. X. Shen
"Robust topological surface state against direct surface contamination"
Physica E, **44**, 891 (2012) *Citation: 6*

16. **Yulin Chen**
"Studies on the Electronic Structures of Three-dimensional Topological Insulators by Angle Resolved Photoemission Spectroscopy"
Frontiers of Physics, **7**, 175 (2012) *Citation: 4*

17. J. A. Sobota, S. Yang, J. G. Analytis, **Y. L. Chen**, I. R. Fisher, P. S. Kirchmann, Z. X. Shen
"Ultrafast optical excitation of a persistent surface-state population in the Bi₂Se₃ topological insulator"
Physical Review Letter, **108**, 117403 (2012) *Citation: 23*

18. Desheng Kong⁺, **Yulin Chen**⁺, Judy J. Cha, Qianfan Zhang, James G. Analytis, Keji Lai, Zhongkai Liu, Seung Sae Hong, Kristie K. Koski, Sung-Kwan Mo, Zahid Hussain, Ian R. Fisher, Zhi-Xun Shen, and Yi Cui ⁺ These authors contributed equally to this work
"Ambipolar field effect in the ternary topological insulator (Bi_xSb_{1-x})₂Te₃ by composition tuning"
Nature Nanotechnology, **6**, 705 (2011) *Citation: 78*
19. C. Jozwiak, **Y. L. Chen**, A. V. Fedorov, J. G. Analytis, C. R. Rotundu, A. K. Schmid, J. D. Denlinger, Y.-D. Chuang, D.-H. Lee, I. R. Fisher, R. J. Birgeneau, Z.X. Shen, Z. Hussain, and A. Lanzara
"Widespread spin polarization effects in photoemission from topological insulators"
Physical Review B, **84**, 165113 (2011) *Citation: 25*
20. C. Brüne, C.X. Liu, E.G. Novik, E.M. Hankiewicz, H. Buhmann, **Y. L. Chen**, X.L. Qi, Z.X. Shen, S.C. Zhang, L.W. Molenkamp,
"Quantum Hall Effect from the Topological Surface States of Strained Bulk HgTe"
Physical Review Letter, **106**, 126803 (2011) *Citation: 87*
21. Desheng Kong, Judy Cha, Keji Lai, Hailin Peng, James G Analytis, Stefan Meister, **Yulin Chen**, Haijun Zhang, Ian R. Fisher, Zhi-Xun Shen, Yi Cui
"Rapid Surface Oxidation as a Source of Surface Degradation Factor for Bi₂Se₃"
ACS NANO **5**(6) 4698 (2011) *Citation: 50*
22. **Y. L. Chen**, Z. K. Liu, J. G. Analytis, J. H. Chu, H. J. zhang, B. H. Yan, S.-K. Mo, R.G. Moore, D. H. Lu, S. C. Zhang, I. R. Fisher, Z. Hussain and Z.-X. Shen
"Single Dirac Cone Topological Surface State and Unusual Thermoelectric Property of Compounds from a New Topological Insulator Family"
Physical Review Letter, **105**, 266401 (2010) *Citation: 80*
23. **Y. L. Chen**, J. H. Chu, J. G. Analytis, Z. K. Liu, K. Igarashi, H.-H. Kuo, X. L. Qi, S.-K. Mo, R.G. Moore, D. H. Lu, M. Hashimoto, T. Sasagawa, S. C. Zhang, I. R. Fisher, Z. Hussain and Z.-X. Shen
"Massive Dirac Fermion on the Surface of a magnetically doped Topological Insulator"
Science, **329**, 659 (2010) *Citation: 228*
24. James G. Analytis, Jiun-Haw Chu, **Yulin Chen**, Felipe Corredor, Ross D. McDonald, Z. X. Shen and Ian R. Fisher
"Bulk Fermi surface coexistence with Dirac surface state in Bi₂Se₃: a comparison of photoemission and Shubnikov-de Haas measurements"
Physical Review B, **81**, 205407 (2010) *Citation: 140*
25. Steve Johnston, Wei-Sheng Lee, **Yulin Chen**, E. A. Nowadnick, Brian Moritz, Z.-X. Shen, and Thomas Peter Devereaux
"Material and Doping Dependence of the Nodal and Antinodal Dispersion Renormalizations in Single- and Multilayer Cuprates"
Advances in Condensed Matter Physics, **2010**, 968304 (2010) *Citation: 10*

26. Desheng Kong, Jason C. Randel, Hailin Peng, Judy J. Cha, Stefan Meister, Keji Lai, **Yulin Chen**, Zhi-Xun Shen, Hari C. Manoharan, and Yi Cui
"Topological Insulator Nanowires and Nanoribbons"
Nano Letters, **10**, 329 (2010) *Citation: 83*

27. Zhanybek Alpichshev, J. G. Analytis, J. - H. Chu, I.R. Fisher, **Y. L. Chen**, Z.X. Shen, A. Fang, and A. Kapitulnik
"STM Imaging of electronic waves on the surface of Bi₂Te₃"
Physical Review Letter, **104**, 016401 (2010) *Citation: 173*

28. Hailin Peng, Keji Lai, Desheng Kong, Stefan Meister, **Yulin Chen**, Xiaoliang Qi, Shoucheng Zhang, Zhixun Shen and Yi Cui
"Aharonov-Bohm interference in topological insulator nanoribbons"
Nature Materials, **9**, 225 (2010) *Citation: 215*

29. Kenjiro K. Gomes, Wonhee Ko, Warren Mar, **Yulin Chen**, Zhi - Xun Shen, Hari C. Manoharan,
"Quantum Imaging of Topologically Unpaired Spin-Polarized Dirac Fermions"
Preprint: <http://arxiv.org/abs/0909.0921> *Citation: N/A*

30. **Yulin Chen**, Akira Iyo, Wanli Yang, Akihiro Ino, M. Arita, Hiroshi Eisaki, H. Namatame, M. Taniguchi, Zahid Hussain, and Z.-X. Shen,
"Unusual Layer-dependent Charge distribution, Collective Mode Coupling and Superconductivity in Multilayer Cuprate Ba₂Ca₃Cu₄O₈F₂"
Physical Review Letter, **103**, 036403 (2009) *Citation: 9*

31. **Y. L. Chen**, J. G. Analytis, J. H. Chu, Z. K. Liu, S.-K. Mo, X. L. Qi, H. J. Zhang, D.H. Lu, X. Dai, Z. Fang, S. C. Zhang, I. R. Fisher, Z. Hussain and Z.-X. Shen
"Experimental Realization of a Three Dimensional Topological Insulator, Bi₂Te₃"
Science, **325**, 178 (2009) *Citation: 800*

32. **Y. L. Chen**, W. S. Lee and Z.-X. Shen,
"A step closer to visualizing the electron-phonon interplay in real time"
Proceedings of the National Academy of Sciences, **106**, 963 (2009) *Citation: 1*

33. G. Lebedev, A. Tremsin, O. Siegmund, **Y. Chen**, Z.-X. Shen, and Z. Hussain
"Complete momentum and energy resolved TOF electron spectrometer for time-resolved photoemission spectroscopy"
Nuclear Instrument and Methods in Physics Research A, **582**, 168 (2007) *Citation: 5*

34. A.S. Tremsin, G.V. Lebedev, O.H.W. Siegmund, J.V. Vallerga, J.S. Hull, J.B. McPhate, C. Jozwiak, **Y. Chen**, J.H. Guo, Z. X. Shen, and Z. Hussain
"High spatial temporal resolution photon/electron counting detector for synchrotron radiation research"
Nuclear Instrument and Methods in Physics Research A , **580**, 853 (2007) *Citation: 9*

35. Wenhui Xie, O. Jepsen, O. K. Andersen, **Yulin Chen**, and Z.-X. Shen

- “Insights from angle-resolved photoemission spectroscopy of an undoped four-layered two-gap high-T_c superconductor”*
Physical Review Letter, 98, 047001 (2007) Citation: 13
36. W. Meevasana, X. J. Zhou, S. Sahrakorpi, W. S. Lee, W. L. Yang, K. Tanaka, N. Mannella, T. Yoshida, D. H. Lu, **Y.L. Chen**, R. H. He, Hsin Lin, S. Komiyama, Y. Ando, F. Zhou, W. X. Ti, J. W. Xiong, Z. X. Zhao, T. Sasagawa, T. Kakeshita, K. Fujita, S. Uchida, H. Eisaki, A. Fujimori, Z. Hussain, R. S. Markiewicz, A. Bansil, N. Nagaosa, J. Zaanen, T. P. Devereaux, and Z.-X. Shen, *“Hierarchy of multiple many-body interaction scales in high-temperature superconductors”*, *Physical Review B, 75, 174506 (2007) Citation: 77*
37. **Yulin Chen**, Akira Iyo, Wanli Yang, Xingjiang Zhou, Donghui Lu, Hiroshi Eisaki, Thomas P. Devereaux, Zahid Hussain, and Z.-X. Shen *“Anomalous Fermi-Surface Dependent Pairing in a Self-Doped High-T_c Superconductor”*, *Physical Review Letter, 97, 236401 (2006) Citation: 34*
38. Ci-hui Liu, Jun-jie Zhu, Bi-xia Lin, **Yu-Lin Chen**, Cong Peng, Zhen YANG, Zhu-xi Fu *“Deep Level of ZnO/p-Si Heterostructure and Its Influence on the Photoluminescence”* *Chinese Journal of Luminescence, 22, 218 (2001) Citation: N/A*
39. C.H. Liu, **Y. L. Chen**, B.X. Lin, J. J. Zhu, Z.X. Zhu, C Peng, Z Yang *“Electrical properties of the ZnO/Si heterostructure”* *Chinese Physics Letters, 18, 1108 (2001) Citation: 16*

Research Instruments developed

1. *“Laser excited, time- and spin-resolved Photoemission spectrometer”*
Laboratory for advanced material research, Stanford CA 94305
2. *“Femto-second ultra-bright ultra-violet(6.2eV) laser system”*
Laboratory for advanced material research, Stanford CA 94305
3. *“High throughput mini-Mott electron spin polarimeter”*
Advanced light source, Lawrence Berkeley National Laboratory, Berkeley, CA 94720
4. *“Micro computer controlled Sub-Nano Second High Voltage Pulse Generator”*
University of Science and Technology of China, Hefei, China
5. *“Toroidal Electron Energy Analyzer”*
University of Science and Technology of China, Hefei, China
6. *“Programmable Sub-Micro Second High Voltage Pulse Generator”*
University of Science and Technology of China, Hefei, China