

Donghui Lu

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Education and Training:

2000 – 2001 Research Associate, Laboratory for Advanced Materials, Stanford University
1997 – 2000 Post-doctoral Research, Laboratory for Advanced Materials, Stanford University
1991 – 1997 Ph.D. in Physics, joint program between Institute of Physics, Chinese Academy of Sciences, and Institute of Solid State Physics, Karlsruhe Research Center, Germany
1987 – 1991 B.S. in Physics, Nanjing University, Nanjing, P.R. China

Research and Professional Experience:

2007 – Present Senior Staff Scientist, Stanford Synchrotron Radiation Lightsource
2001 – 2007 Staff Scientist, Stanford Synchrotron Radiation Lightsource

Fellowships, Awards, Honors:

2019 APS Fellow
2005 Farrel W. Lytle Award, Stanford Synchrotron Radiation Laboratory
1994 – 1997 Scholarship for distinguished Ph.D. candidates, VW Foundation, Germany

Professional Memberships:

1998 – Present American Physical Society

Professional Service:

2024.08 NEXT-III IPR Review, DOE-BES
2022.10 NEXT-II IPR Review, DOE-BES
2020.11 ALS-U CD-2 Review, DOE-BES
2020.08 NEXT-II CD-1 Review, DOE-BES
2019.09 ALS-U CD-3A Review, DOE-BES
2017.05 NSLS-II Experimental Tools (NEXT) CD-4 Review, DOE-BES
2017.03 ALS Triennial Operational Review, DOE-BES
2016.08 NSLS-II Experimental Tools (NEXT) Independent Project Review, DOE-BES
2015.11 NSLS-II Experimental Tools (NEXT) Independent Project Review, DOE-BES

Research Interests:

- Study of strongly correlated electron systems with angle-resolved photoemission spectroscopy
- Development of ultrahigh resolution photoemission spectroscopy and related synchrotron radiation instrumentation

Selected publications:

1. Ke-Jun Xu, Junfeng He, Su-Di Chen, Yu He, Sebastien N. Abadi, Costel. R. Rotundu, Young S. Lee, Dong-Hui Lu, Qinda Guo, Oscar Tjernberg, Thomas P. Devereaux, Dung-Hai Lee, Makoto Hashimoto, and Zhi-Xun Shen
Anomalous normal state gap in an electron-doped cuprate
Science 385, 796 (2024).

2. Y.-F. Li, S.-D. Chen, M. Garcia-Diez, M. I. Iraola, H. Pfau, Y.-L. Zhu, Z.-Q. Mao, T. Chen, M. Yi, P.-C. Dai, J.A. Sobota, M. Hashimoto, M. G. Vergniory, D.-H. Lu, and Z.-X. Shen
Orbital Ingredients and Persistent Dirac Surface State for the Topological Band Structure in $\text{FeTe}_{0.55}\text{Se}_{0.45}$
Physical Review X 14, 021043 (2024).
3. Su-Di Chen, Makoto Hashimoto, Yu He, Dongjoon Song, Jun-Feng He, Ying-Fei Li, Shigeyuki Ishida, Hiroshi Eisaki, Jan Zaanen, Thomas P Devereaux, Dung-Hai Lee, Dong-Hui Lu, and Zhi-Xun Shen
Unconventional spectral signature of T_c in a pure d-wave superconductor
Nature 601, 562 (2022).
4. Z. Chen, Y. Wang, S. N. Rebec, T. Jia, M. Hashimoto, D. Lu, B. Moritz, R. G. Moore, T. P. Devereaux, and Z.-X. Shen
Anomalous Strong Near-Neighbor Attraction in Doped 1D Cuprate Chains
Science 373, 1235 (2021).
5. M. Yi, H. Pfau, Y. Zhang, Y. He, H. Wu, T. Chen, Z. R. Ye, M. Hashimoto, R. Yu, Q. Si, D.-H. Lee, P. Dai, Z.-X. Shen, D. H. Lu, R. J. Birgeneau
Nematic Energy Scale and the Missing Electron Pocket in FeSe
Phys. Rev. X 9, 041049 (2019).
6. Y. He, M. Hashimoto, D. Song, S.-D. Chen, J. He, I. M. Vishik, B. Moritz, D.-H. Lee, N. Nagaosa, J. Zaanen, T. P. Devereaux, Y. Yoshida, H. Eisaki, D. H. Lu, and Z.-X. Shen
Rapid change of superconductivity and electron-phonon coupling through critical doping in Bi2212
Science 362, 62 (2018).
7. Ming Yi, Yan Zhang, Zhi-Xun Shen, and Donghui Lu
Role of the orbital degree of freedom in iron-based superconductors
npj Quantum Materials 2, 57 (2017).
8. M. Yi, Z.-K. Liu, Y. Zhang, R. Yu, J. Zhu, J. J. Lee, R. G. Moore, F. Schmitt, W. Li, S. Riggs, J.-H. Chu, B. Lv, J. Hu, M. Hashimoto, S.-K. Mo, Z. Hussain, Z. Mao, C.-W. Chu, I. R. Fisher, Q. Si, Z.-X. Shen, D. H. Lu
Observation of universal strong orbital-dependent correlation effects in iron chalcogenides
Nature Communications 6, 7777 (2015).
9. J. J. Lee, F. T. Schmitt, R. G. Moore, S. Johnston, Y.-T. Cui, W. Li, M. Yi, Z. K. Liu, M. Hashimoto, Y. Zhang, D. H. Lu, T. P. Devereaux, D.-H. Lee, Z.-X. Shen
Interfacial mode coupling as the origin of the enhancement of T_c in FeSe films on SrTiO_3
Nature 515, 245 (2014).
10. D. H. Lu, M. Yi, S.-K. Mo, A. S. Erickson, J. Analytis, J.-H. Chu, D. J. Singh, Z. Hussain, T. H. Geballe, I. R. Fisher, and Z.-X. Shen
Electronic structure of the iron-based superconductor LaOFeP
Nature 455, 81 (2008).

Graduate and Postdoctoral Advisors:

Postdoctoral: Zhi-Xun Shen (Stanford University)

Ph.D.: Zhong-Xian Zhao (Institute of Physics, Chinese Academy of Science)