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Planar Nanoscale Capacitors from Laterally Stacked Graphene - Boron Nitride Layers V. ONGUN OZCELIK, ENGIN DURGUN, SALIM CIRACI, Bilkent University — We propose a nanoscale planar capacitor model consisting of laterally stacked two-dimensional insulating BN layers placed between two commensurate and metallic graphene layers. First-principles calculations of structure optimized total energy and self-consistent field potential performed on these nanoscale capacitors for different levels of charging and different number of BN layers mark the values of capacitance per unit mass, which are larger than those measured values for the supercapacitors made from other carbon based materials.

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