

Abstract Submitted
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Self-Folding With Graphene Bimorphs MARC MISKIN, KYLE DORSEY, PETER ROSE, ITAI COHEN, PAUL MCEUEN, Cornell University — We have developed a new technique that let us program two layer stacks, or bimorphs, made of graphene and ultra-thin films to self-fold via differential stress. Our approach works in the extreme regime of bimorph folding: we construct bimorphs that optimize folding efficiency when one layer is atomically thin. The resulting devices controllably fold to micron sized radii of curvature. By applying this technique in concert with lithographic patterning, we have produced a powerful platform to build three dimensional structures at the nanoscale. We demonstrate that this approach is intrinsically scalable and facilitates the construction of both fixed 3d structures and actuation.

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