Supporting information for

**Electro-optical properties of a strain-induced borocarbonitride monolayer from many-body perturbation theory**

Jia Wan, Haibin Wang, Huabing Shu*

*School of Science, Jiangsu University of Science and Technology, Zhenjiang 212001, China

*E-mail: shuhuabing@just.edu.cn

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**Fig. S1** Band structure of graphene at PBE level, in which $2 \times 2$ supercell has been considered.

**Fig. S2** Phonon spectra of C$_6$BN monolayer under different compressive strains: (a) -1%, (b) -3%.
Fig. S3 (a) Optimized structures of C$_6$BN and C$_3$B monolayers. The rhombus shows the unit cell. (b) Phonon spectrum of C$_3$B monolayer.