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Properties of anisotropically etched graphene devices C.M. REYNOLDS, A. ROBERTS, A.S. SANDHU, B.J. LEROY, University of Arizona — Mechanically exfoliated graphene on a SiO2 substrate was etched using a solution of nickel nanoparticles. Using an atomic force microscope, etch lines 10 nm in width were observed. In addition, etch lines made angles of only 60 and 120 degrees and did not cross one another indicating that the etching occurs along a crystallographic edge. This resulted in structures such as equilateral triangles and nanoribbons as narrow as 35 nm wide. We have investigated these devices using Raman spectroscopy and scanning tunneling spectroscopy to determine the quality of the crystallographic edges and the local electronic properties.

Collin Reynolds
University of Arizona

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