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**Morphology and Electrical Characterization of Reduced Epitaxial Graphene Oxide** YIKE HU, XIAOSONG WU, MICHAEL SPRINKLE, NERASOA MADIOMANANA, MING RUAN, CLAIRE BERGER, WALTER DE HEER, Georgia Institute of Technology — We present results for on-chip oxidation of epitaxial graphene and sequential reduction of the insulating graphene oxide layers. In our previous work , we have used the Hummer's method to oxidize epitaxial graphene and used electron beam exposure and heat treatment to reduce the epitaxial graphene oxide (EGO) band gap by changing the degree of oxidation. Here we further explore various oxidation and reduction methods on epitaxial graphene. EGO is characterized by atomic force microscopy, low-energy electron diffraction, ellipsometry, and Raman Spectrometry. Mobility measurements of patterned structures are presented where epitaxial graphene layers pads are seamlessly connected to EGO ribbons.

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