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人才引进

博士后流动站

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教育背景

2010.09-2014.08

物理学博士, 香港科技大学, 香港, 中国

2006.09-2010.07

物理学学士, 重庆大学, 重庆, 中国

研究经历

2018.5-至今 重庆大学“百人计划”研究员

2015.4-2017.12 博士后, 卡尔斯鲁厄理工学院固体物理所, 德国

2014.9-2015.3 博士后, 香港科技大学物理系, 香港, 中国

2010.9-2014.8 博士, 香港科技大学物理系, 香港, 中国

研究兴趣及方向

1. 探索低维材料的新奇超导特性，如薄层二维超导材料、准一维超导链等
2. 探究强关联电子体系中的非常规超导特性，如铜基、铁基超导体中的向列相
3. 搜寻拓扑材料的奇异拓扑激发，如马约纳拉费米子、拓扑磁振子等

科研项目

1. 国家自然科学基金青年科学基金项目，向列超导体 $Nb_xBi_2Se_3$ 的应力调控及弹性模量研究，2020.01—2022.12，主持
2. 重庆市自然科学基金面上项目，拓扑向列超导体 $M_xBi_2Se_3$ 的超导序参量面内各向异性研究，2020-07—2023-06，主持
3. 中央高校基本科研业务费，薄膜量子自旋液体材料的电、磁场及应力调控研究，2020.01—2021.12，主持

代表性论文列表

自2011年为止在《Nature Communications》、《Physical Review Letters》、《Physical Review B》、《ACS Nano》等期刊上发表SCI论文30余篇，SCI他引次数500余次，h-index:12。

- 2020 Liran Wang, **Mingquan He**[#], Frédéric Hardy, Dai Aoki, Kristin Willa, Jacques Flouquet, and Christoph Meingast, 'Electronic Nematicity in URu_2Si_2 Revisited', *Physical Review Letters* **124**, 257601 (2020).
- 2019 Jing Wan, Congcong Wang, Qian Tang, Xiao Gu and **Mingquan He**^{*}, 'First-principles study of vanadium carbides as electrocatalysts for hydrogen and oxygen evolution reactions', *RSC Advances* **9**, 37467 (2019).
- 2019 Fangdong Tang, Peipei Wang, Peng Wang, Yuan Gan, G D Gu, Wei Zhang, **Mingquan He**^{*} and Liyuan Zhang, 'Quasi-2D superconductivity in $FeTe_{0.55}Se_{0.45}$ ultrathin film', *J. Phys.: Condens. Matter* **31**, 265702 (2019).
- 2019 Frédéric Hardy, **Mingquan He**[#], Liran Wang, Thomas Wolf, Peter Schweiss, Michael Merz, Maik Barth, Peter Adelman, Robert Eder, Amir-Abbas Haghighirad, and Christoph Meingast, 'Calorimetric evidence of nodal gaps in the nematic superconductor $FeSe$ ', *Physical Review B* **99**, 035157 (2019).
- 2018 Liran Wang^{*}, **Mingquan He**^{*}, Frédéric Hardy, Peter Adelman, Thomas Wolf, Michael Merz, Peter Schweiss and Christoph Meingast, 'Large nematic susceptibility in the re-entrant C_4 magnetic phase of $Ba_{1-x}Na_xFe_2As_2$ ', *Physical Review B* **97**, 224518 (2018).
- 2018 M. Yi, A. Frano, D. H. Lu, Y. He, M. Wang, B. Frandsen, A. F. Kemper, Y. Rong, Q. Si, L. Wang, **Mingquan He**, F. Hardy, P. Schweiss, P. Adelman, T. Wolf, M. Hashimoto, S.-K. Mo, Z. Hussain, M. Le Tacon, C. S. Nelson, A. E. Böhrer, D.-H. Lee, Z.-X. Shen, C. Meingast, and R. J. Birgeneau, 'Spectral Evidence for Emergent Order in $Ba_{1-x}Na_xFe_2As_2$ ', *Physical Review Letters* **121**, 127001 (2018)
- 2018 **Mingquan He**, Xiao Wang, Liran Wang, Frédéric Hardy, Thomas Wolf, Peter Adelman, Yixi Su and Christoph Meingast, 'Uniaxial and hydrostatic pressure effects in α - $RuCl_3$ single crystals via thermal-expansion measurements', *Journal of Physics: Condensed Matter* **30** 385702 (2018).
- 2018 **Mingquan He**, Liran Wang, Frédéric Hardy, Liping Xu, Thomas Wolf, Peter Adelman, and Christoph Meingast, 'Evidence for short-range magnetic order in the nematic phase of $FeSe$ from anisotropic in-plane magnetostriction and susceptibility measurements', *Physical Review B* **97**, 104107 (2018).
- 2017 **Mingquan He**, Liran Wang, Felix Ahn, Frédéric Hardy, Thomas Wolf, Peter Adelman, Jörg Schmalian, Ilya Eremin, and Christoph Meingast, 'Dichotomy between in-plane magnetic susceptibility and resistivity anisotropies in extremely strained $BaFe_2As_2$ ', *Nature Communications* **8**, 504(2017).
- 2017 Chi Ho Wong, Leung Yuk Frank Lam, Junying Shen, **Mingquan He**, Xijun Hu and Rolf Lortz, 'The role of the coherence length for the establishment of global phase coherence in arrays of ultra-thin superconducting nanowires', *Supercond. Sci. Technol.*, **30**, 10(2017)
- 2016 F. Hardy, A. E. Böhrer, L. de' Medici, M. Capone, G. Giovannetti, R. Eder, L. Wang, **Mingquan He**, T. Wolf, P. Schweiss, R. Heid, A. Herbig, P. Adelman, R. A. Fisher, and C. Meingast, 'Strong correlations, strong coupling, and s-wave superconductivity in hole-doped $BaFe_2As_2$ single crystals', *Physical Review B* **94**, 205113 (2016).
- 2016 **Mingquan He**, Q. L. He, J. Y. Shen, Y. Zheng, C. H. Wong, Q. H. Chen, J. N. Wang, K. T. Law, I. K. Sou, A. P. Petrovic, R. Lortz, 'Pseudogap and proximity effect in the $Bi_2Te_3/Fe_{1+y}Te$ interfacial superconductor', *Scientific Reports* **6**, 32508(2016).
- 2015 **Mingquan He**, Dian Shi, Pok Lam Tse, Chi Ho Wong, Oliver Wybranski, Ernst-Wilhelm Scheidt, Wolfgang Scherer, Ping Sheng, and Rolf Lortz, '1D to 3D Dimensional Crossover in the Superconducting Transition of the Quasi-One-Dimensional Carbide Superconductor Sc_3CoC_4 ', *J. Phys.: Condens. Matter* **27**, 075702(2015).
- 2015 Qing Lin He, **Mingquan He**, Junying Shen, Ying Hoi Lai, Yi Liu, Hongchao Liu, Hongtao He, Gan Wang, Jiannong Wang, Rolf Lortz and Iam Keong Sou, 'Anisotropic magnetic responses of a 2D-superconducting $Bi_2Te_3/FeTe$ heterostructure', *J. Phys.: Condens. Matter* **27**, 345701(2015).
- 2015 Zefei Wu, Yu Han, Jiangxiazhi Lin, Wei Zhu, **Mingquan He**, Shuiguang Xu, Xiaolong Chen, Huanhuan Lu, Weiguang Ye, Tianyi Han, Yingying Wu, Gen Long, Junying Shen, Rui Huang, Lin Wang, Yuheng He, Yuan Cai, Rolf Lortz, Dangsheng Su, and Ning Wang, 'Detection of interlayer interaction in few-layer grapheme', *Physical Review B* **92**, 075408(2015).

- 2015 M. Younas, Junying Shen, **Mingquan He**, R. Lortz, Fahad Azad, M. J. Akhtar, A. Maqsood and F. C. C. Ling, 'Role of multivalent Cu, oxygen vacancies and CuO nanophase in the ferromagnetic properties of ZnO:Cu thin films', RSC Adv. **5**, 55648(2015).
 - 2015 X. L. Wang, Q. Shao, A. Zhuravlyova, **Mingquan He**, Y. Yi, R. Lortz, J. N. Wang & A. Ruotolo, 'Giant negative magnetoresistance in Manganese-substituted Zinc Oxide' Scientific Reports **6**, 9221(2015).
 - 2014 **Mingquan He**, 'Investigation of Superconducting Properties in Low Dimensional Superconductors', PhD thesis, The Hong Kong University of Science and Technology.
 - 2014 Qing Lin He, Hongchao Liu, **Mingquan He**, Ying Hoi Lai, Hongtao He, Gan Wang, Kam Tuen Law, Rolf Lortz, Jian-Nong Wang and Iam Keong Sou, 'Two-dimensional superconductivity at the interface of a Bi₂Te₃/FeTe heterostructure', Nature Communications **5**, 4247 (2014).
 - 2014 Gan Wang, Qing Lin He, Hong-Tao He, Hong-Chao Liu, **Mingquan He**, Jian-Nong Wang, Rolf Lortz, George Ke Lun Wong, Iam Keong Sou, 'Formation Mechanism of Superconducting Fe_{1+x}Te/Bi₂Te₃ Bilayer Synthesized via Interfacial Chemical Reactions', Cryst. Growth Des. **14**, 3370 (2014).
 - 2013 **Mingquan He**, Chi Ho Wong, Pok Lam Tse, Yuan Zheng, Haijing Zhang, Frank L. Y. Lam, Ping Sheng, Xijun Hu and Rolf Lortz, "Giant" enhancement of the upper critical field and superconducting fluctuations above the bulk T_c in superconducting ultra-thin Pb nanowire arrays', ACS Nano **7**, 4187 (2013).
 - 2012 W. Shi, Z. Wang, Q. Zhang, Y. Zheng, C. Ieong, **Mingquan He**, R. Lortz, , Y. Cai, N. Wang, T. Zhang, H. J. Zhang, Z. K. Tang, Ping Sheng, H. Muramatsu, Y. A. Kim, M. Endo, P. T. Araujo, and M. S. Dresselhaus, 'Superconductivity in Bundles of Double-Wall Carbon Nanotubes, Scientific Reports **2**, 625 (2012).
 - 2011 Jing Xu, Chenguo Hu, Huayong Han, **Mingquan He**, Buyong Wan, Chuanhui Xia, and Yongshu Tian, 'Synthesis and Photoelectric Properties of V₃O₇•H₂O and V₃O₇ Nanobelts', Journal of Nanoscience and Nanotechnology **11**, 10829(2011).
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