

Binghai Yan

Curriculum Vitae

October 2017



Birth: Oct-1981 in China
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See also: Google Scholar Citations

Education

2003 B.sc. Xi'an Jiaotong University, Xi'an, China
2008 PhD. in Physics Tsinghua University, Beijing China
Institute for Advanced Study (Prof. Binglin Gu and Prof. Wenhui Duan)

Experience

2008 - 2010 Humboldt postdoc University of Bremen (Prof. Thomas Frauenheim), Germany
2010 - 2011 Postdoc Stanford University (Prof. Shou-Cheng Zhang), US
2011 - 2012 Humboldt postdoc University of Bremen (Prof. Thomas Frauenheim), Germany
2012 - 2017 Group leader MPI for Chemical Physics of Solids (Prof. Claudia Felser) &
MPI for Physics of Complex Systems (joint), Germany.
Since Feb-2017 Assistant Professor Weizmann Institute of Science, Israel.

Scholarships and Awards

2008 Humboldt Fellowship by Humboldt Foundation in Germany
2013 ARCHES Prize by BMBF and Minerva Foundation, Germany
[http://www.minerva.mpg.de/arches/earlier_awardees.html]

Research Grants

2014 - 2018 ARCHES Prize, Minerva Stiftung and BMBF, Germany
Title: Topological superconducting materials
Role: Co-PI.
2016 - 2017 DFG-SPP "Topological Insulator" (SPP-1666 / YA 328/5-1)
Title: Topological Weyl Semimetals for Spintronic Devices
Role: Co-PI.
2017 - 2019 German Israel Foundation (GIF Grant no. I-1364-303.7/2016)
Title: Computation and Visualization of Unexplored Topological Phases
Role: Co-PI.

Organizing Workshops and Journal Issues

- 2012 The CECAM workshop - Topological Materials, University of Bremen, Germany
Organizers: B. Yan, C. Felser, Z. Fang, W. Hanke, T. Frauenheim
<http://www.cecarn.org/workshop-766.html>
- 2013 Focus Issue on Topological Insulators - From Materials Design to Reality
in Phys. Status Solidi RRL
Guest Editors: C. Felser, S.-C. Zhang, B. Yan
<http://onlinelibrary.wiley.com/doi/10.1002/pssr.201350502/full>
- 2016 Weizmann - Max Planck workshop, Rehovot, Israel
Organizers: N. Avraham, H. Beidenkopf, C. Felser and B. Yan
<https://www.topo-materials.com/>
- 2016 Young Research Leaders Workshop: New Paradigms in Dirac-Weyl Nanoelectronics, Germany
Organizers: M. Ali and B. Yan
<https://www.spice.uni-mainz.de/dwn-workshop-2016/>
- 2017 Young Research Leaders Workshop: Chemistry meets Physics in Topology, Germany
Organizers: B. Yan, L. Schoop
<http://www.fkf.mpg.de/CMPtopology>
- 2017 Weizmann - Max Planck workshop, Dresden, Germany
Organizers: N. Avraham, H. Beidenkopf, C. Felser and B. Yan
<https://www.topo-materials.com/>
- 2017 Topological semimetals and beyond, Rehovot, Israel
Organizers: N. Avraham, H. Beidenkopf and B. Yan
<http://www.weizmann.ac.il/conferences/TSB2017/>

Invited Talks in Conferences

- 2013.06 The crossover between 2D and 3D in layered topological insulators
CECAM workshop: Novel 2D materials, Bremen, Germany
- 2013.07 Topological insulators
ASPIMATT summer school, MPI-CPfS, Dresden, Germany
- 2013.07 Heusler compounds, spin orbit coupling, topological insulators and new effects
Workshop Spin Orbit Entanglement, Dresden, Germany
- 2013.09 Heusler compounds, topological insulators and new effects
Workshop Electronic properties of spin-orbit driven oxides, Dresden, Germany
- 2015.06 Topological insulator and topological metal
Symposium on "New Concept Spintronics Devices", York, UK
- 2015.07 Topological Metals: from the Shockley states to topological states
Workshop of Advances in Nanoscience Applications, University of Cambridge, UK
- 2015.07 Topological insulators and topological metals
TRR80 Summer School, Chiemsee, Germany
- 2015.10 Topological Weyl Semimetals
Workshop Beyond CMOS, Castle Ringberg, Germany
- 2016.03 The type-II Weyl semimetal in MoTe₂
Weizmann-Max Planck workshop, Weizmann Institute, Israel
- 2016.03 Topological surface Fermi arcs in Weyl Semi-Metal materials
DPG Spring Meeting, Regensburg, Germany
- 2016.04 Topological surface states and chiral magneto-transport in TaAs-type of Weyl semimetals
Workshop "The 2nd Floating Zone technique", IFW Dresden, Germany
- 2016.06 Giant intrinsic spin Hall effect in the Weyl Semimetals
Young Research Leaders Group Workshop, Mainz, Germany
- 2016.06 Discovery of a new type of topological Weyl semimetal in MoTe₂
CECAM-Workshop "Tailor-made 2D-materials and functional devices", Bremen, Germany
- 2016.07 Large magnetoresistance and the Fermi surface topology of the NbP-type Weyl semimetals
22nd Conference on High Magnetic Fields in Semiconductor Physics, Sapporo-shi, Japan
- 2016.07 Surface Fermi arcs and bulk spin currents in the Weyl semimetals
New Trends in Topological Insulators 2016 (NTTI 2016) and
17th International Conference on Narrow Gap Semiconductors (NGS17), Würzburg, Germany
- 2016.08 Spin orbit interaction; 2D and 3D topological insulators
Summer school on "Topological Matter States 2016", San Sebastian, Spain
- 2016.09 Surface Fermi arcs and bulk spin transport in the Weyl SemiMetals
Condensed Matter in Groningen (CMD26), Groningen, Netherlands
- 2016.09 Topological Fermi arcs of Weyl Semimetal Materials: from the bulk to the surface
Yukawa Institute for Theoretical Physics (YITP) international workshop [BEC2016], Kyoto, Japan
- 2016.12 AFM Weyl SemiMetal Materials
SRITP Workshop: Strongly Correlated Matter: Present and Future, Weizmann Institute, Israel
- 2017.02 Dirac nodal lines and induced spin Hall effect in metallic rutile oxides
Young Research Leaders Group Workshop: Chemistry meets Physics in Topology, Germany
- 2017.03 Topological Weyl Semimetal Materials Surface Fermi Arcs and Bulk Spin Current
APS March Meeting, New Orleans, US
- 2017.06 Berry phase and spin current in chiral AFM Weyl Semimetals
2nd Weizmann ? Max Planck Workshop, Dresden, Germany
- 2017.06 The type-II Weyl semimetal phase in MoTe₂
2D and layered Materials, Ohio State University, USA
- 2017.06 Berry phase and spin current in chiral AFM Weyl Semimetals
3rd Conference on Condensed Matter Physics (CCMP-2017), Shanghai, China
- 2017.09 Berry phase and spin current in Weyl Semimetals
CECAM ab initio Spin-orbitronics, Montesilvano, Pescara (Italy)

Invited Talks in Institutes

- 2011.04 Theoretical prediction of topological insulators: the TiBiSe_2 family and the $\text{CeOs}_4\text{Sb}_{12}$ family
University of Wuerzburg, Wuerzburg, Germany
- 2012.11 Topological insulator materials
Lorentz Center, Leiden University, Netherland
- 2013.04 Strong and weak topological insulators in the honeycomb lattice
EPFL, Lausanne, Switzerland
- 2014.02 Topological insulators from the perspective of chemistry
Weizmann Institute of Science, Israel
- 2014.06 Topological insulator materials with large energy-gap
University of Wuerzburg, Germany
- 2014.08 Topological insulator materials in the honeycomb lattice
University of Duisburg-Essen, Germany
- 2015.02 Quantum Anomalous Hall Effects on the Novel Honeycomb Material Stanene
University of Mainz, Germany
- 2015.03 Topological insulators and topological metals
IBM Almaden Research Center, US
- 2015.03 Topological insulating states with maximized energy gap
Stanford University, US
- 2016.01 Materials Design for topological quantum materials
Weizmann Institute of Science, Israel
- 2016.03 Materials Design for topological quantum materials
Stuttgart University, Stuttgart, Germany
- 2016.03 An introduction to topological Weyl semimetals
Max Planck Institute for microstructure physics, Halle, Germany
- 2016.05 Surface Fermi arcs and bulk chiral magneto-transport of the Weyl semimetals
Max-Planck-Institut fr Festkrperforschung, Stuttgart, Germany
- 2016.07 Surface Fermi arcs and bulk chiral magneto-transport of the TaAs family Weyl semimetals
Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany
- 2017.07 Berry phase and spin current in chiral AFM Weyl Semimetals
IASTU, Tsinghua University, Beijing, China
- 2017.08 Berry curvature monopoles and dipoles in Weyl Semimetal materials
University of Pennsylvania (Penn), Philadelphia, PA, US
- 2017.08 Berry curvature monopoles and dipoles in Weyl Semimetal materials
Rutgers, The State University of New Jersey (Rutgers), Piscataway, NJ, USA
- 2017.08 Berry curvature dipoles and nonlinear optical response in Weyl Semimetal materials
Pennsylvania State University (PSU), College Park, PA, USA
- 2017.08 Berry phase and spin current in Weyl Semimetals
Carnegie Mellon University (CMU), Pittsburg, PA, USA
- 2017.09 Berry curvature dipole in Weyl Semimetal materials
Massachusetts Institute of Technology (MIT), Cambridge, MA, USA
- 2017.09 Berry phase and spin current in Weyl Semimetals
Harvard University, Cambridge, MA, USA

List of Publications

A brief overview:

Journal	Number
Nature	1
Nature Materials	2
Nature Physics	3
Nature Nanotechnology	1
Nature Communications	6
Science Advances	3
Physical Review Letters	14
Physical Review X	1
Physical Review B	35
Ann. Rev. Cond. Matter Phys.	1
Reports on Progress in Physics	1
Angewandte Chemie	2
Nano Letters	5

More bibliometrics information can be found in Google Scholar Citations:

https://scholar.google.de/citations?user=504Jb_IAAAAJ&hl=en

Five Selected Publications

1. Sun, Y., Y. Zhang, C. Felser, and B. **Yan**.
Strong Intrinsic Spin Hall Effect in the TaAs Family of Weyl Semimetals.
Physical Review Letters **117** (14 Sept. 2016), 146403.
2. Shekhar, C., A. K. Nayak, Y. Sun, M. Schmidt, M. Nicklas, I. Leermakers, U. Zeitler, Y. Skourski, J. Wosnitzer, Z. Liu, Y. Chen, W. Schnelle, H. Borrmann, Y. Grin, C. Felser, and B. **Yan**.
Extremely large magnetoresistance and ultrahigh mobility in the topological Weyl semimetal candidate NbP.
Nature Physics **11** (2015), 645–649.
3. Sun, Y., S.-C. Wu, M. N. Ali, C. Felser, and B. **Yan**.
Prediction of Weyl semimetal in orthorhombic MoTe₂.
Physical Review B **92**(16) (2015), 161107 (R) (7pp).
4. Yang, L. X., Z. K. Liu, Y. Sun, H. Peng, H. F. Yang, T. Zhang, B. Zhou, Y. Zhang, Y. F. Guo, M. Rahn, D. Prabhakaran, Z. Hussain, S.-K. Mo, C. Felser, B. **Yan**, and Y. L. Chen.
Weyl semimetal phase in the non-centrosymmetric compound TaAs.
Nature Physics **11**(9) (2015), 728–732.
5. **Yan**, B. and S.-C. Zhang.
Topological materials.
Reports on Progress in Physics **75**(9) (2012), 096501(23pp).

Invited Reviews and Perspectives

1. **Yan**, B. and C. Felser.
Topological Materials: Weyl Semimetals.
Annual Review of Condensed Matter Physics **8**(1) (2017), 337–354, arXiv:1611.04182.
2. Felser, C. and B. **Yan**.
Weyl semimetals: Magnetically induced.
Nature Materials **15**(11) (Nov. 2016), 1149–1150.
3. **Yan**, B. and A. de Visser.
Half-Heusler topological insulators.
MRS Bulletin **39** (2014), 859–866.
4. Muechler, L., F. Casper, B. **Yan**, S. Chadov, and C. Felser.
Topological insulators and thermoelectric materials.

physica status solidi (RRL)-Rapid Research Letters **7** (2012), 91–100.

5. MÜchler, L., H. Zhang, S. Chadov, B. **Yan**, F. Casper, J. Kübler, S.-C. Zhang, and C. Felser. Topological Insulators from a Chemist's Perspective. *Angewandte Chemie* **51**(29) (2012), 7221–7225.
6. **Yan**, B. and S.-C. Zhang. Topological materials. *Reports on Progress in Physics* **75**(9) (2012), 096501(23pp).

Peer Reviewed Articles

1. Chen, C., X. Xu, J. Jiang, S.-C. Wu, Y. P. Qi, L. X. Yang, M. X. Wang, Y. Sun, N. B. M. Schroeter, H. F. Yang, L. M. Schoop, Y. Y. Lv, J. Zhou, Y. B. Chen, S. H. Yao, M. H. Lu, Y. F. Chen, C. Felser, B. H. **Yan**, Z. K. Liu, and Y. L. Chen. Dirac line nodes and effect of spin-orbit coupling in the nonsymmorphic critical semimetals M SiS (M= Hf, Zr). *Physical Review B* **95** (12 Mar. 2017), 125126 (7pp).
2. Ekahana, S. A., S.-C. Wu, J. Jiang, K. Okawa, D. Prabhakaran, C.-C. Hwang, S.-K. Mo, T. Sasagawa, C. Felser, B. **Yan**, et al. Observation of nodal line in non-symmorphic topological semimetal InBi. *New Journal of Physics* **19**(6) (2017), 065007.
3. Gooth, J., A. C. Niemann, T. Meng, A. G. Grushin, K. Landsteiner, B. Gotsmann, F. Menges, M. Schmidt, C. Shekhar, V. Suß, R. Hühne, B. Rellinghaus, C. Felser, B. **Yan**, and K. Nielsch. Experimental signatures of the mixed axial-gravitational anomaly in the Weyl semimetal NbP. *Nature* **547**(7663) (July 2017), 324–327.
4. Jiang, J., Liu, Z. K., Sun, Y., Yang, H F, Rajamathi, C R, Qi, Y P, Yang, L X, Chen, C, Peng, H, Hwang, C C, Sun, S Z, Mo, S.-K., Vobornik, I, Fujii, J, Parkin, S.S.P., Felser, C., Yan, Binghai, and Chen, Y. L. Signature of type-II Weyl semimetal phase in MoTe2. *Nature Communications* **8** (2017), 13973 (6pp).
5. Kumar, N., K. Manna, Y. Qi, S.-C. Wu, L. Wang, B. **Yan**, C. Felser, and C. Shekhar. Unusual magnetotransport from Si-square nets in topological semimetal HfSiS. *Physical Review B* **95**(12) (2017), 121109 (5pp).
6. Nayak, J., S.-C. Wu, N. Kumar, C. Shekhar, S. Singh, J. Fink, E. E. D. Rienks, G. H. Fecher, S. S. P. Parkin, B. **Yan**, and C. Felser. Multiple Dirac cones at the surface of the topological metal LaBi. *Nature Communications* **8** (2017), 113942.
7. Niemann, A. C., J. Gooth, S.-C. Wu, S. Baessler, P. Sergelius, R. Huehne, B. Rellinghaus, C. Shekhar, V. Suess, M. Schmidt, C. Felser, B. **Yan**, and K. Nielsch. Chiral magnetoresistance in the Weyl semimetal NbP. *Scientific Reports* **7** (2017), 43394 (6pp).
8. Prasad, B. E., S. Kanungo, M. Jansen, A. C. Komarek, B. **Yan**, P. Manuel, and C. Felser. AgRuO₃, a Strongly Exchange-Coupled Honeycomb Compound Lacking Long-Range Magnetic Order. *Chemistry-A European Journal* **23**(19) (Apr. 2017), 4680–4686.
9. Qi, Y., H. Lei, J. Guo, W. Shi, B. **Yan**, C. Felser, and H. Hosono. Superconductivity in alkaline earth metal-filled skutterudites Ba_xIr₄X₁₂ (X= As, P). *Journal of the American Chemical Society* (2017).
10. Qi, Y., W. Shi, P. G. Naumov, N. Kumar, R. Sankar, W. Schnelle, C. Shekhar, F.-C. Chou, C. Felser, B. **Yan**, and S. A. Medvedev. Topological quantum phase transition and superconductivity induced by pressure in the bismuth tellurohalide BiTeI. *Advanced Materials* (2017), 1605965 (7pp).

11. Rajamathi, C. R., U. Gupta, N. Kumar, H. Yang, Y. Sun, V. Suess, C. Shekhar, M. Schmidt, H. Blumtritt, P. Werner, B. **Yan**, S. Parkin, C. Felser, and C. N. R. Rao.
Weyl Semimetals as Hydrogen Evolution Catalysts.
Advanced Materials **54** (Mar. 2017), 1606202 (6pp).
12. Rajamathi, C. R., U. Gupta, K. Pal, N. Kumar, H. Yang, Y. Sun, C. Shekhar, B. **Yan**, S. Parkin, U. V. Waghmare, et al.
Photochemical water splitting by bismuth chalcogenide topological insulators.
ChemPhysChem (2017).
13. Reiner, J., A. K. Nayak, N. Avraham, A. Norris, B. **Yan**, I. C. Fulga, J.-H. Kang, T. Karzig, H. Shtrikman, and H. Beidenkopf.
Hot Electrons Regain Coherence in Semiconducting Nanowires.
Phys. Rev. X **7**(2) (May 2017), 021016.
14. Sessi, P., Y. Sun, T. Bathon, F. Glott, Z. Li, H. Chen, L. Guo, X. Chen, M. Schmidt, C. Felser, B. **Yan**, and M. Bode.
Impurity screening and stability of Fermi arcs against Coulomb and magnetic scattering in a Weyl mononpnictide.
Physical Review B **95**(3) (2017), 035114 (6pp).
15. Sun, Y., Y. Zhang, C.-X. Liu, C. Felser, and B. **Yan**.
Dirac nodal lines and induced spin Hall effect in metallic rutile oxides.
Physical Review B **95**(23) (2017), 235104.
16. Wu, J., H. Yuan, M. Meng, C. Chen, Y. Sun, Z. Chen, W. Dang, C. Tan, Y. Liu, J. Yin, Y. Zhou, S. Huang, H. Q. Xu, Y. Cui, H. Y. Hwang, Z. Liu, Y. Chen, B. **Yan**, and H. Peng.
High electron mobility and quantum oscillations in non-encapsulated ultrathin semiconducting Bi₂O₂Se.
Nature Nanotechnology **5** (Apr. 2017), 4475 (6pp).
17. Yang, H., Y. Sun, Y. Zhang, W.-J. Shi, S. S. Parkin, and B. **Yan**.
Topological Weyl semimetals in the chiral antiferromagnetic materials Mn₃Ge and Mn₃Sn.
New Journal of Physics **19**(1) (2017), 015008(7pp).
18. Yasuoka, H., T. Kubo, Y. Kishimoto, D. Kasinathan, M. Schmidt, B. **Yan**, Y. Zhang, H. Tou, C. Felser, A. Mackenzie, et al.
Emergent Weyl Fermion Excitations in TaP Explored by Ta 181 Quadrupole Resonance.
Physical Review Letters **118**(23) (2017), 236403.
19. Yu, J., B. **Yan**, and C.-X. Liu.
Model Hamiltonian and time reversal breaking topological phases of antiferromagnetic half-Heusler materials.
Physical Review B **95** (23 June 2017), 235158.
20. Zhang, Y., Y. Sun, H. Yang, J. Zelezny, S. P. Parkin, C. Felser, and B. **Yan**.
Strong anisotropic anomalous Hall effect and spin Hall effect in the chiral antiferromagnetic compounds Mn₃X (X= Ge, Sn, Ga, Ir, Rh, and Pt).
Physical Review B **95**(7) (2017), 075128 (9pp).
21. Arnold, F., M. Naumann, S.-C. Wu, Y. Sun, M. Schmidt, H. Borrmann, C. Felser, B. **Yan**, and E. Hassinger.
Chiral Weyl Pockets and Fermi Surface Topology of the Weyl Semimetal TaAs.
Physical Review Letters **117** (14 Sept. 2016), 146401.
22. Arnold, F., C. Shekhar, S.-C. Wu, Y. Sun, R. D. dos Reis, N. Kumar, M. Naumann, M. O. Ajeesh, M. Schmidt, A. G. Grushin, J. H. Bardarson, M. Baenitz, D. Sokolov, H. Borrmann, M. Nicklas, C. Felser, E. Hassinger, and B. **Yan**.
Negative magnetoresistance without well-defined chirality in the Weyl semimetal TaP.
Nature Communications **7** (2016), 11615 (7pp).
23. Batabyal, R., N. Morali, N. Avraham, Y. Sun, M. Schmidt, C. Felser, A. Stern, B. **Yan**, and H. Beidenkopf.
Visualizing weakly bound surface Fermi arcs and their correspondence to bulk Weyl fermions.

- Science Advances* 2(8) (2016), e1600709 (7pp).
24. Dong, X.-Y., S. Kanungo, B. **Yan**, and C.-X. Liu.
Time-reversal-breaking topological phases in antiferromagnetic Sr₂FeOsO₆ films.
Physical Review B 94(24) (2016), 245135.
 25. Kanungo, S., K. Mogare, B. **Yan**, M. Reehuis, A. Hoser, C. Felser, and M. Jansen.
Weak orbital ordering of Ir t₂g states in the double perovskite Sr₂CeIrO₆.
Physical Review B 93(24) (2016), 245148 (6pp).
 26. Kanungo, S., B. **Yan**, C. Felser, and M. Jansen.
Active role of nonmagnetic cations in magnetic interactions for double-perovskite S r₂BOsO₆ (B= Y, In, Sc).
Physical Review B 93(16) (2016), 161116(R) (6pp).
 27. Klotz, J., S.-C. Wu, C. Shekhar, Y. Sun, M. Schmidt, M. Nicklas, M. Baenitz, M. Uhlarz, J. Wosnitzer, C. Felser, and B. **Yan**.
Quantum oscillations and the Fermi surface topology of the Weyl semimetal NbP.
Physical Review B 93(12) (2016), 121105 (5pp).
 28. Kumar, N., C. Shekhar, S.-C. Wu, I. Leermakers, O. Young, U. Zeitler, B. **Yan**, and C. Felser.
Observation of pseudo-two-dimensional electron transport in the rock salt-type topological semimetal LaBi.
Physical Review B 93(24) (2016), 241106 (6pp).
 29. Liu, Z. K., L. X. Yang, Y. Sun, T. Zhang, H. Peng, H. F. Yang, C. Chen, Y. Zhang, Y. F. Guo, D. Prabhakaran, M. Schmidt, Z. Hussain, S.-K. Mo, C. Felser, B. **Yan**, and Y. L. Chen.
Evolution of the Fermi surface of Weyl semimetals in the transition metal pnictide family.
Nature Materials 15(1) (2016), 27–31.
 30. Liu, Z. K., L. X. Yang, S. C. Wu, C. Shekhar, J. Jiang, H. F. Yang, Y. Zhang, S.-K. Mo, Z. Hussain, B. **Yan**, C. Felser, and Y. L. Chen.
Observation of unusual topological surface states in half-Heusler compounds LnPtBi (Ln = Lu, Y).
Nature Communications 7 (Sept. 2016), 12924 (7pp).
 31. Nayak, A. K., J. E. Fischer, Y. Sun, B. **Yan**, J. Karel, A. C. Komarek, C. Shekhar, N. Kumar, W. Schnelle, J. Ku bler, C. Felser, and S. Parkin.
Large anomalous Hall effect driven by a nonvanishing Berry curvature in the noncollinear antiferromagnet Mn₃Ge.
Science Advances 2(4) (2016), e1501870 (5pp).
 32. Qi, Y., P. G. Naumov, M. N. Ali, C. R. Rajamathi, W. Schnelle, O. Barkalov, M. Hanfland, S.-C. Wu, C. Shekhar, Y. Sun, V. Süß, M. Schmidt, U. Schwarz, E. Pippel, P. Werner, R. Hillebrand, T. Forster, E. Kampert, S. Parkin, R. J. Cava, C. Felser, B. **Yan**, and S. A. Medvedev.
Superconductivity in Weyl semimetal candidate MoTe₂.
Nature Communications 7 (2016), 11038 (7pp).
 33. Qi, Y., W. Shi, P. G. Naumov, N. Kumar, W. Schnelle, O. Barkalov, C. Shekhar, H. Borrmann, C. Felser, B. **Yan**, and S. A. Medvedev.
Pressure-driven superconductivity in the transition-metal pentatelluride HfTe₅.
Physical Review B 94 (2016), 054517 (9pp).
 34. Reis, R. dos, S. Wu, Y. Sun, M. Ajeesh, C. Shekhar, M. Schmidt, C. Felser, B. **Yan**, and M. Nicklas.
Pressure tuning the Fermi surface topology of the Weyl semimetal NbP.
Physical Review B 93(20) (2016), 205102 (7pp).
 35. Sergelius, P., J. Gooth, S. Bäßler, R. Zierold, C. Wiegand, A. Niemann, H. Reith, C. Shekhar, C. Felser, B. **Yan**, and K. Nielsch.
Berry phase and band structure analysis of the Weyl semimetal NbP.
Scientific Reports 6 (2016), 33859 (6pp).
 36. Sun, Y., Q.-Z. Wang, S.-C. Wu, C. Felser, C.-X. Liu, and B. **Yan**.
Pressure-induced topological insulator in NaBaBi with right-handed surface spin texture.

- Physical Review B* **93**(20) (2016), 205303 (9pp).
37. Sun, Y., Y. Zhang, C. Felser, and B. **Yan**.
Strong Intrinsic Spin Hall Effect in the TaAs Family of Weyl Semimetals.
Physical Review Letters **117** (14 Sept. 2016), 146403.
 38. Zhang, R.-X., J. A. Hutasoit, Y. Sun, B. **Yan**, C. Xu, and C.-X. Liu.
Topological nematic phase in Dirac semimetals.
Physical Review B **93**(4) (2016), 041108(R) (5pp).
 39. Zhang, W., W. Han, S. H. Yang, Y. Sun, Y. Zhang, B. **Yan**, and S. Parkin.
Giant facet-dependent spin-orbit torque and spin Hall conductivity in the triangular antiferromagnet IrMn₃.
Science Advances **2**(9) (Sept. 2016), e1600759 (8pp).
 40. Zhou, L., B. Shao, W. Shi, Y. Sun, C. Felser, B. **Yan**, and T. Frauenheim.
Prediction of the quantum spin Hall effect in monolayers of transition-metal carbides MC (M = Ti, Zr, Hf).
2D Materials **3**(3) (2016), 035022 (9pp).
 41. Zhou, L., W. Shi, Y. Sun, B. Shao, C. Felser, B. **Yan**, and T. Frauenheim.
Two-dimensional rectangular tantalum carbide halides TaCX (X = Cl, Br, I): novel large-gap quantum spin Hall insulators.
2D Materials **3**(3) (2016), 035018 (7pp).
 42. Felser, C., B. **Yan**, S. Chadov, J. Kübler, L. Mühler, and S. Zhang.
New developments in the area of topological insulators.
AIP Conference Proceedings **1697**(1) (2015).
 43. Kanungo, S., B. **Yan**, P. Merz, C. Felser, and M. Jansen.
Na₄IrO₄: Square-Planar Coordination of a Transition Metal in d⁵ Configuration due to Weak On-Site Coulomb Interactions.
Angewandte Chemie **127**(18) (2015), 5507–5510.
 44. Kou, L., F. Hu, B. **Yan**, T. Wehling, C. Felser, T. Frauenheim, and C. Chen.
Proximity enhanced quantum spin Hall state in graphene.
Carbon **87** (2015), 418–423.
 45. Kou, L., Y. Ma, B. **Yan**, X. Tan, C. Chen, and S. C. Smith.
Encapsulated silicene: A robust large-gap topological insulator.
ACS Applied Materials & Interfaces **7**(34) (2015), 19226–19233.
 46. Li, G., B. **Yan**, R. Thomale, and W. Hanke.
Topological nature and the multiple Dirac cones hidden in Bismuth high-T_c superconductors.
Scientific Reports **5** (2015), 10435 (8pp).
 47. Lin, S.-Y., M. Chen, X.-B. Yang, Y.-J. Zhao, S.-C. Wu, C. Felser, and B. **Yan**.
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