Curriculum Vitae

➢ Personal Information

- ✧ Name: Haijun Zhang (张海军)
- ✧ Gender: Male
- ✧ Date of Birth: April 28th ,1982
- ✧ Place of Birth: Heze city, Shandong province, China
- ✧ Home address: 350 Curtner Ave. #8, Palo Alto, CA, 94306, USA
- ✧ Work address:
  323 McCullough Building,
  476 Lomita Mall, Stanford University, Stanford, CA 94305
- ✧ Phone: (001)-650-862 7320 in US, (+86)-18701572924 in China
- ✧ E-mail: hjzhang0428@gmail.com; hjzhang@stanford.edu
- ✧ http://scholar.google.com/citations?hl=en&user=q74HlqIAAAAJ&view_op=list_works
  https://sites.google.com/site/haijunzhang0428/home

➢ Research interest:

My interest is to discover and understand all kinds of novel electronic structure in condensed matter physics, including superconductors, topological insulators, oxide compounds and diluted magnetic semiconductors, by first-principles calculations, tight-binding models and the kp method.

➢ Education

- ✧ Mar. 2010-now
  - Geballe Laboratory for Advanced Materials(GLAM)
  - Stanford University, Stanford, CA, 94305, USA
  - Title: Postdoctoral scholar
- ✧ Sep. 2004-Oct. 2009
  - Beijing National Laboratory for Condensed Matter Physics, and Institute of Physics(IOP), Chinese Academy of Sciences (CAS), Beijing, China
  - Master and Ph. D for condensed matter physics
- ✧ Sep. 2000-July 2004
  - Department of Physics, University of Science and Technology of China (USTC), Hefei, Anhui, China
  - Bachelor for condensed matter physics

➢ Awards

- ✧ Outstanding Science and Technology Team Achievement Award, Qiu Shi Science & Technologies Foundation, 2011
- ✧ Outstanding Achievement Award in Science and Technology, Chinese Academy of Sciences, 2011

- ✧ Institute Chief Award, Institute of Physics, Chinese Academy of Sciences, 2007 and 2006

➢ Invited talks

- ✧ The March Meeting 2013 of the American Physical Society
  March 18 to 22, 2013; Baltimore, Maryland, USA
- ✧ The international CECAM-Workshop "Topological Materials"
  Aug. 13 to 17, 2012; Bremen, Germany
- ✧ CECAM-HQ-EPFL "Topological Insulators and Non-Perturbative Spin-Orbit Coupling"
  Jan. 9 to 11, 2012; Lausanne, Switzerland

➢ Papers list (total 37 papers with 5619 citations)

✧ 2014

1. **Haijun Zhang,** Zhongkai Liu **et al.**
   "Induced helical surface states in inversion asymmetry compound BiTeCl"
   Submitted (2014)
2. **Haijun Zhang**, Yong Xu, Jing Wang and Shou-Cheng Zhang
   "Quantum Spin Hall and Quantum Anomalous Hall States Realized in Junction Quantum Wells"
   Phys. Rev. Lett. 112, 216803 (2014)
3. **Haijun Zhang,** Jing Wang, Gang Xu, Yong Xu and Shou-Cheng Zhang
   "Topological States in Ferromagnetic CdO/EuO Superlattices and Quantum Wells"
   Phys. Rev. Lett. *112, 096804* (2014)
4. Hongtao Yuan, Xinqiang Wang, Biao Lian, **Haijun Zhang,** et al.
   "Electric Control of Valley-Spin Current in Metal Dichalcogenide"
   Nature Nanotechnology (2014)--Accepted
5. Qingze Wang, Xin Liu, **Hai-Jun Zhang**, Shou-Cheng Zhang and Chao-Xing Liu
   "Quantum Anomalous Hall Effect in Magnetically Doped InAs/GaSb Quantum Wells"
   ArXiv:1311.4113(2013)---submitted

✧ 2013

1. **Haijun Zhang** and Chao-Xing Liu and Shou-Cheng Zhang
   "Spin-orbital Texture in Topological Insulators"
   Phys. Rev. Lett. *111, 066801 (2013)*
2. Jing Wang, Biao Lian**, Haijun Zhang**, Yong Xu and Shou-Cheng Zhang
   "Quantum Anomalous Hall Effect with Higher Plateaus"
   Phys. Rev. Lett. 111, 136801(2013)
3. Jing Wang, Biao Lian, **Haijun Zhang**, Shou-Cheng Zhang

"Anomalous Edge Transport in the Quantum Anomalous Hall state"
Phys. Rev. Lett. 111, 086803 (2013)

4. Yong Xu, Binghai Yan, **Haijun Zhang**, et. al.
"Large-gap Quantum Spin Hall insulators in Tin Films"
Phys. Rev. Lett. 111, 136804 (2013)
5. Y. L. Chen, M. Kanou, Z. K. Liu, **H. J. Zhang,** et al.
"Discovery of a single topological Dirac fermion in the strong inversion asymmetric compound BiTeCl"
Nature Physics 9, 704-708 (2013)

✧ 2012

1. **Haijun Zhang** and Shou-Cheng Zhang
"Topological insulators from the perspective of first-principles calculations"
Phys. Status Solidi RRL, *1–10 (2012)*
2. Xiao Zhang, **Haijun Zhang**, Jing Wang, Claudia Felser and Shou-Cheng Zhang
"Actinide Topological Insulator Materials with Strong Interaction"
Science *335, 1464 (2012)*
3. Lukas Muchler, **Haijun Zhang**, et al.
"Topological Insulators from a Chemist's Perspective"
Angew. Chem. Int. Ed. *51, 1 – 6 (2012)*

✧ 2011

1. **Hai-Jun Zhang**, Stanislav Chadov, Lukas Muchler et al
"Topological Insulators in Ternary Compounds with a Honeycomb Lattice"
Phys. Rev. Lett. *106, 156402(2011)*
2. **Haijun Zhang**, Xiao Zhang and Shou-Cheng Zhang
"Quantum Anomalous Hall Effect in Magnetic Topological Inuslator GdBiTe3"
arXiv: 1108.4857v1(2011)
3. Hongming Weng, Gang Xu, **Haijun Zhang** Shou-Cheng Zhang, et al.
"Half-metallic surface states and topological superconductivity in NaCoO2 from first principles"
Phys. Rev. B*, 84 060408(2011)*
4. Desheng Kong, Judy J. Cha, Keji Lai, Hailin Peng, James G. Analytis, Stefan Meister, Ylin Chen, **Hai-Jun Zhang**, et al.
"Rapid Surface Oxidation as a Source of Surface Degradation Factor for Bi2Se3"
ACS Nano 5 (6), pp 4698–4703 (2011)

✧ 2010

1. Binghai Yan, **Hai-Jun Zhang,** Chao-Xing Liu, et al.
"Theoretical prediction of topological insulator in ternary rare earth chalco-

genides"
Phys. Rev. B *82, 161108(R) (2010)*

2. Chao-Xing Liu, **Haijun Zhang**, Binghai Yan, Xiao-Liang Qi, Thomas Frauenheim, Xi Dai, Zhong Fang and Shou-Cheng Zhang
"Oscillatory crossover from two-dimensional to three-dimensional topological insulators"
Phys. Rev. B *81, 041307(R) (2010);* **Citation: 157**
3. Rui Yu, Wei Zhang, **Hai-Jun Zhang**, Shou-Cheng Zhang, Xi Dai, Zhong Fang
"Quantized Anomalous Hall Effect in Magnetic Topological Insulators"
Science *329, 61 (2010);* **Citation: 306**
4. Wei Zhang, Rui Yu, **Hai-Jun Zhang**, Xi Dai and Zhong Fang
"First-principles studies of the three-dimensional strong topological insulators Bi2Te3, Bi2Se3 and Sb2Te3"
New Journal of Physics *12, 065013(2010)*
5. Binghai Yan, Chao-Xing Liu, **Hai-Jun Zhang**, et al.
"Theoretical prediction of topological insulators in thallium-based III-V-VI2 ternary chalcogenides"
EPL *90(2010) 37002*
6. Chao-Xing Liu, Xiao-Liang Qi, **Haijun Zhang**, et al.
"Model Hamiltonian for topological insulators"
Phys. Rev. B *82, 045122(2010);* **Citation: 211**
7. Y.L. Chen, Z.K. Liu, J.G. Analytis, J.H. Chu, **H.J. Zhang**, et al.
"Single Dirac Cone Topological Surface state and Unusual Thermoelectric Property of Compounds from a New Topological Insulator Family"
Phys. Rev. Lett. *105, 266401 (2010)*
8. Yo-Yi Li, Guang Wang, Xie-Gang Zhu, Min-Hao Liu, Cun Ye, Xi Chen, Ya-Yu Wang, Ke He, Li-Li Wang, Xu-Cun Ma, **Hai-Jun Zhang** et al.
"Intrinsic Topological Insulator Bi2Te3 Thin Films on Si and Their Thickness Limit"
Adv. Mater. *22, 4002–4007(2010)*

✧ 2009

1. **Haijun Zhang**, Chao-Xing Liu, Xiao-Liang Qi, Xi Dai1, Zhong Fang, Shou-Cheng Zhang
"Topological Insulators in the Bi_2Se_3, Bi_2Te_3 and Sb_2Te_3 Material Systems**"**
Nature Physics **5**, 438 - 442 (2009); **Citation: 1545**
2. **Hai-Jun Zhang**, Chao-Xing Liu, Xiao-Liang Qi, Xiao-Yu Deng,Xi Dai, Shou-Cheng Zhang and Zhong Fang
"Electronic Structures and Surface States of Topological Insulator $Bi_{1-x}Sb_x$ **"**
Phys. Rev. B 80*, 085307 (2009);* **Citation: 44**
3. **ZHANG Hai-Jun,** XU Gang, DAI Xi, FANG Zhong
"Enhanced Orbital Degeneracy in Momentum Space for LaOFeAs"

CPL 26, 017401(2009)

4. Yi Liu, **Hai-Jun Zhang**, and Yugui Yao
   "Investigation of Magnetic Transport Properties by Wannier Interpolation"
   ***Phys. Rev. B 79**, 245123 (2009)*
5. 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
   "Large Gap Topological Insulator Bi_2Te_3 with a Single Dirac Cone on the Surface"
   ***Science** 325, 178-181, (2009);* **Citation: 1157**
6. Tong Zhang, Peng Cheng, Xi Chen, Jin-Feng Jia, Xucun Ma, He Ke, Lili Wang, **Haijun Zhang**, et al.
   "Experimental Demonstration of Topological Surface States Protected by Time-Reversal Symmetry"
   ***Phys. Rev. Lett.** 103, 266803 (2009)*

✧ 2008

1. J. Dong, **H. J. Zhang**, G. Xu, Z. Li, G. Li, W. Z. Hu, D. Wu, G. F. Chen, X. Dai, J. L. Luo, Z. Fang and N. L. Wang
   "Competing orders and spin-density-wave instability in $La(O_{1-x}F_x)FeAs$"
   ***EPL**, 83 27006(2008);* **Citation: 611**
2. Gang Xu, **Haijun Zhang**, Xi Dai and Zhong Fang
   "Electron-hole asymmetry and quantum critical point in hole-doped $BaFe_2As_2$"
   ***EPL**, 84 67015(2008);* **Citation: 50**