

Wei Han

International Center for Quantum Materials, Peking University, Beijing, China, 100871

Phone: 86-10-62745091, Email: weihan@pku.edu.cn

Group Web: <http://www.phy.pku.edu.cn/~LabSpin/home.html>

Professional Experiences

- **Assistant Professor** 2014.09 -- Present
International Center for Quantum Materials
Peking University, Beijing, China
Principle investigator: *Lab for Spintronics and Emergent Materials*
- **Postdoctoral Fellow** 2012.02 – 2014.09
IBM Almaden Research Center, San Jose, CA, USA
Advisor: Stuart S. P. Parkin

Education

- **Ph. D., Physics** 2006.09 – 2012.01
University of California, Riverside, Riverside, CA, USA
Dissertation: “*Spin Transport and Relaxation in Graphene and Germanium*”
Advisor: Roland K. Kawakami
- **B. S., Materials Physics** 2002.09 – 2006.07
University of Science and Technology of China, China

Research Interests

- Spintronics in low dimensional quantum materials
- Spin Hall effect and spin orbit torque
- Novel materials and interface states
- Molecular beam epitaxy

Awards and Honors

- 2016 IUPAP Young Scientist Prize in Magnetism (C9), 2016
- APS GMAG student dissertation award, American Physics Society, 2012
- Robert T. Poe Memorial Graduate Scholarship Award, UCR, 2012
- Chinese Government Award for Outstanding Students Abroad, Chinese government, 2012
- Chancellor’s & college dissertation fellowship UCR, 2011
- Leo Falicov student award, American Vacuum Society 56th national meeting, 2009

- Benjamin C. Shen memorial graduate scholarship award, UCR, 2009
- Dean's distinguished fellowship, UCR, 2006-2008
- Outstanding student scholarship, USTC, 2004, 2005
- Zhang Zongzhi Sci-Tec scholarship, USTC, 2003

Professional Activities

- Advisory editor member, Journal of Magnetism and Magnetic Materials, 2019-2021
- Symposium organizer for APS March meeting symposiums, 2014, 2016, 2018.
- Program committee for the InterMag 2018.
- Scientific committee for the Symposium: "*Spintronics in semiconductors, 2D Materials and topological insulators*", Fall meeting of the European Materials Research Society, 2017, 2018.
- Manuscript referee for *Nature Materials*, *Nature Nanotechnology*, *Physics Review Letters*, *Physics Review X*, *Nano Letters*, *Physics Review B*, *Reports on Progress in Physics*, etc.

Selected publications

- [1] W. Xing, L. Qiu, X. Wang, Y. Yao, Y. Ma, R. Cai, S. Jia, X. C. Xie, and **W. Han***, "*Magnon transport in quasi-two-dimensional van der Waals antiferromagnets*", **Phys. Rev. X** 9, 011026 (2019).
- [2] H. Zhang[†], Y. Yun[†], X. Zhang[†], H. Zhang, Y. Ma, X. Yan, F. Wang, G. Li, R. Li, T. Khan, Y. Chen, W. Liu, F. Hu, B. Liu, B. Shen, **W. Han***, and J. Sun*, "*High-Mobility Spin-Polarized Two-Dimensional Electron Gases at EuO/KTaO₃ Interfaces*", **Physical Review Letters** 121, 116803 (2018).
- [3] **W. Han***, Y. Otani, and S. Maekawa, "*Quantum Materials for Spin and Charge Conversion*", **npj Quantum Materials**, 3, 27 (2018).
- [4] W. Yuan, Q. Zhu, T. Su, Y. Yao, W. Xing, Y. Chen, Y. Ma, X. Lin, J. Shi*, R. Shindou, X. C. Xie*, and **W. Han***, "*Experimental Signatures of Spin Superfluid Ground State in Canted Antiferromagnet Cr₂O₃ via Nonlocal Spin Transport*", **Science Advances**, 4, eaat1098, (2018).
- [5] W. Xing[†], Y. Chen[†], P. M. Odenthal, X. Zhang, W. Yuan, T. Su, Q. Song, T. Wang, J. Zhong, S. Jia, X. C. Xie, Y. Li, and **W. Han***, "*Electric field effect in multilayer Cr₂Ge₂Te₆: a ferromagnetic 2D material*", **2D Materials** 4, 024009 (2017).
- [6] Q. Song[†], H. Zhang[†], T. Su, W. Yuan, Y. Chen, W. Xing, J. Shi*, J. R. Sun*, and **W. Han***, "*Observation of Inverse Edelstein Effect in Rashba-Split 2DEG between SrTiO₃ and LaAlO₃ at Room Temperature*", **Science Advances** 3, e1602312 (2017).
- [7] Q. Song, J. Mi, D. Zhao, T. Su, W. Yuan, W. Xing, Y. Chen, T. Wang, T. Wu, X. H. Chen,

- X. C. Xie, C. Zhang*, J. Shi*, and **W. Han***, “*Spin Injection and Inverse Edelstein Effect in the Surface States of Topological Kondo Insulator SmB_6* ”, **Nature Communications** 7:13485 (2016).
- [8] W. Zhang[†], **W. Han[†]** (Co-1st), S.-H. Yang, Y. Sun, Y. Zhang, B. Yan, and S. S. P. Parkin*, “*Giant facet-dependent spin-orbit torque and spin Hall conductivity in the triangular antiferromagnet IrMn_3* ”, **Science Advances**, 2, e1600759 (2016).
- [9] W. Zhang[†], **W. Han[†]** (Co-1st), X. Jiang, S-H. Yang, and S. S. P. Parkin*, “*Role of transparency of platinum–ferromagnet interfaces in determining the intrinsic magnitude of the spin Hall effect*”, **Nature Physics**, 11, 496–502 (2015).
- [10] **W. Han**, R. K. Kawakami*, M. Gmitra, and J. Fabian*, “*Graphene spintronics*”, **Nature Nanotechnology** 9, 794-807 (2014).
- [11] **W. Han**, R. K. Kawakami*, “*Spin Relaxation in Single Layer and Bilayer Graphene*”, **Physical Review Letters** 107, 047207 (2011).
- [12] **W. Han**, K. Pi, K. M. McCreary, Y. Li, J. J. I. Wong, A. G. Swartz, and R. K. Kawakami*, “*Tunneling Spin Injection into Single Layer Graphene*”, **Physical Review Letters** 105, 167202 (2010).

Other Publications

- [13] H. Zhang[†], Y. Ma[†], X. Zhang[†], X. Chen, S. Wang, G. Li, Y. Yun, X. Yan, Y. Chen, F. Hu, B. Liu, J. Cai, B. Shen, **W. Han**, and J. Sun*, “*Thermal spin injection and inverse Edelstein effect of the 2DEG at EuO/KTaO_3 interfaces*”, **Nano Letters** In Press (2019).
- [14] Y. Yao, Q. Song, Y. Takamura, J. P. Cascales, W. Yuan, Y. Ma, Y. Yun, X. C. Xie, J. S. Moodera, and **W. Han***, “*Probe of Spin Dynamics in Superconducting NbN Thin Films via Spin Pumping*”, **Physical Review B** 97, 224414 (2018).
- [15] C. Tang[†], Q. Song[†], C.-Z. Chang, Y. Xu, Y. Ohnuma, M. Matsuo, Y. Liu, W. Yuan, Y. Yao, J. S. Moodera, S. Maekawa, **W. Han** and J. Shi*, “*Dirac surface state–modulated spin dynamics in a ferrimagnetic insulator at room temperature*”, **Science Advances** 4:eaas8660 (2018).
- [16] Z. Lin, M. Lohmann, Z. A. Ali, C. Tang, J. Li, W. Xing, J. Zhong, S. Jia, **W. Han**, S. Coh, W. Beyermann, and J. Shi*, “*Pressure-induced spin reorientation transition in layered ferromagnetic insulator $\text{Cr}_2\text{Ge}_2\text{Te}_6$* ”, **Physical Review Materials** 2, 051004 (2018).
- [17] Y. Yun[†], Y. Ma[†], T. Su, W. Xing, Y. Chen, Y. Yao, R. Cai, W. Yuan, and **W. Han***, “*Role of La doping for topological Hall effect in epitaxial EuO films*”. **Physical Review Materials** 2, 034201 (2018).
- [18] Y. Chen[†], W. Xing[†], X. Wang[†], B. Shen, W. Yuan, T. Su, Y. Ma, Y. Yao, J. Zhong, Y. Yun, X. C. Xie, S. Jia*, and **W. Han***, “*Role of Oxygen in Ionic Liquid Gating on*

- Two-Dimensional Cr₂Ge₂Te₆: A Non-oxide Material*", **ACS Applied Materials and Interfaces** 10, 1383 (2018).
- [19] Y. Yun[†], Y. Ma[†], S. Tao, W. Xing, Y. Chen, T. Su, W. Yuan, J. Wei, X. Lin, Q. Niu, X. C. Xie, and **W. Han***, "*Observation of long phase-coherence length in epitaxial La-doped CdO thin films*", **Physical Review B** 96, 245310 (2017).
- [20] P. Xu, **W. Han**, P. M. Rice, J. Jeong, M. G. Samant, K. Mohseni, H. L. Meyerheim, S. Ostanin, I. V. Maznichenko, I. Mertig, E. K. U. Gross, A. Ernst, and S. S. P. Parkin*, "*Reversible formation of two-dimensional electron gas at the LaFeO₃/SrTiO₃ interface via control of oxygen vacancies*", **Advanced Materials** 1604447 (2017).
- [21] W. Yuan, T. Wang, T. Su, Q. Song, W. Xing, Y. Chen, and **W. Han***, "*Positive Exchange Bias between Permalloy and Twined (11-10)-Cr₂O₃ Films*", **Journal of Magnetism and Magnetic Materials** 422, 397-401 (2017).
- [22] W. Yuan, T. Su, Q. Song, W. Xing, Y. Chen, T. Wang, Z. Zhang, X. Ma, P. Gao, J. Shi*, and **W. Han***, "*Crystal Structure Manipulation of the Exchange Bias in an Antiferromagnetic Film*", **Scientific Reports** 6, 28397 (2016).
- [23] Y. Zhao, Q. Song, S.-H. Yang, T. Su, W. Yuan, S. S. P. Parkin, J. Shi*, and **W. Han***, "*Experimental Investigation of Temperature-Dependent Gilbert Damping in Permalloy Thin Films*" **Scientific Reports**, 6, 22890 (2016).
- [24] **W. Han***, "*Perspectives for Spintronics in 2D Materials*", **APL Materials**, 4, 032401 (2016).
- [25] K.-U. Demasius, T. Phung, W. Zhang, B. P. Hughes, S.-H. Yang, A. Kellock, **W. Han**, A. Pushp, and S. S. P. Parkin*, "*Enhanced spin-orbit torques by oxygen incorporation in tungsten films*", **Nature Communications** 7:10644 (2016).
- [26] X. Zhang, Y. Zhao, Q. Song, S. Jia, J. Shi*, and **W. Han***, "*Magnetic anisotropy of the single crystalline ferromagnetic insulator Cr₂Ge₂Te₆*", **Japanese Journal of Applied Physics** 55, 033001 (2016).
- [27] W. Yuan, Y. Zhao, C. Tang, T. Su, Q. Song, J. Shi*, and **W. Han***, "*Epitaxial growth and properties of La_{0.7}Sr_{0.3}MnO₃ thin films with micrometer wide atomic terraces*", **Applied Physics Letters** 107, 022404 (2015).
- [28] D. Sun, T. P. Basel, B. R. Gautam, **W. Han**, X. Jiang, S. S. P. Parkin, and Z. V. Vardeny*, "*Giant magneto-electroluminescence from hybrid spin-organic spin organic light emitting diodes*", **Spin** 04, 1450002 (2014).
- [29] A. G Swartz, K. M. McCreary, **W. Han**, H. Wen, and R. K Kawakami*, "*A systematic approach to interpreting Hanle spin precession data in non-local spin valves*", **Proc. SPIE** Vol. 8813, 881328, (2013).
- [30] D. Sun, T. Basel, B. Gautam, **W. Han**, X. Jiang, S. S. P. Parkin, and Z. V. Vardeny*,

- “Room-temperature magnetically modulated electroluminescence from hybrid organic/inorganic spintronics devices”*, **Applied Physics Letters** 103, 042411 (2013).
- [31] M. Li, **W. Han**, X. Jiang, J. Jeong, M. G. Samant, and S. S. P. Parkin*, *“Suppression of ionic liquid gate induced metallization of SrTiO₃(001) by oxygen”*, **Nano Letters** 13, pp 4675–4678 (2013).
- [32] **W. Han**, X. Jiang, A. Kajdos, S.-H. Yang, S. Stemmer, and S. S. P. Parkin*, *“Spin injection and detection in lanthanum- and niobium-doped SrTiO₃ using the Hanle technique”*, **Nature Communications** 4:2134 (2013).
- [33] A. G. Swartz, K. M. McCreary, **W. Han**, J. J. I. Wong, P. M. Odenthal, H. Wen, J.-R. Chen, R. K. Kawakami*, Y. Hao, R. S. Ruoff, and J. Fabian, *“Integrating MBE materials with graphene to induce novel spin-based phenomena”*, **Journal of Vacuum Science and Technology B** 31, 04D105 (2013).
- [34] A. G. Swartz, J.-R. Chen, K. M. McCreary, P. M. Odenthal, **W. Han**, and R. K. Kawakami*, *“Effect of in situ deposition of Mg adatoms on spin relaxation in graphene”*, **Physical Review B** 87, 075455 (2013).
- [35] L. T. Chang, **W. Han**, Y. Zhou, J. Tang, I. A. Fischer, M. Oehme, J. Schulze, R. K. Kawakami, and K. L. Wang*, *“Comparison of Spin Lifetimes in n-Ge Characterized between Three-Terminal and Four-Terminal Nonlocal Hanle Measurements”*, **Semiconductor Science and Technology** 28, 015018 (2013).
- [36] K. M. McCreary, A. G. Swartz, **W. Han**, J. Fabian, R. K. Kawakami*, *“Direct Detection of Magnetic Moment Formation in Graphene”*, **Physical Review Letters** 109, 186604 (2012).
- [37] J. J. I. Wong, A. G. Swartz, R. Zheng, **W. Han**, and R. K. Kawakami*, *“Electric Field Control of the Verwey Transition and Induced Magnetoelectric Effect in Magnetite”*, **Physical Review B** 86, 060409(R) (2012).
- [38] **W. Han**, J.-R. Chen, D. Wang, K. M. McCreary, H. Wen, A. G. Swartz, J. Shi, and R. K. Kawakami*, *“Spin Relaxation in Single Layer Graphene with Tunable Mobility”*, **Nano Letters** 12, 3443–3447 (2012).
- [39] **W. Han**, K. M. McCreary, K. Pi, W. H. Wang, Yan Li, H. Wen, J. R. Chen, R. K. Kawakami*, *“Spin Transport and Relaxation in Graphene”*, **Journal of Magnetism and Magnetic Materials** 324, 369 (2012).
- [40] **W. Han**, J. R. Chen, K. M. McCreary, H. Wen, R. K. Kawakami*, *“Enhanced spin injection efficiency and extended spin lifetimes in graphene spin valves”*, **Proceedings of SPIE** Vol. 8100, 81000Q, (2011).
- [41] Y. Zhou[†], **W. Han**[†] (Co-1st), L.-T. Chang, F. Xiu, M. Wang, M. Oehme, I. A. Fischer, J. Schulze, R. K. Kawakami, and K. L. Wang*, *“Electrical spin injection and transport in Germanium”*, **Physical Review B** 84, 125323 (2011).

- [42] Y. Li, **W. Han**, A. G. Swartz, K. Pi, J. J. I. Wong, S. Mack, D. D. Awschalom, and R. K. Kawakami*, "*Oscillatory spin polarization and magneto-optical Kerr effect in Fe_3O_4 thin films on GaAs(001)*", **Physical Review Letters** 105, 167203 (2010).
- [43] A. G. Swartz, J. Ciraldo, J. J. I. Wong, Y. Li, **W. Han**, T. Lin, S. Mack, J. Shi, D. D. Awschalom, and R. K. Kawakami*, "*Epitaxial EuO thin films on GaAs*", **Physical Review Letters** 97, 112509 (2010).
- [44] K. Pi, **W. Han**, K. M. McCreary, A. G. Swartz, Y. Li, and R. K. Kawakami*, "*Manipulation of Spin Transport in Graphene by Surface Chemical Doping*", **Physical Review Letters** 104, 187201 (2010).
- [45] F. Xiu, Y. Wang, J. Kim, P. Upadhyaya, Y. Zhou, X. Kou, **W. Han**, R. K. Kawakami, J. Zou, and K. L. Wang*, "*Room-Temperature Electric-Field Controlled Ferromagnetism in $Mn_{0.05}Ge_{0.95}$ Quantum Dots*", **ACS Nano**, 4 (8), pp 4948–4954 (2010).
- [46] K. M. McCreary, K. Pi, A. G. Swartz, **W. Han**, W. Bao, C. N. Lau, F. Guinea, M. I. Katsnelson, and R. K. Kawakami*, "*Effect of cluster formation on graphene mobility*", **Physical Review B** 81, 115453 (2010).
- [47] J. J. I. Wong, L. Ramirez, A. G. Swartz, A. Hoff, **W. Han**, Y. Li, and R. K. Kawakami*, "*Tailoring interlayer exchange coupling of ferromagnetic films across MgO with Fe nanoclusters*", **Physical Review B** 81, 094406 (2010).
- [48] Y. Zhou[†], **W. Han**[†] (Co-1st), Y. Wang, F. Xiu, J. Zou, R. K. Kawakami, and K. L. Wang*, "*Investigating the origin of Fermi level pinning in Ge Schottky junctions using epitaxially grown ultrathin MgO films*", **Applied Physics Letters** 96, 102103 (2010).
- [49] **W. Han**[†], Y. Zhou[†] (Co-1st), Y. Wang, Y. Li, J. J. I. Wong, K. Pi, A. G. Swartz, K. M. McCreary, F. Xiu, K. L. Wang, J. Zou, and R. K. Kawakami*, "*Growth of single-crystalline, atomically smooth MgO films on Ge(001) by molecular beam epitaxy*", **Journal of Crystal Growth**, 312, 44 (2010).
- [50] **W. Han**, K. Pi, W. H. Wang, K. M. McCreary, Y. Li, W. Bao, P. Wei, J. Shi, C. N. Lau, and R. K. Kawakami*, "*Spin transport in graphite and graphene spin valves*", **Proceedings of SPIE**, Vol. 7398, 739819 (2009).
- [51] K. Pi, K. M. McCreary, W. Bao, **W. Han**, Y. F. Chiang, Yan Li, S.-W. Tsai, C. N. Lau, and R. K. Kawakami*, "*Electronic doping and scattering by transition metals on graphene*," **Physical Review B** 80, 075406 (2009).
- [52] Y. Zhou, M. Ogawa, M. Bao, **W. Han**, R. K. Kawakami, and K. L. Wang*, "*Engineering of tunnel junctions for prospective spin injection in germanium*", **Applied Physics Letters** 94, 242104 (2009).
- [53] **W. Han**, K. Pi, W. Bao, K. M. McCreary, Yan Li, W. H. Wang, C. N. Lau, and R. K. Kawakami*, "*Electrical detection of spin precession in single layer graphene spin valves with transparent contacts*", **Applied Physics Letters** 94, 222109 (2009).

- [54] **W. Han**, W. H. Wang, K. Pi, K. M. McCreary, W. Bao, Yan Li, F. Miao, C. N. Lau, and R. K. Kawakami*, "*Electron-Hole Asymmetry of Spin Injection and Transport in Single-Layer Graphene*", **Physical Review Letters** 102, 137205 (2009).
- [55] W. H. Wang[†], **W. Han[†]** (Co-1st), K. Pi, K. M. McCreary, F. Miao, W. Bao, C. N. Lau, and R. K. Kawakami*, "*Growth of atomically smooth MgO films on graphene by molecular beam epitaxy*", **Applied Physics Letters** 93, 183107 (2008).

Selected Invited Talks

- [1] "*Spin Current in Quantum Materials*", **Spin Caloritronics X**, Groningen, Netherlands (May 2019).
- [2] "*Spin Current in Quantum Materials*", **2018 International Conference on Magnetism (ICM)**, San Francisco, USA (July 2018).
- [3] "*Spin and charge conversion in topological surface states and oxide interface states*", **Intermag 2018**, Singapore, Singapore (Apr. 2018).
- [4] "*Spin and charge conversion in topological surface states and oxide interface states*", **2018 APS March Meeting**, Los Angeles, USA (Mar. 2018).
- [5] "*Spin and Charge Conversion Due to Spin-Momentum Locking*", **2017 Conference on Magnetism and Magnetic Materials (MMM)**, Pittsburgh, USA (Nov. 2017).
- [6] "*Spin and charge conversion in 2D quantum materials*", Spin Dynamics in Nanostructures, **Gordon Research Conferences**, Les Diablerets, Switzerland (July 2017).
- [7] "*Towards efficient spin orbit torque*" **2017 Conference on Magnetism and Magnetic Materials (MMM)**, New Orleans, USA (Oct. 2016).
- [8] "*Role of transparency of platinum-ferromagnet interface in determining intrinsic magnitude of spin Hall effect*", **2016 APS March Meeting**, Baltimore, Maryland, USA (Mar, 2016).
- [9] "*Spin Injection and Relaxation in Graphene*," **2012 APS March Meeting**, Boston, MA, USA (Feb. 2012).

Other Invited Talks and Seminars

- [10] "*Spin Current: A probe for Quantum Materials*", Seminar, Department of Physics, Fudan University, Shanghai, P. R. China (Nov. 2018).
- [11] "*Spin Current for Quantum Materials*", Korean Fall Physics Meeting, Changwon, Korea (Oct. 2018).
- [12] "*Spin Current: A probe for Quantum Materials*", Seminar, Korean Institute of Science and Technology, Seoul, Korea (Oct. 2018).

- [13] “*Spin Current: A probe for Quantum Materials*”, Seminar, School of Physics, Beijing Institute of Technology, Beijing, P. R. China (Sept. 2018).
- [14] “*Experimental Signatures of Spin Superfluidity*”, The Second TMS-PKU Alliance Workshop on ‘Topological Materials and Quantum Materials’, Beijing, P. R. China (Sept. 2018)
- [15] “*Room temperature gate tunable spin and charge conversion at oxide interface*”, SPIE (Spintronics XI), San Diego, CA, USA (Aug. 2018).
- [16] “*Experimental Signatures of Spin Superfluidity*”, Spin Summit, Xingyi, China (Aug. 2018).
- [17] “*Spin Current: A probe for Quantum Materials*”, Seminar, Microsystems Technology Laboratories (MTL), Massachusetts Institute of Technology, Boston, USA (July 2018).
- [18] “*Spin Current for Quantum Materials*”, Seminar, Department of Physics, Tsinghua University, Beijing, P. R. China (May 2018).
- [19] “*Spintronics at ferromagnet-topological insulator interface*”, The 5th International Conference of Asian Union of Magnetism Societies (IcAUMS), Jeju, Korea (June 2018).
- [20] “*Spin Current in Quantum Materials*”, Seminar, School of Physics, Nanjing University, Nanjing, P. R. China (May 2018).
- [21] “*Spin Current in Quantum Materials*”, Workshop of Materials, Tsinghua University, Beijing, P. R. China (May 2018).
- [22] “*Spin Dynamics in Topological Insulator and Superconducting Thin Films*”, Low Temperature Physics conference, Xinxiang, P. R. China (Apr. 2018).
- [23] “*Spin and charge conversion and spin dynamics in quantum materials*”, Seminar, Department of Physics, University of Arizona, Tucson, USA (Feb. 2018).
- [24] “*Spin Dynamics in Topological Insulator and Superconducting Thin Films*”, the 43rd Reimei/GP-Spin/ICC-IMR Workshop on New Excitations in Spintronics, Sendai, Japan (Jan. 2018)
- [25] “*Spin and charge conversion in 2D quantum materials*”, Seminar, Ningbo Institute of Industrial Technology, Ningbo, P. R. China (Dec. 2017).
- [26] “*Electrical control of magnetism*”, 2017 Chinese Conference on Magnetism and Magnetic Materials, Beihai, P. R. China (Nov. 2017).
- [27] “*Spin and charge conversion in 2D quantum materials*”, Seminar, School of Physics, Shandong University, Jinan, P. R. China (Nov. 2017).
- [28] “*Spintronics in 2D Materials*” Graphchina, Nanjing, P. R. China (Sep. 2017).
- [29] “*Spin and charge conversion in quantum materials*”, 2017 Chinese Physics conferences, Chengdu, P. R. China (Sept. 2017).

- [30] “*Spin and charge conversion in quantum materials*”, Workshop on Quantum Spintronics at Interfaces, San Sebastian, Spain (Sept. 2017).
- [31] “*Spintronics at FM-topological insulator interface*”, Spin Summit, Jingtangshan, China (August 2017).
- [32] “*Spintronics in the Topological Surface States*”, 3rd Conference on Condensed Matter Physics (CCMP-2017), Shanghai, China (June 2017).
- [33] “*Spin and charge conversion in quantum materials*”, 9th International Conference on Materials for Advanced Technologies (ICMAT 2017), Suntec, Singapore (June 2017).
- [34] “*Spin and charge conversion in quantum materials*”, International workshop on Spintronics memory and logic, Qingdao, China (June 2017).
- [35] “*Spin and charge conversion in 2D quantum materials*”, Seminar, Department of Physics, The Ohio State University, Ohio, USA (Mar. 2017).
- [36] “*Spin injection and inverse Edelstein effect in the surface states of topological Kondo insulator SmB_6* ”, International symposium on Topological Phases and Functionality of Correlated Electron Systems, Tokyo, Japan (Feb. 2017).
- [37] “*Spin and charge conversion in quantum materials*”, International School on Topological Science and Topological Matters, Kyoto, Japan (Feb. 2017).
- [38] “*Spin and charge conversion in 2D quantum materials*”, Seminar, School of Physics, Collaborative Innovation Center of Advanced Microstructures, Nanjing University, Nanjing, China (Jan. 2017).
- [39] “*Spin and charge conversion in quantum materials*”, Low Temperature Physics conference, Shaoguan, P. R. China (Nov. 2016).
- [40] “*Spin and charge conversion in 2D quantum materials*”, The 2nd Joint Workshop on Condensed Matter Science between PKU and MPI, Beijing, P. R. China (Nov. 2016).
- [41] “*Spin to Charge Conversion in 2D Quantum Materials*” The 6th Annual World Congress of Nano Science & Technology, Singapore (Oct. 2016).
- [42] “*Towards Efficient Spin and Charge Conversion*”, Seminar, Center for 2D Materials, National University of Singapore, Singapore (Oct. 2016).
- [43] “*Spin and charge conversion in quantum materials*”, Rice-ICQM Joint workshop, Beijing, P. R. China (Oct. 2016).
- [44] “*Spin to Charge Conversion in topological surface states of SmB_6* ”, South University of Science and Technology of China, Shenzhen, P. R. China (July 2016).
- [45] “*Spin to Charge Conversion in Quantum Materials*”, 6th ICQs Conference, Beijing, P. R. China (June 2016).
- [46] “*Interface Effects on Spin-Orbit Torque and Gilbert damping*”, ICNS Mini-Symposium

- on Spintronics and 2D Materials, Halle, Germany (May 2016).
- [47] “*Two Extreme Cases for Spin Orbit Coupling*”, Seminar, Institute of Physics, CAS, Beijing, P. R. China (Dec. 2015).
 - [48] “*Role of transparency of platinum-ferromagnet interface in determining intrinsic magnitude of spin Hall effect*”, SPIE (Spintronics VII), San Diego, CA, USA (Aug. 2015).
 - [49] “*Introduction of the spin orbit torque*”, Spintronics workshop, Peking University, Beijing, P. R. China (July 2015).
 - [50] “*Spintronics in Two Dimensional Quantum Materials*”, 2015 ICAM-China Summer School: The Frontier in Condensed Matter Physics, Beijing, P. R. China (July 2015).
 - [51] “*Manipulation of magnetism by pure spin current*”, Seminar, East China Normal University, Shanghai, P. R. China (June 2015).
 - [52] “*Two Extreme Cases for Spin Orbit Coupling*”, Seminar, Institute of Semiconductors, CAS, Beijing, P. R. China (June 2015).
 - [53] “*Interface transparency of spin orbit torque*”, Spintronics workshop, Beijing Normal University, Beijing, P. R. China (May 2015).
 - [54] “*Two Extreme Cases for Spin Orbit Coupling*”, Seminar, Department of Physics, Beijing Normal University, Beijing, P. R. China (Apr. 2015).
 - [55] “*Interface transparency of spin orbit torque*”, Low Temperature Physics conference, Hangzhou, P. R. China (Apr. 2015).
 - [56] “*Two Extreme Cases for Spin Orbit Coupling*”, Seminar, Department of Physics, University of Science and Technology, Hefei, Anhui, P. R. China (Mar. 2015).
 - [57] “*Interface transparency of spin orbit torque*”, UT Austin-PKU workshop, Austin, TX, USA (Feb. 2015).
 - [58] “*Graphene: A Promising Material for Spintronics*”, Seminar, Department of Materials and Engineering, University of Science and Technology, Hefei, Anhui, P. R. China (Jan 2015).
 - [59] “*Graphene spintronics*”, Seminar, School of Physics and Technology, Wuhan University, Wuhan, Hubei, P. R. China (June 2014).
 - [60] “*Spin injection and detection in La and Nb doped SrTiO₃*”, 4th ICQs Conference, Beijing, P. R. China (June 2014).
 - [61] “*Spintronics in Graphene and Complex Oxides*”, Seminar, Department of Physics, Carnegie Mellon University, PA, USA (Feb. 2014).
 - [62] “*Spintronics in Graphene and Complex Oxides*”, Seminar, Department of Physics, Washington State University, WA, USA (Feb. 2014).

-
- [63] “*Spin Injection and Detection in La- and Nb-Doped Strontium Titanate*”, 41st Conference on the Physics and Chemistry of Surfaces and Interfaces, Santa Fe, NM, USA (Jan 2014).
 - [64] “*Spintronics in Graphene and Complex Oxides*”, Seminar, International Center for Quantum Materials, Peking University, Beijing, P. R. China (Dec. 2013).
 - [65] “*Spin injection and detection in lanthanum- and niobium-doped SrTiO₃*”, Physical Sciences Symposia-2013, Boston, MA, USA (Sept 2013).
 - [66] “*Spin Transport in Graphene and Germanium*”, IBM Almaden research center, San Jose, CA, USA (Oct. 2011).
 - [67] “*Spin Transport and Relaxation in Graphene*”, Seminar, Cornell University, Ithaca, NY, USA (Sept. 2011).
 - [68] “*Spin Injection and Relaxation in Graphene*”, SPIE (Spintronics IV), San Diego, CA, USA (Aug. 2011).
 - [69] “*Spin Transport in Graphene and Germanium*”, Seminar, Department of Physics, Penn State University, PA, USA (July 2011).