

Accepted Manuscript

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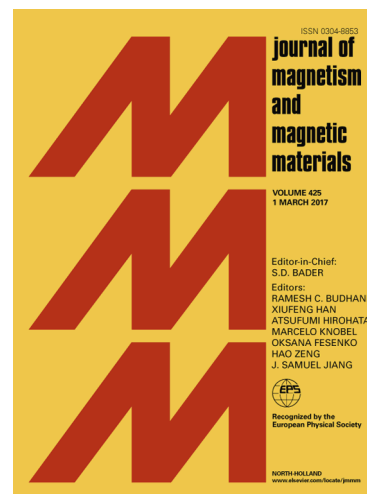
PII: S0304-8853(17)32954-2
DOI: <https://doi.org/10.1016/j.jmmm.2018.01.016>
Reference: MAGMA 63594

To appear in: *Journal of Magnetism and Magnetic Materials*

Received Date: 16 September 2017
Revised Date: 16 December 2017
Accepted Date: 6 January 2018

Please cite this article as: M. Pan, P. Li, W. Qiu, J. Zhao, J. Peng, J. Hu, J. Hu, W. Tian, Y. Hu, D. Chen, X. Wu, Z. Xu, X. Yuan, The anisotropic tunneling behavior of spin transport in graphene-based magnetic tunneling junction, *Journal of Magnetism and Magnetic Materials* (2018), doi: <https://doi.org/10.1016/j.jmmm.2018.01.016>

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The anisotropic tunneling behavior of spin transport in graphene-based magnetic tunneling junction

Mengchun Pan¹, Peisen Li^{1*}, Weicheng Qiu¹, Jianqiang Zhao¹, Junping Peng¹, Jiafei Hu¹, Jinghua Hu¹, Wugang Tian^{1*}, Yueguo Hu¹, Dixiang Chen¹, Xuezhong Wu¹, Zhongjie Xu² and Xuefeng Yuan³

¹College of Mechatronic Engineering and Automation, National University of Defense Technology, Changsha, Hunan, China, 410073

²College of Optoelectronic Science and Engineering, National University of Defense Technology, Changsha, Hunan, China, 410073

³National Supercomputer Center in Guangzhou, Guangzhou, China, 510000

*Corresponding author: e-mail lips13@163.com

**Corresponding author: e-mail twg_1978@163.com

ABSTRACT

Due to the theoretical prediction of large tunneling magnetoresistance (TMR), graphene-based magnetic tunneling junction (MTJ) has become an important branch of high-performance spintronics device. In this paper, the non-collinear spin filtering and transport properties of MTJ with the Ni/tri-layer graphene/Ni structure were studied in detail by utilizing the non-equilibrium Green's formalism combined with spin polarized density functional theory. The band structure of Ni-C bonding interface shows that Ni-C atomic hybridization facilitates the electronic structure consistency of graphene and nickel, which results in a perfect spin filtering effect for tri-layer graphene-based MTJ. Furthermore, our theoretical results show that the value of tunneling resistance changes with the relative magnetization angle of two

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