

# Dan Wang

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## Education

2011-2017 **Ph.D.** in Physical Electronics, Jilin University, China

2007-2011 **B.E.** in Electronic Science and Technology, Jilin University, China

## Research Interests

- Defect physics
- Electronic structure
- Optical properties

## Publications

1. **Dan Wang**, D. Han, X.-B. Li, S.-Y. Xie, N.-K. Chen, W. Q. Tian, D. West, H.-B. Sun, and S. Zhang, *Determination of formation and ionization energies of charged defects in two-dimensional materials*, **Phys. Rev. Lett.** 114, 196801 (2015). <https://doi.org/10.1103/PhysRevLett.114.196801>
2. **Dan Wang**, D. Han, X.-B. Li, S.-Y. Xie, N.-K. Chen, W. Q. Tian, S. Zhang, and H.-B. Sun, *Possible n/p-type conductivity of two-dimensional graphene oxide by boron and nitrogen doping: evaluated via constrained excitation*, **Appl. Phys. Lett.** 109, 203113 (2016). <http://dx.doi.org/10.1063/1.4967981>
3. **Dan Wang**, X.-B. Li, D. Han, W. Q. Tian, and H.-B. Sun, *Engineering two-dimensional electronics by semiconductor defects*, **Nano Today** 16, 30 (2017). <https://doi.org/10.1016/j.nantod.2017.07.001>
4. **Dan Wang**, D. Han, X.-B. Li, N.-K. Chen, D. West, V. Meunier, S. Zhang, and H.-B. Sun, *Charged defects in two-dimensional semiconductors of arbitrary thickness and geometry: formulation and application to few-layer black phosphorus*, **Phys. Rev. B** 96, 155424 (2017). <https://doi.org/10.1103/PhysRevB.96.155424>
5. **Dan Wang**, X.-B. Li, and H.-B. Sun, *Native defects and substitutional impurities in two-dimensional monolayer InSe*, **Nanoscale** 9, 11619 (2017). <http://dx.doi.org/10.1039/C7NR03389C>
6. **Dan Wang**, D. Han, X.-B. Li, N.-K. Chen, S.-Y. Xie, D. West, W. Q. Tian, V. Meunier, H.-B. Sun, and S. Zhang, *Low-energy excitation to defect-bound band edge states in two-dimensional semiconductors and its effect on carrier transport* (Submitted) 2018.
7. F.-C. Pang, **Dan Wang**, N.-K. Chen, S.-Y. Xie, X. Meng, C.-S. Huo, H. Yang, X.-P. Su, W.-Q. Wang, and H.-L. Tu, *First-principles simulations of local structure contrast for liquid  $Ge_1Sb_2Te_4$ ,  $Ge_2Sb_2Te_5$ , and  $Ge_4Sb_1Te_5$  alloys*, **Comput. Mater. Sci.** 61, 287 (2012). <https://doi.org/10.1016/j.commatsci.2012.04.044>
8. S.-Y. Xie, X.-B. Li, W.-Q. Tian, **Dan Wang**, N.-K. Chen, D. Han, and H.-B. Sun, *Slide fastener reduction of graphene-oxide edges by calcium: insight from ab initio*

*molecular dynamics*, **ChemPhysChem** 15, 2707 (2014).  
<http://doi.org/10.1002/cphc.201402057>

9. L. Guo, Y.-L. Zhang, D.-D. Han, H.-B. Jiang, **Dan Wang**, X.-B. Li, H. Xia, J. Feng, Q.-D. Chen, and H.-B. Sun, *Laser-mediated programmable N-doping and simultaneous reduction of graphene oxides*, **Adv. Opt. Mater.** 2, 120 (2014).  
<http://doi.org/10.1002/adom.201300401>
10. L. Wang, Z. Wang, H.-Y. Wang, G. Grinblat, Y.-L. Huang, **Dan Wang**, X.-H. Ye, X.-B. Li, Q. Bao, A.-S. Wee, S. A. Maier, Q.-D. Chen, M.-L. Zhong, C.-W. Qiu and H.-B. Sun, *Slow cooling and efficient extraction of C-exciton hot carriers in MoS<sub>2</sub> monolayer*, **Nat. Commun.** 8, 13906 (2017).  
<http://doi.org/10.1038/ncomms13906>

## Conference Presentations

1. **Dan Wang**, D. West, S. Zhang, H.-B. Sun, and X.-B. Li, *Charged defects in two-dimensional semiconductors of arbitrary thickness and geometry: formulation and application to few-layer black phosphorus*, The 21<sup>st</sup> National Semiconductor Physics Conference, Jul. 2017, Nanjing, China. (**Oral**)
2. **Dan Wang**, X.-B. Li, D. West, H.-B. Sun, and S. Zhang, *The evaluation of charged defects in two-dimensional materials*, 33<sup>rd</sup> International Conference on the Physics of Semiconductors, Aug. 2016, Beijing, China. (**Oral**)
3. **Dan Wang**, X.-B. Li, D. West, H.-B. Sun, and S. Zhang, *Determination of formation and ionization energies of charged defects in two-dimensional materials*, 2015 Materials Research Society Fall Meeting, Dec. 2015, Boston, USA. (**Poster**)
4. **Dan Wang**, X.-B. Li, D. West, H.-B. Sun, and S. Zhang, *Evaluation of charged defects in two-dimensional materials*, The 5th International Workshop on Quantum Energy, Oct. 2015, Hangzhou, China. (**Poster**)
5. **Dan Wang**, X.-B. Li, D. West, H.-B. Sun, and S. Zhang, *Charged defects evaluation in two-dimensional semiconductors*, The 20<sup>th</sup> National Semiconductor Physics Conference, Jul. 2015, Shanxi, China. (**Invited**)
6. **Dan Wang**, Xian-Bin Li, and Hong-Bo Sun, *Evaluation of Charged Defect Energy in Lower-dimension Solids*, The 2<sup>nd</sup> International Workshop on Ultrafast Laser Optoelectronics, Jul. 2014, Changchun, China. (**Poster**)