

SHUYUN ZHOU

Professor of Physics, Tsinghua University, Beijing, China

Email: syzhou@mail.tsinghua.edu.cn

<http://info.phys.tsinghua.edu.cn/zhou/>

EDUCATION:

Ph.D. Department of Physics, UC Berkeley, Berkeley, CA 94720, 2007/12

B.S. Department of Physics, Tsinghua University, Beijing, China, 2002/07

EXPERIENCE:

2017/01-now Professor, Department of Physics, Tsinghua University

2012/04-2016/12 Associate professor, Department of Physics, Tsinghua University

2011/05-2012/04 Project Scientist, Materials Sciences Division, Lawrence Berkeley National Lab

2008/01-2011/04 Postdoc, Materials Sciences Division & Advanced Light Source, Lawrence Berkeley National Lab

HONORS AND AWARDS:

2021 Huang Kun Prize in semiconductor physics

2019 Sir Martin Wood Prize for low temperature physics

2017 L'Oreal-UNESCO Award for Women in Science, China

2017 MRS Singapore ICON-2DMAT Young Scientist Award (YSA)

2013 Qiushi Outstanding Young Scholar Award

Service:

2021 - Program committee of Division of Condensed Matter Physics (DCMP), The association of Asia-Pacific Physical Societies (AAPPS)

2020 - Associate editor for Chinese Physics Letters

2018 - Member of Commission on Structure and Dynamics of Condensed Matter (C10), International Union of Pure and Applied Physics (IUPAP)

2018 - 2020 Associate editor for Science Bulletin

2016 - 2019 Editorial board for Journal of Semiconductors

Research:

Shuyun Zhou's research focuses on the electronic structure of novel two-dimensional materials and heterostructures using advanced electron spectroscopic tools, including angle-resolved photoemission spectroscopy (ARPES), Spin-resolved ARPES, Nano-ARPES and ultrafast time-resolved ARPES. She has made important progress on type-II topological semimetal and van der Waals heterostructures.

[Researcherid: A-5750-2009](#)

Selected publications:

1. Changhua Bao, Peizhe Tang*, Dong Sun* & Shuyun Zhou*, **Light-induced emerging phenomena in two-dimensional materials and topological materials**, *Nat. Rev. Phys.* (2021).
2. Hongyun Zhang, Changhua Bao, Michael Schuler, Shaohua Zhou, Laipeng Luo, Qian Li, Wei Yao, Zhong Wang, Thomas P. Devereaux & Shuyun Zhou*, **Self-energy dynamics and mode-specific phonon threshold effect in a Kekulé-ordered graphene**, *Natl. Sci. Rev. nwab17* (2021)
3. Changhua Bao*, Hongyun Zhang*, Teng Zhang, Xi Wu, Laipeng Luo, Shaohua Zhou, Qian Li, Yanhui Hou, Wei Yao, Liwei Liu, Pu Yu, Jia Li, Wenhui Duan, Hong Yao, Yeliang Wang and Shuyun Zhou, **Evidence of chiral symmetry breaking in Kekulé-ordered graphene**, *Phys. Rev. Lett.* 126, 206804 (2021).
4. Haoxiong Zhang, Awabakeli Rousuli, Shengchun Shen, Kenan Zhang, Chong Wang, Laipeng Luo, Jizhang Wang, Yang Wu, Yong Xu, Wenhui Duan, Hong Yao, Pu Yu* & Shuyun Zhou*,

- Enhancement of superconductivity in organic-inorganic hybrid topological materials, *Sci. Bull.* 65, 188 (2020).**
5. Wei Yao, Eryin Wang, Changhua Bao, Yiou Zhang, Kenan Zhang, Kejie Bao, Chun Kai Chan, Chaoyu Chen, Jose Avila, Maria C. Asensio, Junyi Zhu* and Shuyun Zhou*, **Quasicrystalline 30° twisted bilayer graphene as an incommensurate superlattice with strong interlayer coupling, *PNAS* 115, 6928 (2018).**
 6. Kenan Zhang, Xiaoyu Liu, Haoxiong Zhang, Ke Deng, Mingzhe Yan, Mingtian Zheng, Eike F. Schwier, Kenya Shimada, Jonathan Denlinger, Yang Wu, Wenhui Duan and Shuyun Zhou*, **Experimental evidence for charge density wave in the layered copper chalcogenide CuTe, *Phys. Rev. Lett.* 121, 206402 (2018).**
 7. Mingzhe Yan, Huaqing Huang, Kenan Zhang, Eryin Wang, Wei Yao, Ke Deng, Guoliang Wan, Hongyun Zhang, Masashi Arita, Haitao Yang, Zhe Sun, Hong Yao, Yang Wu*, Shoushan Fan, Wenhui Duan* and Shuyun Zhou*, **Lorentz-violating type-II Dirac fermions in transition metal dichalcogenide PtTe₂, *Nat. Commun.* 8, 257 (2017).**
 8. Wei Yao, Eryin Wang, Huaqing Huang, Ke Deng, Mingzhe Yan, Kenan Zhang, Koji Miyamoto, Taichi Okuda, Chaoxing Liu, Linfei Li, Yeliang Wang, Hongjun Gao, Chaoxing Liu, Wenhui Duan and Shuyun Zhou*, **Direct observation of spin-layer locking by local Rashba effect in monolayer semiconducting PtSe₂, *Nat. Commun.* 8, 14216 (2017).**
 9. Ke Deng⁺, Guoliang Wan⁺, Peng Deng⁺, Kenan Zhang, Shijie Ding, Eryin Wang, Mingzhe Yan, Huaqing Huang, Hongyun Zhang, Zhilin Xu, Jonathan Denlinger, Alexei Fedorov, Haitao Yang, Wenhui Duan, Hong Yao, Yang Wu*, Shoushan Fan, Haijun Zhang, Xi Chen* and Shuyun Zhou*, **Experimental observation of topological Fermi arcs in type-II Weyl semimetal MoTe₂, *Nat. Phys.* 12, 1105-1110 (2016).**
 10. Kenan Zhang, Changhua Bao, Qiangqiang Gu, Xiao Ren, Haoxiong Zhang, Ke Deng, Yang Wu*, Yuan Li, Ji Feng and Shuyun Zhou*, **Raman signatures of inversion symmetry breaking and structural phase transition in type-II Weyl semimetal MoTe₂, *Nat. Commun.* 7, 13552 (2016).**
 11. Eryin Wang⁺, Xiaobo Lu⁺, Shijie Ding, Wei Yao, Mingzhe Yan, Guoliang Wan, Ke Deng, Shuopei Wang, Guorui Chen, Liguang Ma, Jeil Jung, Alexei V. Fedorov, Yuanbo Zhang, Guangyu Zhang and Shuyun Zhou*, **Gaps induced by inversion symmetry breaking and second-generation Dirac cones in graphene/hexagonal boron nitride, *Nat. Phys.* 12, 1111-1115 (2016).**
 12. Eryin Wang, Hao Ding, Alexei V. Fedorov, Wei Yao, Zhi Li, Yan-Feng Lv, Kun Zhao, Li-Guo Zhang, Zhixun Xu, John Schneeloch, Ruidan Zhong, Shuai-Hua Ji, Lili Wang, Ke He, Xucun Ma, Genda Gu, Hong Yao, Qi-Kun Xue, Xi Chen* and Shuyun Zhou*, **Fully gapped topological surface states in Bi₂Se₃ films induced by a d-wave high-temperature superconductor, *Nat. Phys.* 9, 621-625 (2013).**
 13. S.Y. Zhou*, Y. Zhu, M.C. Langner, Y.-D. Chuang*, P. Yu, W.L. Yang, A.G. Cruz Gonzalez, M. Rini, N. Tahir, Y.-H. Chu, R. Ramesh, D.-H. Lee, Y. Tomioka, Y. Tokura, Z. Hussain and R.W. Schoenlein*, **Ferromagnetic Enhancement of CE-type Spin Ordering in (Pr, Ca)MnO₃, *Phys. Rev. Lett.* 106, 186404 (2011).**
 14. S.Y. Zhou, D.A. Siegel, A.V. Fedorov and A. Lanzara, **Metal to insulator transition in epitaxial graphene induced by molecular doping, *Phys. Rev. Lett.* 101, 086402 (2008).**
 15. S.Y. Zhou, G.-H. Gweon, A.V. Fedorov, P.N. First, W.A. de Heer, D.-H. Lee, F. Guinea, A.H. Castro Neto and A. Lanzara, **Substrate induced band gap opening in epitaxial graphene, *Nat. Mater.* 6, 770 (2007).**
 16. S.Y. Zhou, G.-H. Gweon, J. Graf, A.V. Fedorov, C.D. Spataru, R.D. Diehl, Y. Kopelevich, D.-H. Lee, S.G. Louie, A. Lanzara, **First direct observation of Dirac fermions in graphite, *Nat. Phys.* 2, 595 (2006).**