

Abstract Submitted
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Direct CVD Growth of Monolayer Graphene on Exfoliated BN on SiO₂ HAN SAE JUNG, HSIN-ZON TSAI, University of California, Berkeley, ERIK PIATTI, Politecnico di Torino, KACEY MEAKER, JAIRO VELASCO, ALEX ZETTL, MICHAEL CROMMIE, University of California, Berkeley, CROMMIE GROUP TEAM, ZETTL GROUP COLLABORATION — Graphene on BN exhibits exceptionally high charge carrier mobility, which makes it promising for future device applications. However, current CVD methods of growing graphene on a catalytic metal surface require a chemical transfer process onto BN substrate, which introduces polymers and etchants that can contaminate the surface of pristine graphene. Here, we present a method for directly growing graphene on BN, a non-catalytic surface. This method not only eliminates the undesirable transfer process, but also successfully grows clean graphene with well-defined edges. We performed Raman spectroscopy and atomic force microscopy, which showed a high coverage of monolayer graphene with low D peak and single hexagonal graphene domains of sub-micron size.

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