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个人简介



郭光华

教授, 博士生导师。1988年毕业于吉林大学物理系, 获理学学士和硕士学位; 1999年毕业于莫斯科大学物理系, 获数理博士学位。1999年至今在中南大学物理与电子学院从事科研与教学工作。2000年评为教授, 2004年评为博士生导师, 2013年晋升为二级教授。担任中国固体物理研究会常务理事、湖南省物理学会常务理事, 国家科技奖励评审专家, 国家自然科学基金、高校博士点科研基金和多个省、市自然科学基金评审专家, 《中南大学学报(自然科学版)、(英文版)》和《现代物理》编委, “固体物理”国家精品课程和国家精品资源共享课程负责人, Appl. Phys. Lett., Phys. Rev. B等国内外科学期刊的审稿人。主要从事磁学和自旋电子学研究, 主持多项国家级和省部级科研项目, 发表学术论文100多篇。

欢迎同学们报考我的博士、硕士研究生。

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科研方向

主要研究领域:

1. 纳米磁学, 磁性材料
2. 自旋电子学及自旋器件
3. 低维体系的电子结构、自旋结构和自旋输运

主持的部分科研项目:

1. 可重构的磁构型磁子晶体及其动态调控。国家自然科学基金(11674400), 2017-2020。
2. 磁子自旋流驱动的畴壁动力学研究。国家自然科学基金(11374373), 2014-2017。
3. 自旋纳电子材料的微磁结构和反磁化机制的研究。国家自然科学基金(60571043), 2006-2008。
4. 全磁子畴壁自旋器件的关键问题研究。湖南省自然科学基金重点项目(13JJ2004), 2013-2015。
5. 纳米线畴壁动力学研究。教育部, 博士点基金-博导类(20120162110020), 2013-2015。
6. 反铁磁耦合多层膜体系磁性的微磁学研究。湖南省自然科学基金重点项目(07JJ3103), 2007-2009。

学术成果

发表的主要论文(*为通讯作者)

- Xi-guang Wang, Zhen-wei Zhou, Yao-zhuang Nie, Qing-lin Xia, Guang-hua Guo*. Self-consistent study of local and non-local magnetoresistance in YIG / Pt bilayer. Phys. Rev. B 97, 094401 (2018)
- Xi-guang Wang, Zhi-xiong Li, Zhen-wei Zhou, Yao-zhuang Nie, Qing-lin Xia, Zhong-ming Zeng, L. Chotorlishvili, J. Berakdar, and Guang-hua Guo*. Conversion of electronic to magnonic spin current at a heavy-metal magnetic-insulator interface. Phys. Rev. B 95, 020414(R) (2017)
- Yaozhuang Nie*, Mavlanjan Rahman, PeiLiu, Aihemaitijiang Sidike, Qinglin Xia, and Guanghua Guo*. Room Temperature Half-Metallicity in Monolayer Honeycomb Structures of Group-V Binary Compounds with Carrier doping. Phys. Rev. B 96, 075401 (2017)
- Wei Tang, Zhen-wei Zhou, Yao-zhuang Nie, Qing-lin Xia, Zhong-ming Zeng, Guang-hua Guo*. Spin wave modes of width modulated Ni80Fe20 / Pt nanostrip detected by spin-orbit torque induced ferromagnetic resonance. Appl. Phys. Lett. 111, 172407 (2017)
- Xi-guang Wang, Alexander Sukhov, Levan Chotorlishvili, Chenglong Jia, Guang-hua Guo, Jamal Berakdar. Electrically driven magnetic antenna based on multiferroic composites. Journal of Physics: Condensed Matter. 29, 095804 (2017)
- Xi-guang Wang, Levan Chotorlishvili, Guang-hua Guo, and Jamal Berakdar. Generation of open-circuit spin current on GHz scale in structured Pt/YIG by electric fields. J. Phys. D: Appl. Phys. 50,

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- Mavlanjan Rahman, Ke-chao Zhou, Qing-lin Xia, Yao-zhuang Nie, Guang-hua Guo*. Spin-dependent transport properties of zigzag phosphorene nanoribbons with oxygen-saturated edges. *Phys. Chem. Chem. Phys.* 19, 25319 - 25323 (2017)
- Mavlanjan Rahman, Ke-chao Zhou, Yao-zhuang Nie, Guang-hua Guo*. Electronic structure and magnetism of layered compounds SrBO₂ (B = Ni, Co, Mn): A theoretical investigation. *Solid State Communications* 266, 6-10 (2017)
- Zhi-xiong Li, Yi-fu Chen, Zhen-wei Zhou, Yao-zhuang Nie, Qing-lin Xia, Dao-wei Wang, Guang-hua Guo*. Creation of skyrmion through resonance excitation. *J. Magn. Magn. Mater.* 433, 216-221 (2017)
- Pei Liu, Yao-zhuang Nie, Qing-lin Xia, and Guang-hua Guo*. Structural and Electronic Properties of Arsenic Nitrogen Monolayer. *Physics Letters A.* 381, 1102-1106 (2017)
- Can Zou, Jia Sun*, Guangyang Gou, Ling-An Kong, Chuan Qian, Guozhang Dai, Junliang Yang, and Guang-hua Guo*. Polymer-electrolyte gated nanowire synaptic transistors for neuromorphic applications. *Appl. Phys. A* 123, 596 (2017)
- Daowei Wang*, Yan Zhou, Zhi-xiong Li, Yaozhuang Nie, Xi-guang Wang, Guang-hua Guo*. Magnonic band structure of domain wall magnonic crystals. *IEEE Trans. Magn.* 53 (3), 1300110 (2017)
- X.-G. Wang, L. Chotorlishvili, G.-H. Guo, A. Sukhov, V. Dugaev, J. Barna, and J. Berakdar. Thermally induced magnonic spin current, thermomagnonic torques and domain wall dynamics in the presence of Dzyaloshinskii-Moriya interaction. *Phys. Rev. B* 94, 104410 (2016)
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- Xi-guang Wang, Guang-hua Guo*, Yao-zhuang Nie, D. Wang, Qing-lin Xia, Wei Tang, Zhong-ming Zeng. Steady-state domain wall motion driven by adiabatic spin-transfer torque with assistance of microwave field. *Appl. Phys. Lett.* 103, 262408(2013)
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