Nanoscale Horizons

ROYAL SOCIETY OF CHEMISTRY

CORRECTION

View Article Online
View Journal | View Issue

Cite this: *Nanoscale Horiz.*, 2020, 5, 1544

DOI: 10.1039/d0nh90052d

rsc.li/nanoscale-horizons

Correction: Two-dimensional polar metal of a PbTe monolayer by electrostatic doping

Tao Xu,*[a] Jingtong Zhang,[b] Yuquan Zhu,[a] Jie Wang,*[b] Takahiro Shimada,[c] Takayuki Kitamura[c] and Tong-Yi Zhang*[a]

Correction for 'Two-dimensional polar metal of a PbTe monolayer by electrostatic doping' by Tao Xu *et al.*, *Nanoscale Horiz.*, 2020, **5**, 1400–1406, DOI: 10.1039/D0NH00188K.

Regrettably, the authors have detected an error in the value of the polarization of the pristine PbTe monolayer in the original manuscript. The polarization is shown incorrectly as 29.2×10^{-10} C m^{-1} in the text on page 3. The correct value is 15 pC m^{-1}. This value is larger than that of some other 2D ferroelectrics[1,2] with the same out-of-plane polarization but is smaller than the reported in-plane polarization of about 100 pC m^{-1} in ultrathin ferroelectric SnTe[3] due to the strong depolarization field in out-of-plane ferroelectrics. Due to this error, the parameters $\frac{Z^{*2}}{\varepsilon_\infty a_0^3}$ and J in the effective Hamiltonian model for PbTe in Table S1 and the energy contributions in the Hamiltonian in Fig. 4 in the original manuscript should also be modified accordingly. The updated Table S1 and Fig. 4 are given below.

Table S1 Parameters in the effective Hamiltonian model for PbTe with different doping densities

Density	$\frac{Z^{*2}}{\varepsilon_\infty a_0^3}$	κ_2	α_2	$B_{11}+B_{12}$	B_{1zz}	J
−0.05	4.8044×10^{-4}	−0.01165	0.13562	66.960	4.3731	−0.18615
0.00	4.7725×10^{-4}	−0.04647	0.12631	65.575	4.3122	−0.11882
0.05	4.7436×10^{-4}	−0.03488	0.12368	64.853	4.3277	−0.11031
0.10	4.7325×10^{-4}	−0.02829	0.11930	63.835	4.2724	−0.10134

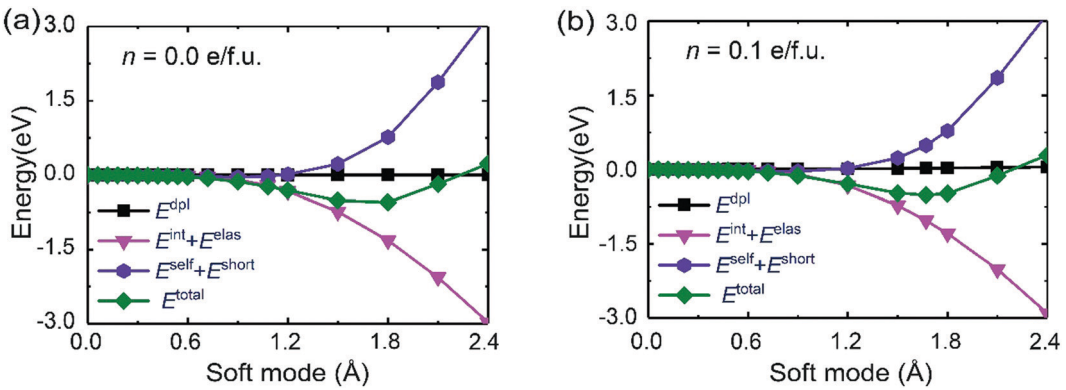

Fig. 4 Energy contributions in the Hamiltonian during the phase transition in the PbTe monolayer at densities of (a) n = 0 and (b) n = 0.10 e f.u.$^{-1}$

[a] *Materials Genome Institute, Shanghai University, Shanghai 200444, China. E-mail: xutao6313@shu.edu.cn*
[b] *Department of Engineering Mechanics, School of Aeronautics and Astronautics, Zhejiang University, Hangzhou 310027, China. E-mail: jw@zju.edu.cn*
[c] *Department of Mechanical Engineering and Science, Kyoto University, Nishikyo-ku, Kyoto 615-8540, Japan*

It should be noted that these changes do not affect the discussion, conclusions and the proposed new concept of the manuscript.

The Royal Society of Chemistry apologises for these errors and any consequent inconvenience to authors and readers.

References

1 J. Qi, H. Wang, X. Chen and X. Qian, *Appl. Phys. Lett.*, 2018, **113**, 043102.
2 A. Samad, H. J. Kim and Y. H. Shin, *J. Phys.: Condens. Matter*, 2018, **31**, 045301.
3 K. Chang, J. Liu, H. Lin, N. Wang, K. Zhao, A. Zhang, F. Jin, Y. Zhong, X. Hu, W. Duan, Q. Zhang, L. Fu, Q.-K. Xue, X. Chen and S. H. Ji, *Science*, 2016, **353**, 274.