

Supplementary Information for

Prediction of ferrovalley property with sizable valley splitting in Janus monolayer GdBrI

Jianping Zhang,[†] Yaping Wang,[‡] Qian Xia,[†] Miaojuan Ren,[†] Peiji Wang,[†] Changwen Zhang,[†] Shengshi Li,^{†*} Weixiao Ji^{†*}

[†] *Spintronics Institute, School of Physics and Technology, University of Jinan, Jinan, 250022, China.*

[‡] *State Key Lab of Crystal Materials and Institute of Crystal Materials, Shandong University, Jinan 250100, China.*

* Corresponding authors

E-mail: sdy_liss@ujn.edu.cn

E-mail: hellojiweixiao@163.com.

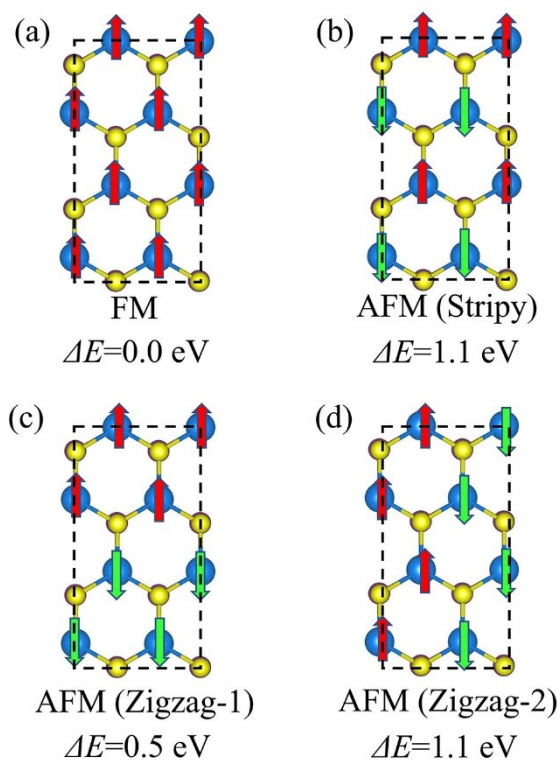


Fig. S1 Diagrammatic sketches and relative energies of the FM configuration and three AFM configurations for the monolayer GdBrI.

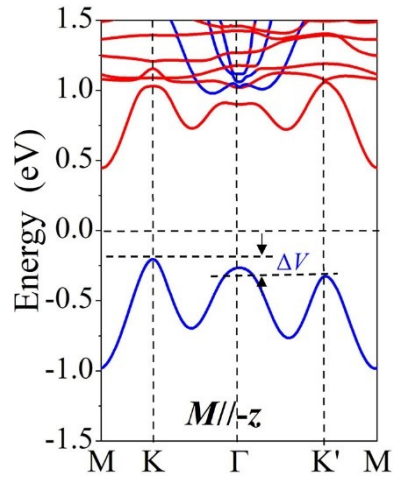


Fig. S2 Calculated SOC band structure of the GdBrI with magnetization orientation along the $-z$ direction.

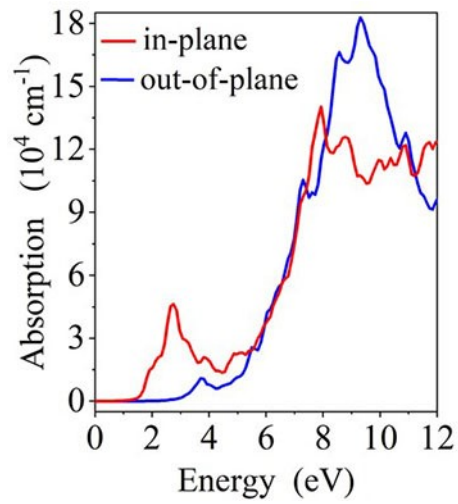


Fig. S3 Optical absorption spectrum obtained using HSE06 functional for the monolayer GdBrI.