

Abstract Submitted
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Band Engineering in C/BN Nanoribbons and Stacks JEFFREY MULLEN, MARCO BUONGIORNO NARDELLI, North Carolina State University — Using electronic structure calculations from first principles we have studied the electronic characteristics of graphene/BN sheets in planar “super-striped” and layered stacks geometries. Similarly to Hydrogen-terminated graphene nanoribbons, C/BN super-stripes and stacks show a variation of band gaps. Moreover, the bonding with BN introduces confinement effects that can be potentially exploited to enhance the electronic transport properties of these systems. We have characterized these effects by evaluating the band offsets and the electrostatic potential profile across the structures.

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