

Publication List

1. Frampton, D. Jones, P. van Nieuwenhuizen and S. C. Zhang, “The chiral anomaly in conformal and ordinary supergravity”, In *Quantum Field Theory and Quantum Statistics* (Festschrift for the sixtieth birthday of E. S. Fradkin).
2. M. Rocek, P. van Nieuwenhuizen and S. C. Zhang, “Supersymmetrization of the Chern-Simons term in five dimensional supergravity”, *Phys. Rev. D*33, 370, (1986).
3. M. Rocek, P. van Nieuwenhuizen and S. C. Zhang, “Superspace path integral measure of the $N = 1$ spinning string”, *Ann. Phys.* 172, 348 (1986).
4. S. C. Zhang, S. Kivelson and A. Goldhaber, “Charge versus fermion fractionalization in the quarter-filled Hubbard-Peierls model”, *Phys. Rev. Lett.* 58, 2134 (1987).
5. S. C. Zhang, “Quantum fluctuations of the superconducting cosmic string”, *Phys. Rev. Lett.* 59, 2111 (1987).
6. H. Hansson, M. Rocek, I. Zahed and S. C. Zhang, “Spin and statistics in massive $2 + 1$ dimensional QED”, *Phys. Lett.* B214, 475 (1988).
7. J. R. Schrieffer and X. G. Wen and S. C. Zhang, “Spin bag mechanism of high temperature superconductivity”, *Phys. Rev. Lett.* 60, 944 (1988).
8. S. C. Zhang, H. Hansson and S. Kivelson, “An effective field theory model for the fractional quantum Hall effect”, *Phys. Rev. Lett.* 62, 82 (1989).
9. J. R. Schrieffer, X. G. Wen and S. C. Zhang “The current theoretical situation in high T_c superconductivity”, *Physica C*153-155, 21 (1988).
10. J. R. Schrieffer, X. G. Wen and S. C. Zhang, “Local suppression of antiferromagnetism as the mechanism for the high T_c superconductivity”, *Proceedings of the Nobel symposium on the physics of low-dimensional systems*.
11. J. R. Schrieffer, X. G. Wen and S. C. Zhang, “The spin bag mechanism of high temperature superconductivity”, *Advances in Superconductivity*. (Springer Verlag, Tokyo), pp. 123-125.
12. J. R. Schrieffer, X. G. Wen and S. C. Zhang, “Spin bag and superconductivity”, *Proceedings of the Landau symposium in Nordita*.
13. J. R. Schrieffer, X. G. Wen and S. C. Zhang, “Spin bag and the high T_c superconductivity”, *Mod. Phys. Lett.* B2, 1 (1988).
14. S. C. Zhang, H. Hansson and S. Kivelson, “The Landau-Ginzburg theory for the fractional quantum Hall effect”, *Proceedings of the workshop on the field theory in condensed matter physics, Johns Hopkins, 1988*.
15. J. R. Schrieffer, X. G. Wen and S. C. Zhang, “Dynamic spin fluctuations and the bag mechanism of the high T_c superconductivity”, *Phys. Rev.* B39, 11663 (1989).

16. J. R. Schrieffer, X. G. Wen and S. C. Zhang, “Spin fluctuations, spin bags and the high T_c superconductivity”, *Physica C* 162, 300 (1989).
17. S. C. Zhang, “Gauge invariance and flux quantization in the system of anyons”, *Phys. Rev. B* 40, 5219 (1989).
18. S. C. Zhang and D. P. Arovas, “Hole motion in a $S = 1$ chain”, *Phys. Rev. B* 40, 2708 (1989).
19. S. C. Zhang, H. J. Schulz and T. Ziman, “Ground state energies of the nonlinear sigma model and the Heisenberg spin chains”, *Phys. Rev. Lett.* 63, 1110 (1989).
20. S. C. Zhang, “Constraints on s-wave pairing in the Hubbard model”, *Phys. Rev. B* 42, 1012 (1990).
21. S. C. Zhang, “Pseudospin symmetry and new collective modes in the Hubbard model”, *Phys. Rev. Lett.* 65, 120 (1990).
22. C. N. Yang and S. C. Zhang, “SO(4) symmetry in the Hubbard model”, *Mod. Phys. Lett. B* 4, 759 (1990).
23. S. C. Zhang, “SO(4) symmetry of the Hubbard model and its experimental consequences”, *Int. J. Mod. Phys. B* 5, 153 (1991).
24. D. H. Lee and S. C. Zhang, “Collective modes in the Landau-Ginzburg theory of the fractional quantum Hall effect”, *Phys. Rev. Lett.* 66, 1220 (1991).
25. C. Kane, S. Kivelson, D. H. Lee and S. C. Zhang, “Exactness of Jastrow-Laughlin wave functions”, *Phys. Rev. B* 43, 3255 (1991).
26. R. Scalettar, R. Singh and S. C. Zhang, “Odd parity singlet pairing in the positive U Hubbard model”, *Phys. Rev. Lett.* 67, 370 (1991).
27. D. H. Lee, S. Kivelson and S. C. Zhang, “Theory of the quantum Hall liquid to insulator transition”, *Phys. Rev. Lett.* 67, 3302 (1991).
28. Shou-Cheng Zhang, “The Chern-Simons-Landau-Ginzburg theory of the fractional quantum Hall effect”, *Int. J. Mod. Phys. B* 6, 25 (1992).
29. D. H. Lee, S. Kivelson and S. C. Zhang, “Quasi-particle charge and activated conductance of a quantum Hall liquid”, *Phys. Rev. Lett.* 68, 2386(1992).
30. S. Kivelson, D. H. Lee and S. C. Zhang, “Global phase diagram of the quantum Hall effect”, *Phys. Rev. B* 46, 2223 (1992).
31. D. Scalapino, S. White and S. C. Zhang, “Superfluid density and the Drude weight of the Hubbard model”, *Phys. Rev. Lett.* 68, 2830(1992).
32. S. C. Zhang, S. Kivelson and D. H. Lee, “Zero temperature Hall coefficient of an insulator”, *Phys. Rev. Lett.* 69, 1252(1992).

33. V. Kalmeyer and S. C. Zhang, “Metallic phase of the quantum Hall system at even denominator filling fractions”, *Phys. Rev. B* **46**, 9889 (1992).
34. D. Scalapino, S. White and S. C. Zhang, “Metal, insulator and superconductor: a criterion”, *Phys. Rev. B* **47**, 7995 (1993).
35. S. C. Zhang, “Vortex antivortex lattice in helium film”, *Phys. Rev. Lett.* **71**, 2142 (1993).
36. V. Kalmeyer, D. Wei, D. Arovas and S. C. Zhang, “Two dimensional localization in the presence of random flux and the quantum Hall system at even denominator filling fractions”, *Phys. Rev. B* **48**, 11095 (1993).
37. S. Feng and S. C. Zhang, “Little Parks and Aharonov-Bohm oscillations in fractional Hall regime: manifestation of the Chern-Simons gauge flux”, *Phys. Rev. Lett.* **71**, 3533 (1993).
38. S. C. Zhang, “Hall effect”, *Encyclopedia of Science and Technology*, published by McGraw-Hill Co.
39. S. C. Zhang and D.P. Arovas, “Effective field theory of electron motion in the presence of random magnetic flux”, *Phys. Rev. Lett.* **72**, 1886 (1994).
40. A. MacDonald and S. C. Zhang, “Collective excitations in the double layer quantum Hall systems”, *Phys. Rev. B.* **49**, 17208 (1994).
41. K. Yang, K. Moon, L. Zheng, A.H. MacDonald, S.M. Girvin, D. Yoshioka and S.C. Zhang, “Quantum ferromagnetism and phase transition in double layer quantum Hall system”, *Phys. Rev. Lett.* **72**, 732 (1994).
42. L. Pryadko and S. C. Zhang, “Fluctuation induced first order transition between the quantum Hall liquid and the insulator”, *Phys. Rev. Lett.* **73**, 3282 (1994).
43. K. Moon, H. Mori, K. Yang, S.M. Girvin, A.H. MacDonald, L. Zheng, D. Yoshioka and S.C. Zhang, “Spontaneous interlayer coherence in double layer quantum Hall systems”, *Phys. Rev. B.* **51**, 5138 (1995).
44. F. Mancoff, R. Clarke, C. Marcus and S. C. Zhang, “Magnetotransport of a two dimensional electron gas in a spatially random magnetic field”, *Phys. Rev. B.* **51**, 13269 (1995).
45. K. Chaltikian, L. Pryadko and S.C. Zhang, “Universal fluctuation of the Hall conductance in a random magnetic field”, *Phys. Rev. B.* **52**, R8688 (1995).
46. S. Kivelson, D.H. Lee and S. C. Zhang, “Electrons in Flatland”, *Scientific American, March*, (1996).
47. E. Demler and S. C. Zhang, “Theory of resonant neutron scattering of high T_c superconductors”, *Phys. Rev. Lett.* **75**, 4126 (1995).

48. E. Demler, S. C. Zhang, N. Bulut and D. Scalapino, “A class of collective excitations of the Hubbard model: η excitation of the negative U model”, Int. J. Mod. Phys. **B10**, 2137 (1996).
49. L. Pryadko and S. C. Zhang, “Duality and universality for the Chern-Simons bosons”, Phys. Rev. **B54**, 4953 (1996).
50. Shou-Cheng Zhang “A unified theory based on $SO(5)$ symmetry of superconductivity and antiferromagnetism”, Science **275**, 1089 (1997).
51. Shou-Cheng Zhang “The $SO(5)$ theory of high T_c superconductivity”, Physica **C282-287**, 265 (1997).
52. S. Meixner, W. Hanke, E. Demler and S.C. Zhang, “Finite-Size Studies on the $SO(5)$ Symmetry of the Hubbard Model”, preprint, cond-mat/9701217, Phys. Rev. Lett. **79**, 4902 (1997).
53. E. Demler and S.C. Zhang, “Reply to the comment on Is the π Particle Responsible for the 41 meV Peak in $YBa_2Cu_3O_7$?”, Phys. Rev. Lett. **79**, 4937 (1997).
54. Y. Bazaliy, E. Demler and S.C. Zhang, “Search for the π resonance in two particle tunneling experiments of $YBCO$ superconductors”, Phys. Rev. Lett. **79**, 1921 (1997).
55. D. Arovas, J. Berlinsky, C. Kallin and S.C. Zhang, “Superconducting vortex with antiferromagnetic core”, Phys. Rev. Lett. **79**, 2871 (1997).
56. S. Rabello, H. Kohno, E. Demler and S. C. Zhang, “Microscopic Electron Models with Exact $SO(5)$ Symmetry”, Phys. Rev. Lett. **80**, 3586 (1998).
57. Ya.B.Bazaliy, B.A.Jones and Shou-Cheng Zhang, “Modification of the Landau-Lifshitz Equation in the Presence of a Spin-Polarized Current in CMR and GMR Materials”, Phys. Rev. **B57**, R3213 (1998).
58. R. Eder, W. Hanke, and S.C. Zhang, “Numerical Evidence for $SO(5)$ Symmetry and Superspin Multiplets in the Two Dimensional $t - J$ Model”, Phys. Rev. **B57**, 13781 (1998).
59. Shou-Cheng Zhang, “Recent Developments in the $SO(5)$ Theory of High T_c Superconductivity”, J PHYS CHEM SOLIDS **59**, 1774 (1998).
60. Eugene Demler, Hiroshi Kohno and Shou-Cheng Zhang, “ π excitation of the $t - J$ model”, Phys. Rev. **B58**, 5719 (1998).
61. D. Scalapino, Shou-Cheng Zhang and W. Hanke, “ $SO(5)$ Symmetric Ladder”, Phys. Rev. **B58**, 443 (1998).
62. Eugene Demler and Shou-Cheng Zhang, “Quantitative test of a microscopic mechanism of high-temperature superconductivity”, Nature **396**, 733 (1998).

63. R. Eder, A. Dorneich, M. G. Zacher, W. Hanke and Shou-Cheng Zhang, “Dynamics of an $SO(5)$ symmetric ladder model”, Phys. Rev. **B59**, 561 (1999).
64. Eugene Demler and Shou-Cheng Zhang, “Non-Abelian Holonomy of BCS and SDW Quasi-particles”, Annals of Physics, **271**, 83 (1999).
65. Akira Furusaki and Shou-Cheng Zhang, “Dynamical spin correlations in Heisenberg ladder under magnetic field and correlation functions in $SO(5)$ ladder”, Phys. Rev. **B60**, 1175 (1999).
66. Shou-Cheng Zhang, “A Progress Report on the $SO(5)$ Theory of High T_c Superconductivity”, published in “Physics and Chemistry of Transition Metal Oxides”, edited by H. Fukuyama and Nagaosa. Springer Verlag, 1999.
67. Shou-Cheng Zhang, Jiang-Ping Hu, Enrico Arrigoni, Werner Hanke and Assa Auerbach, “Projected $SO(5)$ Models”, Phys. Rev. **B60**, 13070 (1999).
68. M. G. Zacher, A. Dorneich, R. Eder, W. Hanke and Shou-Cheng Zhang, “ $SO(5)$ symmetry and single particle spectra”, Int. J. of Mod. Phys. **B13**, 3039 (1999).
69. Shou-Cheng Zhang, “High T_c superconductivity: Symmetries and Reflections”, Int. J. of Mod. Phys. **B13**, 3855 (1999).
70. Marc G. Zacher, Werner Hanke, Enrico Arrigoni and Shou-Cheng Zhang, “Interrelation of Superconducting and Antiferromagnetic Gaps”, Phys. Rev. Lett. **85**, 824 (2000)
71. Jiang-Ping Hu and Shou-Cheng Zhang, “ $SO(5)$ superconductors in a Zeeman magnetic field”, Phys. Rev. **B62**, R791 (2000).
72. Jiang-Ping Hu and Shou-Cheng Zhang, “How to experimentally measure the number 5 of the $SO(5)$ theory?”, Physica **C341**, 93 (2000).
73. Ya.B.Bazaliy, B.A.Jones and Shou-Cheng Zhang, “Current Induced Magnetization Switching in Small Domains of Different Anisotropies”, cond-mat/0009034.
74. Jiangping Hu and Shou-Cheng Zhang, “Dispersion of the π resonance”, Phys. Rev. **B64**, R100502 (2001).
75. Ya.B.Bazaliy, B.A.Jones and Shou-Cheng Zhang, “Towards metallic magnetic memory: How to interpret experimental results on magnetic switching induced by spin-polarized currents”, J. Appl. Phys. **89**, 6793 (2001).
76. A. Dorneich, W. Hanke, E. Arrigoni, M. Troyer and Shou-Cheng Zhang, “Phase diagram and dynamics of the projected $SO(5)$ -symmetric model of high- T_c superconductivity”, Phys. Rev. Lett **88**, 057003-1 (2002).
77. Jiang-Ping Hu and Shou-Cheng Zhang, “Theory of Static and Dynamic Antiferromagnetic Vortices in LSCO Superconductors”, Journal of Physics and Chemistry of Solids, **63**, 2277, (2002).

78. Shou-Cheng Zhang and Jiang-Ping Hu, “A four dimensional generalization of the quantum Hall effect”, *Science* **294**, 823 (2001).
79. Jiang-Ping Hu and Shou-Cheng Zhang, “Collective excitations at the boundary of a 4D quantum Hall droplet”, *Phys. Rev. B* **66**, 125301 (2002).
80. Subir Sachdev and Shou-Cheng Zhang, “Tuning Order in Cuprate Superconductors”, *Science* **295**, 452 (2002).
81. Han-Dong Chen, Jiang-Ping Hu, Sylvain Capponi, Enrico Arrigoni and Shou-Cheng Zhang, “Antiferromagnetism and hole pair checkerboard in the vortex state of high Tc superconductors”, *Phys. Rev. Lett.* **89**, 137004 (2002).
82. B. Andrei Bernevig, Chyh-Hong Chern, Jiang-Ping Hu, Nicolaos Toumbas and Shou-Cheng Zhang, “Effective Field theory description of the higher dimensional quantum Hall liquid”, *Annals of Physics* **300**, 185 (2002).
83. Shou-Cheng Zhang, “Bob Schrieffer’s theoretical work on high Tc superconductivity”, Book Chapter in “Selected Papers of J Robert Schrieffer: In Celebration of His 70th Birthday”, World Scientific (2003).
84. M. Joestingmeier, A. Dorneich, E. Arrigoni, W. Hanke and Shou-Cheng Zhang, “Scaling properties of the projected SO(5) model in three dimensions”, *Phys. Rev. Lett.* **B628**, 245111 (2003).
85. Shou-Cheng Zhang, “To see a world in a grain of sand”, in “Science and Ultimate Reality”, edited by J. D. Barrow, P. Davies and C. Harper, as the Festschrift to the 90th birthday of John Wheeler, published by the Cambridge University Press 2004.
86. Shou-Cheng Zhang, “Exact microscopic wave function for a topological quantum membrane”, *Phys. Rev. Lett.* **90**, 19601 (2003).
87. H. J. Kang, Pengcheng Dai, J. W. Lynn, J. R. Thompson, Shou-Cheng Zhang, Y. Onose and Y. Tokura, “Magnetic order and superconductivity in electron doped $\text{Nd}_{1.85}\text{Ce}_{0.15}\text{CuO}_4$ ”, *Nature*, **423**, 522 (2003).
88. Congjun Wu, Han-dong Chen, Jiang-ping Hu, and Shou-Cheng Zhang, “Vortex configurations of bosons in an optical lattice”, *Phys. Rev.* **A69**, 043609 (2004).
89. Congjun Wu, Jiang-ping Hu, and Shou-Cheng Zhang, “Exact SO(5) Symmetry in spin 3/2 fermionic system”, *Phys. Rev. Lett.* **91**, 186402, (2003).
90. S. Murakami, N. Nagaosa and Shou-Cheng Zhang, “Dissipationless quantum spin current at room temperature”, *Science*, **301**, 1348 (2003).
91. E. Demler, W. Hanke and Shou-Cheng Zhang, “The SO(5) Theory of Antiferromagnetism and Superconductivity”, *Review of Modern Physics*, **76**, 909 (2004).
92. B.A. Bernevig, J.P. Hu, N. Toumbas and Shou-Cheng Zhang, “The Eight Dimensional Quantum Hall Effect and the Octonions”, *Phys. Rev. Lett.* **91**, 236803, (2003).

93. H. D. Chen, C. J. Wu and Shou-Cheng Zhang, “Quantitative Test of SO(5) Symmetry in the Vortex State of NdCeCuO₄”, Phys. Rev. Lett. **92**, 107002, (2004).
94. S. Murakami, N. Nagaosa and Shou-Cheng Zhang, “SU(2) Non-Abelian Holonomy and Dissipationless Spin Current in Semiconductors”, Physical Review B. **69**, 235206 (2004).
95. Chyh-Hong Chern, Han-Dong Chen, Congjun Wu, Jiang-Ping Hu and Shou-Cheng Zhang, “Non-abelian Berry phase and Chern numbers in higher spin pairing condensates”, Physical Review B. **69**, 214512, (2004).
96. Bogdan A. Bernevig, JianPing Hu, Eran Mukamel and Shou-Cheng Zhang, “Dissipationless Spin Current in Anisotropic p-Doped Semiconductors”, Physical Review B. **70**, 113301, (2004).
97. Congjun Wu and Shou-Cheng Zhang, “Dynamic generation of spin orbit coupling”, Phys. Rev. Lett. **93**, 036403, (2004).
98. Han-Dong Chen, Sylvain Capponi, Fabien Alet and Shou-Cheng Zhang, “Global Phase Diagram of the High T_c Cuprates”, Physical Review B. **70**, 024516, (2004).
99. Shou-Cheng Zhang, “Theory of High T_c Superconductivity”, Chapter contribution, Encyclopedia of Mathematical Physics.
100. Han-Dong Chen, Oskar Vafek, Ali Yazdani and Shou-Cheng Zhang, “Pair Density Wave in the Pseudogap State of High Temperature Superconductors”, Physical Review Letters **93**, 187002, (2004).
101. Andrei Bernevig and Shou-Cheng Zhang, “Holonomic Quantum Computing Based on the Stark Effect”, Physical Review **B71**, 035303, (2005).
102. Sylvain Capponi, Congjun Wu and Shou-Cheng Zhang, “Current Carrying Ground State in a Bi-layer Model”, Physical Review **B70**, 220505, (2004).
103. Shuichi Murakami, Naoto Nagaosa, Shou-Cheng Zhang, “Spin Hall Insulator”, Physical Review Letters, **93**, 156804, (2004).
104. Congjun Wu, Shou-Cheng Zhang, “Sufficient condition for absence of the sign problem in the fermionic quantum Monte Carlo algorithm”, Physical Review **B71**, 155115 (2005).
105. B. Andrei Bernevig, Shou-Cheng Zhang, “Spin Splitting and Spin Current in Strained Bulk Semiconductors”, Physical Review **B72**, 115204, (2005).
106. Seiki Komiya, Han-Dong Chen, Shou-Cheng Zhang, Yoichi Ando, “Magic Doping Fractions in High-Temperature Superconductors”, Physical Review Letters, **94**, 207004, (2005).
107. Z. F. Jiang, R. D. Li, Shou-Cheng Zhang and W. M. Liu, “Semiclassical Time Evolution of the Holes from Luttinger Hamiltonian”, Physical Review **B72**, 045201, (2005).

108. B. Andrei Bernevig, Xiaowei Yu and Shou-Cheng Zhang, “Maxwell Equation for the Coupled Spin-Charge Wave Propagation”, *Physical Review Letters*, **95**, 076602, (2005).
109. B. Andrei Bernevig and Shou-Cheng Zhang, “Intrinsic Spin Hall Effect in the Two Dimensional Hole Gas”, *Physical Review Letters*, **95**, 016801, (2005).
110. B. Andrei Bernevig, and Shou-Cheng Zhang, “Intrinsic Spin-Hall Effect in n-Doped Bulk GaAs”, *cond-mat/0412550*.
111. B. Andrei Bernevig, Taylor Hughes and Shou-Cheng Zhang, “Orbitronics: the Intrinsic Orbital Hall Effect in p-Doped Silicon”, *Physical Review Letters*, **95**, 066601, (2005).
112. Congjun Wu, Jan Zaanen and Shou-Cheng Zhang, “Spin-orbit coupling induced magnetism in the d-density wave phase of $\text{La}_{2-x}\text{Ba}_x\text{CuO}_4$ superconductors”, *Phys. Rev. Lett.* **95**, 247007, (2005)
113. Shu Chen, Congjun Wu, Shou-Cheng Zhang and Yupeng Wang, “Exact spontaneous plaquette ground states for high-spin ladder models”, *Phys. Rev.* **B72**, 214428, (2005)
114. B. Andrei Bernevig and Shou-Cheng Zhang, “Towards dissipationless spin transport in semiconductors”, *IBM Journal Research and Development*, **50**, 141, (2006).
115. B. Andrei Bernevig and Shou-Cheng Zhang, “Quantum Spin Hall Effect”, *Phys. Rev. Lett.* **96**, 106802, (2006).
116. Xiao-Liang Qi, Yong-Shi Wu and Shou-Cheng Zhang, “Topological Quantization of the Spin Hall Effect”, *Phys. Rev.* **B74**, 085308, (2006).
117. Congjun Wu, Andrei Bernevig and Shou-Cheng Zhang, “The Helical Liquid and the Edge of Quantum Spin Hall Systems”, *Phys. Rev. Lett.* **96**, 106401, (2006).
118. Congjun Wu, Jiangping Hu and Shou-Cheng Zhang, “Quintet pairing and non-Abelian vortex string in spin-3/2 cold atomic systems”, *Int. J. Mod. Phys.* **B24**, 311 (2010).
119. Xiao-Liang Qi, Yong-Shi Wu and Shou-Cheng Zhang, “A General Theorem Relating the Bulk Topological Number to Edge States in Two-dimensional Insulators”, *Phys. Rev.* **B74**, 045125, (2006).
120. B. Andrei Bernevig, J. Orenstein and Shou-Cheng Zhang, “An Exact $\text{SU}(2)$ Symmetry and Persistent Spin Helix in a Spin-Orbit Coupled System”, *Phys. Rev. Lett.* **97**, 236601, (2006).
121. Shi-Liang Zhu, Hao Fu, C.-J. Wu, S. -C. Zhang and L. -M. Duan, “Spin Hall effects for cold atoms in a light induced gauge potential”, *Phys. Rev. Lett.* **97**, 240401, (2006).
122. Yugui Yao, Fei Ye, Xiao-Liang Qi, Shou-Cheng Zhang, Zhong Fang, “Spin-orbit gap of graphene”, *Phys. Rev.* **B75**, 041401(R), (2007).

123. Andrei Bernevig, Taylor Hughes, Shou-Cheng Zhang, Handong Chen and Congjun Wu, “Band collapse and the quantum Hall effect in graphene”, *International Journal of Modern Physics* **B20**, 3257 (2006).
124. C.P. Weber, J. Orenstein, B. Andrei Bernevig, Shou-Cheng Zhang, Jason Stephens and D.D. Awschalom, “Non-diffusive spin dynamics in a two-dimensional electron gas”, *Phys. Rev. Lett.* **98**, 076604, (2007).
125. Baoli Liu, Junren Shi, Wenxin Wang, Hongming Zhao, Dafang Li, Shoucheng Zhang, Qikun Xue and Dongmin Chen, “Experimental Observation of the Inverse Spin Hall Effect at Room Temperature”, cond-mat/0610150.
126. Congjun Wu, Kai Sun, Eduardo Fradkin, Shou-Cheng Zhang, “Fermi liquid instabilities in the spin channel”, *Phys. Rev. B.* **75**, 115103, (2007).
127. B. Andrei Bernevig, Taylor L. Hughes and Shou-Cheng Zhang, “Quantum Spin Hall Effect and Topological Phase Transition in HgTe Quantum Wells”, *Science*, **314**, 1757, (2006).
128. Qin Liu, Tianxing Ma and Shou-Cheng Zhang, “Spin accumulation from the non-Abelian Aharonov-Bohm effect”, *Phys. Rev. B.* **76**, 233409, (2007).
129. E. Berg, E. Fradkin, E.-A. Kim, S. A. Kivelson, V. Oganesyan, J. M. Tranquada, and S. C. Zhang, “Dynamical layer decoupling in a stripe-ordered, high T_c superconductor”, *Phys. Rev. Lett.* **99**, 127003, (2007).
130. F. Krueger, S. D. Wilson, L. Shan, S. Li, Y. Huang, H.- H. Wen, S.-C. Zhang, Pengcheng Dai and J. Zaanen, “Magnetic fluctuations in n-type high- T_c superconductors reveal breakdown of fermiology”, *Phys. Rev. B.* **76**, 094506, (2007).
131. Xi Dai, Taylor L. Hughes, Xiao-Liang Qi, Zhong Fang and Shou-Cheng Zhang, “Helical edge and surface states in HgTe quantum wells and bulk insulators”, *Phys. Rev. B.* **77**, 125319, (2008).
132. Markus König, Steffen Wiedmann, Christoph Brüne, Andreas Roth, Hartmut Buhmann, Laurens W. Molenkamp, Xiao-Liang Qi and Shou-Cheng Zhang, “Quantum Spin Hall Insulator State in HgTe Quantum Wells”, *Science* **318**, 766, (2007).
133. Xiao-Liang Qi, Taylor L. Hughes and Shou-Cheng Zhang, “Fractional Charge and Quantized Current in the Quantum Spin Hall State”, *Nature Physics*, **4**, 273, (2008).
134. S. Raghu, Xiao-Liang Qi, C. Honerkamp and Shou-Cheng Zhang, “Topological Mott Insulators”, *Phys. Rev. Lett.* **100**, 156401, (2008).
135. Wen Yang, Kai Chang and Shou-Cheng Zhang, “Intrinsic Spin Hall Effect Induced by Quantum Phase Transition in HgCdTe Quantum Wells”, *Phys. Rev. Lett.* **100**, 056602, (2008).

136. Chaoxing Liu, Taylor L. Hughes, Xiao-Liang Qi, Kang Wang and Shou-Cheng Zhang, “Quantum Spin Hall Effect in Inverted Type II Semiconductors”, *Phys. Rev. Lett.* **100**, 236601 (2008).
137. Xiao-Liang Qi and Shou-Cheng Zhang, “Spin Charge Separation in the Quantum Spin Hall State”, *Phys. Rev. Lett.* **101**, 086802 (2008).
138. Chao-Xing Liu, Xiao-Liang Qi, Xi Dai, Zhong Fang and Shou-Cheng Zhang, “Quantum Anomalous Hall Effect in $\text{Hg}_{1-y}\text{Mn}_y\text{Te}$ Quantum Wells”, *Phys. Rev. Lett.* **101**, 146802 (2008).
139. Markus Koenig, Hartmut Buhmann, Laurens W. Molenkamp, Taylor L. Hughes, Chao-Xing Liu, Xiao-Liang Qi and Shou-Cheng Zhang, “The Quantum Spin Hall Effect: Theory and Experiment”, *Journal of the Physical Society of Japan*, **77**, 031007 (2008).
140. Xiao-Liang Qi, Taylor Hughes and Shou-Cheng Zhang, “Topological Field Theory of Time-Reversal Invariant Insulators”, *Phys. Rev. B.* **78**, 195424, (2008).
141. Gang Xu, Wenmei Ming, Yugui Yao, Xi Dai, Shouchen Zhang and Zhong Fang, “Doping-dependent Phase Diagram of LaOMAs ($M=\text{V-Cu}$) and Electron-type Superconductivity near Ferromagnetic Instability”, *Europhysics Letters* **82** 67002 (2008).
142. Shou-Cheng Zhang, “Topological States of Quantum Matter”, *Physics* **1**, 6 (2008).
143. Xiao-Liang Qi, Taylor L. Hughes, Srinivas Raghu and Shou-Cheng Zhang, “Time Reversal Invariant Topological Superconductors and Superfluids in Two and Three Dimensions”, *Phys. Rev. Lett.* **102**, 187001 (2009).
144. S. Raghu, Xiao-Liang Qi, Chao-Xing Liu, D. Scalapino and Shou-Cheng Zhang, “A minimal two-band model for the superconducting Fe-pnictides”, *Phys. Rev.* **B77**, 220503R (2008).
145. Xiao-Liang Qi, S. Raghu, Chao-Xing Liu, D. J. Scalapino and Shou-Cheng Zhang, “Pairing strengths for a two orbital model of the Fe-pnictides”, arXiv:0804.4332.
146. Qin Liu, Chao-Xing Liu, Cenke Xu, Xiao-Liang Qi, Shou-Cheng Zhang, “Magnetic impurities on the surface of a topological insulator”, *Phys. Rev. Lett.* **102**, 156603 (2009).
147. Atsuo Shitade, Hosho Katsura, Jan Kunes, Xiao-liang Qi, Shou-Cheng Zhang and Naoto Nagaosa, “Quantum Spin Hall Effect in a Transition Metal Oxide Na_2IrO_3 ”, *Phys. Rev. Lett.* **102**, 256403 (2009).
148. Wei-Cheng Lee, Shou-Cheng Zhang and Congjun Wu, “Time-reversal symmetry breaking pairing state in FeAs based superconductors”, *Phys. Rev. Lett.* **102**, 217002 (2009).
149. Xiao-Liang Qi, Rundong Li, Jiadong Zang and Shou-Cheng Zhang, “Inducing a Magnetic Monopole with Topological Surface States”, *Science* **323**, 1184 (2009).

150. Hong Yao, Shou-Cheng Zhang and Steven A. Kivelson, “Algebraic spin liquid in an exactly solvable spin model”, *Phys. Rev. Lett.* **102**, 217202 (2009).
151. Haijun Zhang, Chao-Xing Liu, Xiao-Liang Qi, Xi Dai, Zhong Fang and Shou-Cheng Zhang, “Topological insulators in Bi_2Se_3 , Bi_2Te_3 and Sb_2Te_3 with a single Dirac cone on the surface”, *Nature Physics*, **5**, 438 (2009).
152. Jake Koralek, Chris Weber, Joe Orenstein, Andrei Bernevig, Shou-Cheng Zhang, Shawn Mack, David Awschalom, “Emergence of the persistent spin helix in semiconductor quantum wells”, *Nature* **458**, 610 (2009).
153. Andreas Roth, Christoph Brüne, Hartmut Buhmann, Laurens. Molenkamp, Joseph Maciejko, Xiao-Liang Qi and Shou-Cheng Zhang, “Nonlocal transport in the quantum spin Hall state”, *Science* **325**, 294 (2009).
154. Daniel Arovas, Kazuki Hasebe, Xiao-Liang Qi and Shou-Cheng Zhang, “Supersymmetric valence bond solid states”, *Phys. Rev. B* **79**, 224404 (2009).
155. Joseph Maciejko, Chaoxing Liu, Yuval Oreg, Xiao-Liang Qi, Congjun Wu, and Shou-Cheng Zhang, “Kondo effect in the helical edge liquid of the quantum spin Hall state”, *Phys. Rev. Lett.* **102**, 256803 (2009).
156. 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 $\text{Bi}_{1-x}\text{Sb}_x$ ”, *Phys. Rev. B* **80**, 085307 (2009).
157. 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, Z.-X. Shen, “Experimental Realization of a Three-Dimensional Topological Insulator Bi_2Te_3 ”, *Science*, **325**, 178 (2009).
158. Xiao-Liang Qi and Shou-Cheng Zhang, “Field-induced gap and quantized charge pumping in a nanoscale helical wire”, *Phys. Rev.* **B79**, 235442, (2009).
159. Suk Bum Chung and Shou-Cheng Zhang, “Detecting the Majorana fermion surface state of $^3\text{He-B}$ through spin relaxation”, *Phys. Rev. Lett.* **103**, 235301 (2009).
160. Wei-Cheng Lee, Congjun Wu, Daniel P. Arovas and Shou-Cheng Zhang, “Quasiparticle Interference on the Surface of the Topological Insulator Bi_2Te_3 ”, *Phys. Rev.* **B80**, 245439, (2009).
161. Joseph Maciejko, Xiao-Liang Qi and Shou-Cheng Zhang, “Magnetoconductance of the quantum spin Hall state”, *Phys. Rev.* **B82**, 155310 (2010).
162. Rundong Li, Jing Wang, Xiaoliang Qi and Shou-Cheng Zhang, “Dynamical Axion Field in Topological Magnetic Insulators”, *Nature Physics* **6**, 284 (2010).
163. Hailin Peng, Keji Lai, Desheng Kong, Stefan Meister, Yulin Chen, Xiao-Liang Qi, Shou-Cheng Zhang, Zhi-Xun Shen and Yi Cui, “Aharonov-Bohm interference in topological insulator nanoribbons”, *Nature Materials*, **9**, 225 (2010).

164. Xiao-Liang Qi, Taylor L. Hughes and Shou-Cheng Zhang, “Topological invariants for the Fermi surface of a time-reversal-invariant superconductor”, Phys. Rev. **B81**, 134508, (2010).
165. 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. **B81**, 041307(R) (2010).
166. S. Raghu, Suk Bum Chung, Xiao-Liang Qi and Shou-Cheng Zhang, “Collective modes of a helical liquid”, Phys. Rev. Lett. **104**, 116401 (2010).
167. Zhong Wang, Xiao-Liang Qi and Shou-Cheng Zhang, “Equivalent topological invariants of topological insulators”, New Journal of Physics **12** 065007 (2010).
168. Yao-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, Xi Dai, Zhong Fang, Xin-Cheng Xie, Ying Liu, Xiao-Liang Qi, Jin-Feng Jia, Shou-Cheng Zhang and Qi-Kun Xue, “Intrinsic Topological Insulator Bi_2Te_3 Thin Films on Si and Their Thickness Limit”, Advanced Materials, **22**, 4002, (2010).
169. Yi Zhang, Ke He, Cui-Zu Chang, Can-Li Song, Lili Wang, Xi Chen, Jinfeng Jia, Zhong Fang, Xi Dai, Wen-Yu Shan, Shun-Qing Shen, Qian Niu, Xiaoliang Qi, Shou-Cheng Zhang, Xucun Ma and Qi-Kun Xue, “Crossover of Three-Dimensional Topological Insulator of Bi_2Se_3 to the Two-Dimensional Limit”, Nature Physics, **6**, 584, (2010).
170. Peng Cheng, Canli Song, Tong Zhang, Yanyi Zhang, Yilin Wang, Jin-Feng Jia, Jing Wang, Yayu Wang, Bang-Fen Zhu, Xi Chen, Xucun Ma, Ke He, Lili Wang, Xi Dai, Zhong Fang, X.C. Xie, Xiao-Liang Qi, Chao-Xing Liu, Shou-Cheng Zhang and Qi-Kun Xue, “Landau Quantization of Massless Dirac Fermions in Topological Insulator”, Phys. Rev. Lett. **105**, 076801, (2010).
171. Xiao-Liang Qi and Shou-Cheng Zhang, “The quantum spin Hall effect and topological insulators”, Physics Today, **63** 33, (2010).
172. Jiadong Zang, Hong-Chen Jiang, Zheng-Yu Weng and Shou-Cheng Zhang, “Topological Quantum Phase Transition in an $S = 2$ Spin Chain”, Phys. Rev. **B81**, 224430 (2010).
173. D. G. Rothe, R. W. Reinthaler, C.-X. Liu, L. W. Molenkamp, S.-C. Zhang and E. M. Hankiewicz, “Fingerprint of Different Spin-Orbit Terms for Spin Transport in HgTe Quantum Wells”, New Journal of Physics, **12** 065012 (2010).
174. Binghai Yan, Chao-Xing Liu, Hai-Jun Zhang, Chi-Yung Yam, Xiao-Liang Qi, Thomas Frauenheim, Shou-Cheng Zhang, “Theoretical Prediction of Topological Insulators in Thallium-based III-V-VI₂ Ternary Chalcogenides”, Europhysics Letters, **90** 37002 (2010).

175. S. Chadov, X.-L. Qi, J Kübler, G. H. Fecher, C. Felser, S.-C. Zhang, “Tunable Multifunctional Topological Insulators in Ternary Heusler Compounds”, *Nature Materials*, **9**, 541 (2010).
176. 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).
177. 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, I. R. Fisher, S. C. Zhang, Z. Hussain and Z.-X. Shen, “Single Dirac Cone Topological Surface State and Unusual Thermoelectric Property of Compounds from a New Topological Insulator Family”, *Phys. Rev. Lett.* **105**, 266401 (2010).
178. J. L. Zhang, S. J. Zhang, H. M. Weng, W. Zhang, L. X. Yang, Q. Q. Liu, S. M. Feng, X. C. Wang, R. C. Yu, L. Z. Cao, L. Wang, W. G. Yang, H. Z. Liu, W. Y. Zhao, S. C. Zhang, X. Dai, Z. Fang and C. Q. Jin, “Pressure-induced superconductivity in topological parent compound Bi_2Te_3 ”, *Proc. Nat. Acad. Sciences*, **108**, 24 (2011).
179. Xiao-Liang Qi, Taylor L. Hughes, Shou-Cheng Zhang, “Chiral Topological Superconductor From the Quantum Hall State”, *Phys. Rev.* **B82**, 184516 (2010).
180. Rui Yu, Wei Zhang, Hai-Jun Zhang, Shou-Cheng Zhang, Xi Dai and Zhong Fang, “Quantized Anomalous Hall Effect in Magnetic Topological Insulators”, *Science* **329**, 61 (2010).
181. Binghai Yan, Hai-Jun Zhang, Chao-Xing Liu, Xiao-Liang Qi, Thomas Frauenheim, Shou-Cheng Zhang, “Theoretical prediction of topological insulator in ternary rare earth chalcogenides”, *Phys. Rev.* **B82**, 161108R (2010).
182. Chao-Xing Liu, Xiao-Liang Qi, HaiJun Zhang, Xi Dai, Zhong Fang and Shou-Cheng Zhang, “Model Hamiltonian for topological insulators”, *Phys. Rev.* **B82**, 045122 (2010).
183. Joseph Maciejko, Xiao-Liang Qi, H. Dennis Drew and Shou-Cheng Zhang, “Topological quantization in units of the fine structure constant”, *Phys. Rev. Lett.* **105**, 166803 (2010).
184. Zhong Wang, Xiao-Liang Qi, Shou-Cheng Zhang, “Topological Order Parameters for Interacting Topological Insulators”, *Phys. Rev. Lett.* **105**, 256803 (2010).
185. Joseph Maciejko, Xiao-Liang Qi, Andreas Karch and Shou-Cheng Zhang, “Fractional Topological Insulators in Three Dimensions”, *Phys. Rev. Lett.* **105**, 246809 (2010).
186. Hong-Chen Jiang, Stephan Rachel, Zheng-Yu Weng, Shou-Cheng Zhang and Zhenghan Wang, “Critical theory of the topological quantum phase transition in a spin-2 chain”, *Phys. Rev.* **B82**, 220403(R) (2010).

187. Xiao-Liang Qi and Shou-Cheng Zhang, “Topological insulators and superconductors”, *Review of Modern Physics*, **83**, 1057 (2011).
188. B. Buttner, C. X. Liu, G. Tkachov, E. G. Novik, C. Brune, H. Buhmann, E. M. Hankiewicz, P. Recher, B. Trauzettel, S. C. Zhang and L.W. Molenkamp, “Single valley Dirac fermions in zero-gap HgTe quantum wells”, *NATURE PHYSICS* **7**, 418 (2011).
189. Suk Bum Chung, Xiao-Liang Qi, Joseph Maciejko, Shou-Cheng Zhang, “Conductance and noise signatures of Majorana backscattering”, *Phys. Rev.* **B83**, 100512(R) (2011).
190. Suk Bum Chung, Hai-Jun Zhang, Xiao-Liang Qi and Shou-Cheng Zhang, “Topological superconducting phase and Majorana fermions in half-metal/superconductor heterostructures”, *Phys. Rev.* **B84**, 060510(R) (2011).
191. Xiao Zhang, Jing Wang and Shou-Cheng Zhang, “Topological insulators for high performance terahertz to infrared applications”, *Phys. Rev.* **B82**, 245107 (2010).
192. C. Brune, 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”, *Phys. Rev. Lett.* **106**, 126803 (2011).
193. Jing Wang, Rundong Li, Shou-Cheng Zhang, Xiao-Liang Qi, “Topological Magnetic Insulators with Corundum Structure”, *Phys. Rev. Lett.* **106** 126403, (2011).
194. Hai-Jun Zhang, Stanislav Chadov, Lukas Muechler, Binghai Yan, Xiao-Liang Qi, Jürgen Kübler, Shou-Cheng Zhang and Claudia Felser, “Topological Insulators in Ternary Compounds with a Honeycomb Lattice”, *Phys. Rev. Lett.* **106** 156402, (2011).
195. Jia-Ji Zhu, Dao-Xin Yao, Shou-Cheng Zhang and Kai Chang, “Electrically controllable surface magnetism on the surface of topological insulator”, *Phys. Rev. Lett.* **106**, 097201 (2011).
196. Zhong Wang, Xiao-Liang Qi and Shou-Cheng Zhang, “Topological field theory and thermal responses of interacting topological superconductors”, *Phys. Rev.* **B84**, 014527 (2011).
197. Minhao Liu, Cui-Zu Chang, Zuocheng Zhang, Yi Zhang, Wei Ruan, Ke He, Li-li Wang, Xi Chen, Jin-Feng Jia, Shou-Cheng Zhang, Qi-Kun Xue, Xucun Ma and Yayu Wang, “Electron interaction-driven insulating ground state in Bi₂Se₃ topological insulators in the two dimensional limit”, *Phys. Rev.* **B83**, 165440 (2011).
198. Binghai Yan, Lukas Muchler, Xiao-Liang Qi, Shou-Cheng Zhang and Claudia Felser, “Topological insulators in filled skutterudites”, *PHYSICAL REVIEW B* **85**, 165125 (2012).
199. Hongming Weng, Gang Xu, Haijun Zhang, Shou-Cheng Zhang, Xi Dai and Zhong Fang, “Half-metallic Surface States and Topological Superconductivity in NaCoO₂”, *Phys. Rev.* **B84**, 060408(R) (2011).

200. Yuanpei Lan, Shaolong Wan and Shou-Cheng Zhang, “Generalized quantization condition in topological insulator”, *Phys. Rev.* **B83**, 205109 (2011).
201. Joseph Maciejko, Taylor Hughes and Shou-Cheng Zhang, “The Quantum Spin Hall Effect”, *Annu. Rev. Condens.Matter Phys.* **2** 31 (2011).
202. Mei-Xiao Wang, Canhua Liu, Jin-Peng Xu, Fang Yang, Lin Miao, Meng-Yu Yao, C. L. Gao, Chenyi Shen, Xucun Ma, X. Chen, Zhu-An Xu, Ying Liu, Shou-Cheng Zhang, Dong Qian, Jin-Feng Jia, Qi-Kun Xue, “The Coexistence of Superconductivity and Topological Order in the Bi₂Se₃ Thin Films”, *Science* **336**, 52 (2012).
203. Joseph Maciejko, Xiao-Liang Qi, Andreas Karch, Shou-Cheng Zhang, “Models of three-dimensional fractional topological insulators”, arXiv:1111.6816.
204. Xiao Zhang, Haijun Zhang, Claudia Felser, Shou-Cheng Zhang, “Actinide Topological Insulator Materials with Strong Interaction”, *Science* **335**, 1464 (2012).
205. Chao-Xing Liu, Xiao-Liang Qi, Shou-Cheng Zhang, “Half quantum spin Hall effect on the surface of weak topological insulators”, *Physica* **E44** 906, (2012).
206. Hai-Jun Zhang, Xiao Zhang, Shou-Cheng Zhang, “Quantum Anomalous Hall Effect in Magnetic Topological Insulator GdBiTe₃”, arXiv:1108.4857.
207. Cui-Zu Chang, Jin-Song Zhang, Min-Hao Liu, Zuo-Cheng Zhang, Xiao Feng, Kang Li, Li-Li Wang, Xi Chen, Xi Dai, Zhong Fang, Xiao-Liang Qi, Shou-Cheng Zhang, Yayu Wang, Ke He, Xu-Cun Ma, Qi-Kun Xue, “Carrier-independent ferromagnetism and giant anomalous Hall effect in magnetic topological insulator”, arXiv:1108.4754.
208. Christoph Brüne, Andreas Roth, Hartmut Buhmann, Ewelina M. Hankiewicz, Laurens W. Molenkamp, Joseph Maciejko, Xiao-Liang Qi, Shou-Cheng Zhang, “Spin polarization of the quantum spin Hall edge states”, *Nature Physics*, **8** 485 (2012).
209. Christian Platt, Ronny Thomale, Carsten Honerkamp, Shou-Cheng Zhang, Werner Hanke, “Mechanism for a Pairing State with Time-Reversal Symmetry Breaking in Iron-Based Superconductors”, *Phys. Rev.* **B86**, 020507 (2012).
210. Shou-Cheng Zhang, “Topological field theory and the discovery of topological materials”, *Physica Scripta* **T146**, 014022 (2012); *Proceedings of the Nobel Symposium on Graphene and Quantum Matter*.
211. Zhong Wang, Xiao-Liang Qi, Shou-Cheng Zhang, “Topological invariants for interacting topological insulators with inversion symmetry”, *Phys. Rev.* **B85**, 165126 (2012).
212. Jing Wang, Xi Chen, Bang-Fen Zhu, Shou-Cheng Zhang, “Topological p-n Junction”, *Phys. Rev.* **B85**, 235131 (2012).
213. Qin Liu, Xiao-Liang Qi, Shou-Cheng Zhang, “Stationary phase approximation approach to the quasiparticle interference on the surface of a strong topological insulator”, *Phys. Rev.* **B85**, 125314 (2012).

214. Shinsei Ryu and Shou-Cheng Zhang, “Interacting topological phases and modular invariance”, *Phys. Rev.* **B85**, 245132 (2012).
215. Zhong Wang and Shou-Cheng Zhang, “Simplified topological invariants for interacting insulators”, *Phys. Rev.* **X2**, 031008 (2012).
216. Zhang, J. L., Yu, X. H., Zhu, J., Kong, P. P., Feng, S. M., Liu, Q. Q., Yang, L. X., Wang, X. C., Cao, L. Z., Yang, W. G., Wang, L., Mao, H. K., Zhao, Y. S., Liu, H. Z., Dai, X., Fang, Z., Zhang, S. C. and Jin, C. Q., “The comprehensive phase evolution for Bi₂Te₃ topological compound as function of pressure”, *JOURNAL OF APPLIED PHYSICS*, **111**, 112630, (2012).
217. Xiao Zhang and Shou-Cheng Zhang, “Chiral interconnects based on topological insulators”, *MICRO- AND NANOTECHNOLOGY SENSORS, SYSTEMS, AND APPLICATIONS IV*, Proceedings of SPIE Vol: **8373** 837309-1, (2012).
218. Jan Carl Budich, Ronny Thomale, Gang Li, Manuel Laubach, Shou-Cheng Zhang, “Fluctuation-induced Topological Quantum Phase Transitions in Quantum Spin Hall and Quantum Anomalous Hall Insulators”, arXiv:1203.2928.
219. Xiao-Liang Qi, Edward Witten and Shou-Cheng Zhang, “Axion topological field theory of topological superconductors”, arXiv:1206.1407.
220. Zhong Wang and Shou-Cheng Zhang, “Correlated topological superconductors and topological phase transitions via Green’s function”, arXiv:1204.3149.
221. Binghai Yan and Shou-Cheng Zhang, “Topological materials”, *Report of Progress of Physics*, **75**, 096501, (2012).
222. Lukas Muchler, Haijun Zhang, Stanislav Chadov, Binghai Yan, Frederick Casper, Jurgen Kubler, Shou-Cheng Zhang and Claudia Felser, “Topological Insulators from a Chemist’s Perspective”, *Angewandte Chemie*, **51**, 7221, (2012).
223. Haijun Zhang and Shou-Cheng Zhang, “Topological insulators from the Perspective of first-principles calculations”, arXiv:1209.6446.
224. Yi Li, Shou-Cheng Zhang and Congjun Wu, “Topological insulators with SU(2) Landau levels”, arXiv:1208.1562.
225. Zhong Wang and Shou-Cheng Zhang, “Charge Density Waves and Axion Strings from Weyl Semimetals”, arXiv:1207.5234.
226. Haijun Zhang, Chao-Xing Liu and Shou-Cheng Zhang, “Spin-orbital Texture in Topological Insulators”, arXiv:1211.0762.