

Abstract Submitted
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Tune the electronic and phonon properties of silicene and germanene through biaxial strain and electric field JIA-AN YAN, RYAN STEIN, GREGORY COARD, Department Of Physics, Astronomy, and Geosciences, Towson University, 8000 York Road, Towson, Md 21252, USA — We presented a density-functional study of the effects of biaxial strain and perpendicular electric field on the electronic and phonon properties of the two-dimensional (2D) silicene and germanene sheets. The two factors can be applied along the parallel and perpendicular directions independently, and therefore increase the tunability on the electronic band structure and phonon properties in these 2D systems. Important quantities such as the Grüneisen parameters will be calculated.

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