

Yabei Wu

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Personal Information

Citizenship: China
Date of Birth: 1990.07.18
Birth Place: ZhuMaDian, Henan Province

Education Background

Visiting Student: Department of Physics, University at Buffalo, the State University of New York, 2017.12~2018.05, Supervisor, [Peihong Zhang](#).

Visiting Student: Department of Physics, University at Buffalo, the State University of New York, 2015.09~2017.09, Supervisor, [Peihong Zhang](#).

Ph.D: Condensed Matter Physics, Shanghai University, 2012.09~2018.12, Supervisor, [Wei Ren](#).

B.Sc: Electronic Information Science and Technology, Shanghai University, 2008.08-2012.07

Research Experience

Based the density functional theory and the quasi-particle approximation, we investigate the electronic structures of the newly emerged low dimensional materials, such as graphene, black/blue phosphorus, tin selenide (SnSe), tin monoxide (SnO), CN systems, and so on. The strain engineering is also proved to be an effective method to tune the electronic structures of materials, and furthermore, has great effect on the phase transition and the other properties.

I'm also familiar with the density functional code (VASP, Quantum Espresso, PARATEC), Phonopy, BerkeleyGW, and programming language, such as Python, Fortran, Shell Script.

Awards

2009 Excellent Student of Shanghai University
2009 The Second Class Scholarship of Shanghai University
2011 National Endeavor Fellowship
2012 Excellent Graduate of Shanghai University

Research Project Participation

National Natural Science Foundation of China "Structure and Control of Multiferroic Materials at Nanoscale" 2013-2016, Participation

Domestic and international academic conferences:

- 1) 2013.07.10-2013.07.27, Nanjing University, Summer school for condensed matter physics and 2013 International Workshop of Emergent Electronic Materials and Device Physics.
- 2) 2013.09.12-2013.09.16, Xiamen University, [China Physical Society Fall Meeting](#), Poster Section.
- 3) 2014.06.10-2014.06.13, Shanghai University, [2014 International Workshop of Emergent Electronic Materials and Devices Physics](#).
- 4) 2014.10.10-2014.10.12, Chinese Academy of Sciences Institute of Applied Physics, Colloquium on Surface, Interface and New Energy Materials.
- 5) 2014.10.23-2014.10.27, Luoyang Normal University, [The 2nd Workshop on CALYPSO \(Crystal structure AnaLYsis by Particle Swarm Optimization\)](#).
- 6) 2015.01.21-2015.01.23, Shanghai University, [2015 International Workshop on Low-Energy States in Photosynthesis](#).
- 7) 2016.03.14-2016.03.18, Baltimore, 2016 American Physics Society March Meeting. [Oral Presentation](#)
- 8) 2017.03.13-2017.03.17, New Orleans, 2017 American Physics Society March Meeting. [Oral Presentation](#)
- 9) 2017.10.31-2017.11.01, Nanjing, China, The 20th Asian Workshop on First-Principles Electronic Structure Calculations.
- 10) 2017.11.12-2017.11.15, Haikou, China, The 7th International Workshop on Quantum Energy.
- 11) 2018.03.05-2018.03.09, Los Angeles, 2018 American Physics Society March Meeting. [Oral Presentation](#)
- 12) 2018.09.13-2018.09.16, Dalian University of Technology, [China Physical Society Fall Meeting](#).
- 13) 2018.10.17-2018.10.19, Kunming, China, [The 8th International Workshop on Quantum Energy](#).

Published and Submitted Papers:

- 1, Shunbo Hu, Lei Chen, **Yabei Wu**, Liming Yu, Xinluo Zhao, Shixun Cao, Jincang Zhang, and Wei Ren*, [Selected multiferroic perovskite oxides containing rare earth and transition metal elements](#). Chinese Science Bulletin, 59, 5170 (2014).
- 2, Xiaolong Chen, Lin Wang, Yingying Wu, Heng Gao, **Yabei Wu**, Guanhua Qin, Zefei Wu, Yu Han, Shuigang Xu, Tianyi Han, Weiguang Ye, Jiangxiazhi Lin, Gen Long, Yuheng He, Yuan Cai, Wei Ren and Ning Wang*, [Probing the electronic states and impurity effects in black phosphorus vertical heterostructures](#). 2D Materials, 3, 015012(2016).
- 3, Ya Yang, **Yabei Wu**, Baojuan Kang, Zhenjie Feng, Jincang Zhang, Wei Ren*, Shixun Cao*, [Doping induced dimensionality reduction of the magnetic order in DyFe_{1-x}In_xO₃](#). Journal of Alloys and Compounds, 695, 1699 (2017).
- 4, **Yabei Wu**, Weiyi Xia, Weiwei Gao, Wei Ren*, Peihong Zhang*, [Engineering the near-edge electronic structure of SnSe through strains](#). Physical Review Applied, 8,

034007 (2017). (**Editors' Suggestion**)

5, Ya Yang, Jihua Zhang, Shunbo Hu, **Yabei Wu**, Jincang Zhanga, Wei Ren*, and Shixun Cao*, [First-principles study of Ga-vacancy induced magnetism in \$\beta\$ -Ga₂O₃](#). Physical Chemistry Chemical Physics, 19, 28928 (2017).

6, Weiwei Gao, Weiyi Xia, **Yabei Wu**, Wei Ren, Xiang Gao, and Peihong Zhang*, [Quasiparticle Band Structures of CuCl, CuBr, AgCl, and AgBr: The extreme case](#). Physical Review B, 98, 045108 (2018).

7, **Yabei Wu**¹, Weiyi Xia¹, Weiwei Gao, Fanhao Jia, Peihong Zhang*, and Wei Ren*, [Quasiparticle electronic structure of honeycomb C₃N: from monolayer to bulk](#). 2D Materials, 6, 015018 (2019).

8, Chao Liu, Tao Hu, **Yabei Wu**, Heng Gao, Yali Yang, and Wei Ren*, [Two-dimensional selenium allotropes from first principles and swarm intelligence](#). Journal of Physics: Condensed Matter, accepted.

9, Yajuan Zhang¹, Weiyi Xia¹, **Yabei Wu**, and Peihong Zhang*, [Prediction of MXene based 2D tunable band gap semiconductors: GW quasiparticle calculations](#). Nanoscale, accepted.

¹ means co-first author.