

Dr. Qiang Zhang

Neutron Scattering Scientist in Neutron Science Division, ORNL

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Total publications: 84; Citations: 1975; H index: 26

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AWARDS and RECOGNITIONS

Laboratory Directed Research and Development (Investigator, 1197000 \$/ 2 years)

2018-2020

Newton International Fellowship in Royal Society (awarded 101,000 £/2 years, **success ratio ~ 5.6%**) 2011

UNSW Vice-Chancellor's postdoctoral fellowship in Australian (My application was chosen 2011 for the final list successfully prior to the withdrawal of my application, **success ratio ~ 5%**)

Marie Curie Experienced Researcher within the Seventh Framework Programme (FP7) of the European Community 2009

Changxu Shi Scholarship in Chinese Academy of Sciences 2008

EDUCATION

Shenyang National Laboratory for Materials Science, Institute of Metal Research 2005---2009
and International Centre for Materials Physics, Chinese academy of sciences

Doctor of philosophy (Excellent thesis), Material Science and Engineering, Issued on April 2, 2009

Shenyang National Laboratory for Materials Science, Institute of Metal Research, 2002--- 2005
and International Centre for Materials Physics, CAS;

Master, Material Science and Engineering, Issued on July 30, 2005

Department of Physics, Qufu Normal University, China 1998--- 2002

Bachelor, Physics, Issued on July 28, 2002

EMPLOYMENT

Aug. 2018--- now Neutron Scattering Scientist in Neutron Science Division, ORNL

Apr. 2015--- Aug. 2018 Research assistant professor & Research associate 5 in Louisiana Consortium for Neutron Scattering (LaCNS), Louisiana State University (remote station in the time-of-flight (TOF) group, QCMD, Oak Ridge National Laboratory)

Host in ORNL: Alan Tennant

Advisor in LSU: John F. DiTusa

Co-advisors: Rongying Jin (LSU), Jiandi Zhang (LSU), Stephen Nagler (ORNL), Ward Plummer (LSU), and Zhiqiang Mao (Tulane University)

My role and research interests:

- Neutron scattering investigation on novel materials;
- Design of uniaxial pressure cells to use in beamlines at HFIR and SNS;
- Train postdoc/graduation students in LaCNS on neutron experiments and data analysis;

Sep. 2011--- April. 2015 Postdoctoral research associate, Ames laboratory, U.S. Department of Energy & Division of Materials Sciences and Engineering, Iowa State University

Advisors: David Vaknin, Robert J. McQueeney, and Alan Goldman

Research interests: Neutron and synchrotron x-ray scattering investigation on spinels and pnictides materials;

Mar. 2012---May. 2012 Newton fellow in School of Physics and Astronomy, University of Glasgow (I resigned this fellowship due to a family issue)

Advisors: Robert L. Stamps and Donald MacLaren

Sep. 2009---Sep. 2011 Marie Curie experienced researcher, Laboratory CRISMAT, CNRS, France

Advisors: Vincent Hardy and Wilfrid Prellier

Research interests: Synchrotron x-ray scattering and materials characterization on complex transition-metal oxides

Aug. 2008---Aug. 2009 Research associate, Research Center for Dielectric and Advanced Matter Physics, Department of Physics, Pusan National University, Republic of Korea

Advisor: Jin Hyung Cho

Oct. 2006---Jan. 2007 Exchange Ph.D student, Magnetic & Superconducting Materials group, Leiden University, and Inorganic Materials Science group, University of Twente, the Netherlands.

Advisors: Jan Aarts and Guus Rijnders

PEER REVIEWING AND PROFESSIONAL ACTIVITIES

Frequently invited referee for *Applied physics letters*, *Physical Review Materials*, *Physical Review B*, *ACS Materials Letters*, *Chemistry of materials*, *ACS Applied Materials & Interfaces*, *Inorganic Chemistry*, *EPL*, *Journal of applied physics*, *Journal of physics: Condensed Matter*, *Philosophical magazine letters*, *Intermetallics*, *Journal of physics D: applied physics*, *Thin solid films*, *Journal of alloys and compounds*, *Applied Physics A: Materials Science & Processing*, *Journal of Magnetism and Magnetic Materials*, etc.

Virtual Workshop on Neutrons and Complementary Techniques for Quantum Materials. Co-organizer,

Head judge for MiTeGen-Society of Physics Students Undergraduate Poster award at ACA2021.

Invited book chapters for “x-ray scattering”, “Spinels” from Intech publisher, and “magnetocaloric effect” from Nova publisher.

Lead Guest Editor of special issue on “Multiferroics: Synthesis, Characterization, and Applications” in *Advances in Condensed Matter Physics*.

Invited Editor for *ISRN Thermodynamics*, 2013-2015.

LIST OF PUBLICATIONS

28 papers as the leading author: *Nature Materials* (1), *Physical Review Letters* (2), *Physical Review B* (12), *Physical Review Materials* (1), *Applied Physics Letters* (3), *Journal of Physics: Condensed Matter* (FTC) (1), *Journal of Applied Physics* (3), *Journal of Physics D: Applied Physics* (3), *Solid state communications* (1), *Physica status solidi* (a) (1).

84 peer-reviewed journal articles in total: *Nature Materials* (2), *Physical Review Letters* (3), *Nature Communications* (4), *Energy & Environmental Science* (1), *ACS energy letters* (1), *Journal of the American Chemical Society* (2), *Applied Physics Letters* (10), etc. Citations ~1975 and an h-index of 26 based on Google scholar as of July, 2021. All of my publications can be found in my google citations: <https://scholar.google.com/citations?user=Hj33eQgAAAAJ&hl=en> or my ORCID: <http://orcid.org/0000-0003-0389-7039>. Here is the bar chart of citation result from google scholar and the list of my publications.



Qiang Zhang

[Oak Ridge National Laboratory](#)

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[Neutron scattering](#) [magnetism](#)

Cited by

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	All	Since 2016
Citations	1975	1226
h-index	26	19
i10-index	44	37

1. **Qiang Zhang**, Satoshi Okamoto, German D. Samolyuk, Matthew B. Stone, Alexander I. Kolesnikov, Rui Xue, Jiaqiang Yan, Michael A. McGuire, David Mandrus, and D. Alan Tennant, “Unusual exchange couplings and intermediate temperature Weyl state in $\text{Co}_3\text{Sn}_2\text{S}_2$ ”, *Physical Review Letters*, In Press, arXiv:2102.0705, (2021).
2. **Qiang Zhang**, Jinyu Liu, Huibo Cao, W Adam Phelan, JF DiTusa, D Alan Tennant, Zhiqiang Mao, Nature Communications, “Toward exotic magnetic and topological semimetallic states in $\text{Eu}_{1-x}\text{Sr}_x\text{MnSb}_2$ ”, *Advanced Science*, Submitted, arxiv.org/pdf/2010.10405, (2021).
3. Yili Cao, Kun Lin, Sergii Khmelevskiy, Maxim Avdeev, Keith M. Taddei, **Qiang Zhang**, Qingzhen Huang, Qiang Li, Kenichi Kato, Chiu Chung Tang, Alexandra Gibbs, Chin-Wei Wang, Jinxia Deng, Jun Chen, Hongjie Zhang and Xianran Xing, “Ultrawide temperature range super-Invar behavior of $\text{R}_2(\text{Fe},\text{Co})_{17}$ materials (R = rare earth)”, *Physical Review Letters*, In press.
4. Yong Hu, Scott Broderick, Zipeng Guo, Alpha T. N’Diaye, Cheng Li, **Qiang Zhang**, Yulong Huang, Chi Zhou, Shenqiang Ren, “Proton switching molecular magnetoelectricity”, *Nature Communications*, In press, (2021).
5. Lei Ding, Xianghan Xu, Harald O. Jeschke, Xiaojian Bai, Erxi Feng, Admasu Solomon Alemayehu, Jaewook Kim, Feiting Huang, **Qiang Zhang**, Xiabin Ding, Neil Harrison, Vivien Zapf, Daniel Khomskii, Igor I. Mazin, Sang-Wook Cheong, Huibo Cao, “Field-tunable toroidal moment in a chiral-lattice magnet”, *Nature Communications*, Accepted, (2021).
6. Vladislav V. Klepov, Kristen A. Pace, Anna A. Berseneva, Justin B. Felder, Stuart Calder, Gregory Morrison, **Qiang Zhang**, Melanie J. Kirkham, David S. Parker, Hans-Conrad zur Loye, *Journal of the American Chemical Society*, In press, (2021).
7. Laidong Zhou, Se Young Young Kim, Chun-Yuen Kwok, Abdeljalil Assoud, **Qiang Zhang**, Linda Nazar, 4. “High-areal capacity, long cycle-life 4 V ceramic all solid-state Li batteries”, *Nature Energy*, Resubmitted (2021).
8. T. Berry, Allyson M. Fry-Petit, M. Sinha, **Qiang Zhang**, Gudrun Auffermann, T. M. McQueen, and W. Adam Phelan, “The Role of Phonons and Vacancies in Non-Cubic SrVO_3 ”, *Advanced Functional Materials*, Submitted (2021).
9. S. X. M. Riberolles, **Q. Zhang**, Elijah Gordon, N. P. Butch, Liqin Ke, J.-Q. Yan, R. J. McQueeney, “Evolution of Magnetic Interactions in Sb-substituted MnBi_2Te_4 ”, *Physical Review B*, In press, (2021).
10. Shang Gao, Andrew F. May, Mao-Hua Du, Joseph A. M. Paddison, Hasitha Suriya Arachchige, Ganesh Pokharel, Clarina dela Cruz, **Qiang Zhang**, Georg Ehlers, David S. Parker, David G. Mandrus, Matthew B. Stone, Andrew D. Christianson, “Hierarchical excitations from correlated spin tetrahedra on the breathing pyrochlore lattice”, *Physical Review B*, **103**, 214418, (2021).
11. Hector C. Mandujano, Sandra L. Gonzalez, Nathan Episcopo, Uma Sitharaman, Narayan Poudel, Krzysztof Gofryk, Yahir E. Garay, Jorge A. Lopez, **Qiang Zhang**, Stuart Calder, and Harikrishnan S. Nair, “Absence of long-range magnetic order in lithium-containing honeycombs $\text{Li}_4\text{CrTeO}_6$ and $\text{Li}_4\text{CrSbO}_6$ ”, *Journal of Physics: Condensed Matter*, **33** 295802, (2021).
12. B. C. Sales, W. R. Meier, A. F. May, J. Xing, J.-Q. Yan, S. Gao, Y. H. Liu, M. B. Stone, A. D. Christianson, **Q. Zhang**, and M. A. McGuire, “Tuning the flat bands of the kagome metal CoSn with Fe, In, or Ni doping “, *Phys. Rev. Materials* **5**, 044202, (2021).
13. Loi T. Nguyen, Daniel B. Straus, **Q. Zhang**, and R. J. Cava, “Widely spaced planes of magnetic dimers in the $\text{Ba}_6\text{Y}_2\text{Rh}_2\text{Ti}_2\text{O}_{17-\delta}$ hexagonal perovskite”, *Physical Review Materials* **5**, 034419, (2021).
14. L Jin, **Q Zhang**, RJ Cava, “The Hydrogen-Containing Bronzes $\text{H}_0.23\text{WO}_3$ and $\text{H}_0.10\text{ReO}_3$ Synthesized via a Polymer Route”, *Journal of Solid State Chemistry*, **297**, 122059 (2021).
15. William R Meier, Bryan C Chakoumakos, Satoshi Okamoto, Michael A McGuire, Raphaël P Hermann, German D Samolyuk, Shang Gao, **Qiang Zhang**, Matthew B Stone, Andrew D Christianson, Brian C Sales, “A catastrophic charge density wave in BaFe_2Al_9 ”, *Chemistry of Materials*, **33**, 2855, (2021).
16. LT Nguyen, M Saubanère, **Q Zhang**, RJ Cava, “Structure, Magnetism and First Principles Modeling of the $\text{Na}_{0.5}\text{La}_{0.5}\text{RuO}_3$ Perovskite”, *Chemistry of Materials* **33**, 600, (2021).

17. MM Bordelon, JD Bocarsly, L Posthuma, A Banerjee, **Q Zhang**, SD Wilson, “Antiferromagnetism and crystalline-electric field excitations in tetragonal NaCeO₂”, *Physical Review B* 103, 024430, (2021).
18. Binod K Rai, Ganesh Pokharel, Hasitha Suriya Arachchige, Seung-Hwan Do, **Qiang Zhang**, Masaaki Matsuda, Matthias Frontzek, Gabriele Sala, V Ovidiu Garlea, Andrew D Christianson, Andrew F May, “Complex magnetic phases in polar tetragonal intermetallic NdCoGe₃”, *Physical Review B* 103, 024430, (2021).

2020-2019

1. Ji Qi, Baojuan Dong, Zhe Zhang, Zhao Zhang, Yanna Chen, **Qiang Zhang**, Sergey Danilkin, Xi Chen, Liangwei Fu, Xiaoming Jiang, Guozhi Chai, Satoshi Hiroi, Koji Ohara, Zongteng Zhang, Weijun Ren, Teng Yang, Jianshi Zhou, Sakata Osami, Jiaqing He, Dehong Yu, Bing Li, Zhidong Zhang, “Dimer rattling mode induced low thermal conductivity in an excellent acoustic conductor”, *Nature Communications*, 11, 5197 (2020).
2. Anjana M Samarakoon, Kipton Barros, Ying Wai Li, Markus Eisenbach, **Qiang Zhang**, Feng Ye, ZL Dun, Haidong Zhou, Santiago A Grigera, Cristian D Batista, D Alan Tennant, “Machine Learning Assisted Insight to Spin Ice Dy₂Ti₂O₇”, *Nature Communications*, 11, 892 (2020).
3. Laidong Zhou, Chun Yuen Kwok, Abhinandan Shyamsunder, **Qiang Zhang**, Xiaohan Wu, Linda Nazar, “A new halospinel superionic conductor for high-voltage all solid state lithium batteries”, *Energy & Environmental Science*, 13, 2056-2063, (2020).
4. Kern-Ho Park, Kavish Kaup, Abdeljalil Assoud, **Qiang Zhang**, Xiaohan Wu, Linda F Nazar, “High Voltage Superionic Halide Solid Electrolytes for All-Solid-State Li-Ion Batteries”, *ACS Energy Letters*, 5, 533, (2020).
5. Shang Gao, Ling-Fang Lin, Andrew F May, Binod K Rai, **Qiang Zhang**, Elbio Dagotto, Andrew D Christianson, Matthew B Stone, “Weakly-coupled alternating S=1/2 chains in the distorted honeycomb-lattice compound Na₂Cu₂TeO₆”, *Physical Review B (Rapid communications)*, **102**, 220402(R), (2020)
6. Sunil K Karna, D Tristant, JK Hebert, G Cao, R Chapai, WA Phelan, **Q Zhang**, Y Wu, C Dhital, Y Li, HB Cao, W Tian, CR Cruz, AA Aczel, O Zaharko, A Khasanov, MA McGuire, A Roy, W Xie, DA Browne, I Vekhter, V Meunier, WA Shelton, PW Adams, PT Sprunger, DP Young, R Jin, JF DiTusa, “Helical magnetic order and Fermi surface nesting in non-centrosymmetric ScFeGe”, *Physical Review B*, 103, 014443 (2020).
7. Shogo Wakazaki, Takumi Nishikubo, Yuki Sakai, Kei Shigematsu, Hena Das, Depei Zhang, **Qiang Zhang**, Masaaki Matsuda, Azuma, Masaki, “Stabilized charge, spin and orbital ordering by 6s² lone pair in Bi_{0.5}Pb_{0.5}MnO₃”, *Inorganic Chemistry*, 59, 13390, (2020).
8. C Dhital, D Pham, T Lawal, C Bucholz, A Poyraz, **Q Zhang**, R Nepal, R Jin, R Rai, “Crystal and Magnetic Structure of Polar Oxide HoCrWO₆”, *Journal of Magnetism and Magnetic Materials*, 514, 167219 (2020).
9. T Basu, FY Wei, **Q Zhang**, Y Fang, X Ke, “Complex magnetic structure in Ba₅Ru₃O₁₂ with isolated Ru₃O₁₂-trimer”, *Physical Review Materials*, 4, 114401 (2020).
10. Xiao Hu, Depei Zhang, Tianran Chen, Alexander Z Chen, Eric N Holmgren, **Qiang Zhang**, Daniel M Pajerowski, Mina Yoon, Guangyong Xu, Joshua J Choi, Seung-Hun Lee, “Crystal structures and rotational dynamics of a two-dimensional metal halide perovskite (OA)₂PbI₄”, *The Journal of Chemical Physics*, 152, 014703 (2020).
11. **Qiang Zhang**, Satoshi Okamoto, Matthew B Stone, Jinyu Liu, Yanglin Zhu, John DiTusa, Zhiqiang Mao, David Alan Tennant, “Influence of magnetism on Dirac semimetallic behavior in nonstoichiometric Sr_{1-y}Mn_{1-z}Sb₂ (y ~ 0.07, z ~ 0.02)”, *Physical Review B* 100, 205105, (2019)
12. **Q Zhang**, Z Diao, H Cao, A Saleheen, R Chapai, D Gong, S Stadler, R Jin, “Structure-Property Relationship in Layered BaMn₂Sb₂ and Ba₂Mn₃Sb₂O₂”, *Physical Review B* 99, 184416, (2019).
13. **Qiang Zhang**, Guixin Cao, Feng Ye, Huibo Cao, Masaaki Matsuda, DA Tennant, Songxue Chi, SE Nagler, WA Shelton, Rongying Jin, EW Plummer, Jiandi Zhang, “Anomalous magnetic behavior of Ba₂CoO₄ with isolated tetrahedra”, *Physical Review B*, 99, 094416, (2019).
14. G Cao+, **Q Zhang**+, M Frontzek, W Xie, D Gong, GE Sterbinsky, R Jin, “Structure, chromium vacancies, and magnetism in a new Cr_{12-x}Te₁₆ compound”, *Physical Review Materials* 3, 125001, (2019).
15. L Zhou, A Assoud, **Q Zhang**, X Wu, L Nazar, “A New Family of Argyrodite Thioantimonate Lithium Superionic Conductors”, *Journal of the American Chemical Society*, 141 (48), 19002-19013, (2020).

16. KM Taddei, LD Sanjeeva, J Xing, **Q Zhang**, D Parker, A Podleznyak, AS Sefat, “Tunable magnetic order in low-symmetry SeO_3 ligand linked $\text{Tm}_3(\text{SeO}_3)_3\text{H}_2\text{O}$ (TM=Mn, Co and Ni) compounds”, *Physical Review Materials*, 4, 024410, (2019).
17. G Sala, MB Stone, Binod K Rai, AF May, DS Parker, Gábor B Halász, YQ Cheng, G Ehlers, VO Garlea, **Q Zhang**, MD Lumsden, AD Christianson, “Crystal field splitting, local anisotropy, and low energy excitations in the quantum magnet YbCl_3 ”, *Physical Review B*, 100, 180406, (2019).
18. Mojammel A Khan, **Qiang Zhang**, Jin-Ke Bao, Randy S Fishman, Antia S Botana, Y Choi, G Fabbris, D Haskel, John Singleton, John F Mitchell, “Steplike metamagnetic transitions in a honeycomb lattice antiferromagnet $\text{Tb}_2\text{Ir}_3\text{Ga}_9$ ”, *Physical Review Materials*, 3, 114411, (2019).
19. J-Q Yan, **Q Zhang**, T Heitmann, ZL Huang, WD Wu, D Vaknin, BC Sales, RJ McQueeney, “Crystal growth and magnetic structure of MnBi_2Te_4 ”, *Physical Review Materials*, 3, 064202, (2019).
20. Laidong Zhou, Abdeljalil Assoud, Abhinandan Shyamsunder, Ashfia Huq, **Qiang Zhang**, Pascal Hartmann, Joern Kulisch, Linda F Nazar, “An Entropically Stabilized Fast-ion Conductor: $\text{Li}_{3.25}[\text{Si}_{1.25}\text{P}_{0.75}]\text{S}_4$ ”, *Chemistry of Materials*, 31, 7801, (2019).

2018 and previous years

1. J.Y. Liu †, J. Hu †, **Q. Zhang**†, D. Graf, H.B. Cao, S.M.A. Radmanesh, D.J. Adams, Y.L. Zhu, G.F. Cheng, X. Liu, W. A. Phelan, J. Wei, M. Jaime, F. Balakirev, D. A. Tennant, J. F. DiTusa, I. Chiorescu, L. Spinu and Z.Q. Mao*, “A magnetic topological semimetal $\text{Sr}_{1-y}\text{Mn}_{1-z}\text{Sb}_2$ ($y, z < 0.10$)”, *Nature materials*, 16, 905 (2017). (†These authors contribute equally to this work).

Highlighted by US DOE: <https://science.energy.gov/bes/highlights/2017/bes-2017-12-p/>

ORNL news: <https://www.ornl.gov/news/neutrons-reveal-wild-weyl-world-semimetals>

2. B. Li, H. Wang, Y. Kawakita, **Q. Zhang**, M. Feyngenson, H. L. Yu, D. Wu, K. Ohara, T. Kikuchi, K. Shibata, T. Yamada, X. K. Ning, Y. Chen, J. Q. He, D. Vaknin, R. Q. Wu, K. Nakajima and M. G. Kanatzidis, “Liquid-like thermal conduction in intercalated layered crystalline solids”, *Nature materials*, 17, 226–230 (2018).

ChemistryViews: http://www.chemistryviews.org/details/news/10838762/New_Type_of_Heat_Transfer.html

3. **Qiang Zhang**, Rafael M. Fernandes, Jagat Lamsal, Jiaqiang Yan, Songxue Chi, Gregory S. Tucker, Daniel K. Pratt, Jeffrey W. Lynn, R. W. McCallum, Paul C. Canfield, Thomas. A. Lograsso, Alan I. Goldman, David Vaknin, and Robert J. McQueeney*, “Neutron-Scattering Measurements of Spin Excitations in LaFeAsO and $\text{Ba}(\text{Fe}_{0.953}\text{Co}_{0.047})_2\text{As}_2$: Evidence for a Sharp Enhancement of Spin Fluctuations by Nematic Order”, *Physical Review Letters*, 114, 057001, (2015).
4. **Qiang Zhang**, Feng Ye, Wei Tian, Huibo Cao, Songxue Chi, Dalgis Mesa, Biao Hu, Zhenyu Diao, Rongying Jin, Jiandi Zhang, Ward Plummer, “Manganese-induced magnetic symmetry breaking and its correlation with the metal-insulator transition in bilayered $\text{Sr}_3(\text{Ru}_{1-x}\text{Mn}_x)_2\text{O}_7$ ”, *Physical Review B (rapid communications)*, 95, 220403(R), (2017).
5. **Qiang Zhang***, C. M. N. Kumar, Wei Tian, Kevin W. Dennis, Alan I. Goldman, and David Vaknin* “Structure and magnetic properties of LnMnSbO (Ln= La and Ce)”, *Physical Review B*, 93, 094413 (2016).
6. **Qiang Zhang***, Wei Tian, Spencer G. Peterson, Kevin W. Dennis, David Vaknin*, “Spin reorientation and Ce-Mn coupling in antiferromagnetic oxypnictide CeMnAsO ”, *Physical Review B*, 91, 064418 (2015).
7. **Qiang Zhang***, M. Ramazanoglu, Y. Liu, Thomas. A. Lograsso, D. Vaknin*, “Magnetic excitations and anomalous spin wave broadening in multiferroic FeV_2O_4 ”, *Physical Review B*, 89, 224416 (2014).
8. **Q. Zhang***, K. Singh, C. Simon, L. D. Tung, G. Balakrishnan, V. Hardy, “Impact of the various spin and orbital ordering processes on multiferroic properties of orthovanadate DyVO_3 ” *Physical Review B*, 90, 024418 (2014).
9. **Qiang Zhang***, Wei Tian, Haifeng Li, Jong-Woo Kim, Jiaqiang Yan, R. William McCallum, Thomas A. Lograsso, Jerel L. Zarestky, Sergey L. Bud'ko, Robert J. McQueeney, and David Vaknin*, “Magnetic structures and the Ce-Fe coupling induced Fe spin reorientation in CeFeAsO single crystal”, *Physical Review B*, 88, 174517, (2013).
10. **Qiang Zhang***, Wenjie Wang, Jong-Woo Kim, Benjamin Hansen, Ni Ni, Sergey L. Bud'ko, Paul C. Canfield, Robert J. McQueeney, David Vaknin*, “Magnetoelastic coupling and charge correlation lengths in a

- twin domain of $\text{Ba}(\text{Fe}_{1-x}\text{Co}_x)_2\text{As}_2$ ($x=0.047$): A high-resolution X-ray diffraction study”, *Physical Review B* 87, 094510 (2013).
11. **Q. Zhang***, K. Singh, F. Guillou, C. Simon, Y. Breard, V. Caignaert and V. Hardy, “Ordering process and ferroelectricity in a spinel derived from FeV_2O_4 ”, *Physical Review B*, 85, 054405 (2012).
 12. **Q. Zhang***, Y. Bréard, F. Guillou, and V. Hardy, “Investigation of the magnetocaloric effect in double distorted perovskites $\text{Ca}(\text{Cu}_{3-x}\text{Mn}_x)\text{Mn}_4\text{O}_{12}$ ($1 \leq x \leq 2$): From standard ferrimagnetism to glassy ferrimagnetism”, *Physical Review B*, **84**, 224430, (2011).
 13. R Nepal, **Q Zhang**, S Dai, W Tian, SE Nagler, R Jin, “Structural and magnetic transitions in spinel FeMn_2O_4 single crystals” *Physical Review B* **97**, 024410, (2018).
 14. F Guillou, **Q Zhang**, Z Hu, CY Kuo, YY Chin, HJ Lin, CT Chen, A Tanaka, LH Tjeng, V Hardy, “Coupled valence and spin state transition in $(\text{Pr}_{0.7}\text{Sm}_{0.3})_{0.7}\text{Ca}_{0.3}\text{CoO}_3$ ”, *Physical Review B* 74 172402 (2006).
 15. Chetan Dhital, Lisa DeBeer-Schmitt, **Qiang Zhang**, Weiwei Xie, David P. Young, John F. DiTusa, “Exploring the origins of the Dzyaloshinski-Moria interaction in MnSi ”, *Physical Review B* **96**, 214425 (2017).
 16. N. K. Sun, Y. B. Li, D. Li, **Q. Zhang**, W. J. Feng, and Z. D. Zhang. “The anomalous positive GMR effect in Polycrystalline $\text{Fe}_{0.75}\text{Mn}_{1.35}\text{As}$ ”, *Physical Review B* 74 172402 (2006).
 17. Y. B. Li, Y. Q. Zhang, N. K. Sun, **Q. Zhang**, D. Li, J. Li, and Z. D. Zhang, “Ferromagnetic semiconducting behavior of $\text{Mn}_{1-x}\text{Cr}_x\text{Te}$ compounds”, *Physical Review B* 72 193308 (2005).
 18. B. Roy, Abhishek Pandey, **Q. Zhang**, T. W. Heitmann, D. Vaknin, D. C. Johnston, Y. Furukawa*, “Experimental evidence of a collinear antiferromagnetic ordering in the frustrated CoAl_2O_4 spinel”, *Physical Review B* 88, 174415 (2013).
 19. **Q. Zhang**, C. H. Kim, Y. H. Jang, H. J. Hwang, and J. H. Cho*, “Multiferroic properties and surface potential behaviors in cobalt-doped BiFeO_3 film”, *Applied Physics Letters*. 96, 152901 (2010).
 20. **Q. Zhang***, F. Guillou, A. Wahl, Y. Bréard, and V. Hardy, “Coexistence of inverse and normal magnetocaloric effect in A-site ordered $\text{NdBaMn}_2\text{O}_6$ ”, *Applied Physics Letters*. 96, 242506 (2010).
 21. **Q. Zhang***, J. H. Cho, B. Li, W. J. Hu, and Z. D. Zhang, “Magnetocaloric effect in Ho_2In over a wide temperature range”, *Applied Physics Letters*. 94, 182501 (2009).
 22. S. Thota, **Q. Zhang**, F. Guillou, U. Lüders, N. Barrier, W. Prellier, A. Wahl, and P. Padhan, “Anisotropic magnetocaloric effect in all-ferromagnetic $(\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3/\text{SrRuO}_3)$ superlattices”, *Applied Physics Letters*. 97, 112506 (2010).
 23. B. Li, W.J. Ren, **Q. Zhang**; X. K. Lv, X. G. Liu, H. Meng, J. Li, D. Li, and Z. D. Zhang, “Magnetostructural coupling and magnetocaloric effect in Ni-Mn-In ”, *Applied Physics Letters*, 95, 172506 (2009).
 24. W. J. Hu, J. Du, B. Li, **Q. Zhang** and Z. D. Zhang, “Giant anomalous magnetocaloric effect in DySb Ising antiferromagnet”, *Applied Physics Letters* 92 (2008) 192505
 25. J. Du, W. B. Cui, **Q. Zhang**, S. Ma, D. K. Xiong, Z. D. Zhang, “Giant magnetocaloric effect in $\text{epsiv} - (\text{Mn}_{0.83}\text{Fe}_{0.17})_{3.25}\text{Ge}$ antiferromagnet”, *Applied Physics Letters*, 90, 42510-1-3, (2007).
 26. XG Liu, DY Geng, **Q Zhang**, JJ Jiang, W Liu, ZD Zhang, “Microstructure and magnetic properties of graphite-coated Gd nanocapsules”, *Applied Physics Letters* 94 (10), 103104-103104-3 (2009).
 27. N. K. Sun, S. Ma, **Q. Zhang**, J. Du, Z. D. Zhang, “Large room-temperature magnetocaloric effects in $\text{Fe}_{0.8}\text{Mn}_{1.5}\text{As}$ ”, *Applied Physics Letters*, 91, 112503 (2007)
 28. B. Li, J. Du, W. J. Ren, W. J. Hu, **Q. Zhang**, D. Li and Z. D. Zhang, “Large reversible magnetocaloric effect in Tb_3Co compound”, *Applied Physics Letters* 92, 242504 (2008).
 29. **Q Zhang***, S Thota, F Guillou, P Padhan, V Hardy, A Wahl and W Prellier, “Magnetocaloric effect and improved relative cooling power in $(\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3/\text{SrRuO}_3)$ superlattices”, *Journal of Physics: Condensed Matter (fast track communication)*, 23 052201, (2011).
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