

Abstract Submitted
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Atomic-scale measurements of graphene nanoribbon edge properties PATRICK HAN, Tohoku Univ, KATSUYA IWAYA, RIKEN, SUSUMU SHIRAKI, NAOKI ASAO, TARO HITOSUGI, Tohoku Univ, PAUL WEISS, UCLA — Graphene edges are predicted to be a type of defects that can be utilized to tailor both the electronic and the magnetic properties of graphene structures. However, to date, there is little experimental result on how graphene size and structure affect these edge properties. For this purpose, we fabricate defect-free graphene nanoribbons (GNRs) by self-assembly of organic precursor molecules on a Cu(111) single-crystal surface in ultrahigh vacuum. We use low-temperature scanning tunneling microscopy to image and measure the electronic properties of these ribbons, comparing GNR edges and centers. We discuss the results of our fabrication process and of our local spectroscopic measurements of individual GNRs.

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