

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

High-Resolution Nanofabrication Using a Highly-Focused Electron Beam THOMAS AREF, UIUC, MIKAS REMEIKA, UCSD, MATTHEW BRENNER, ALEXEY BEZRYADIN, UIUC — Carbon nanotubes and metallic nanowires have unusual and potentially useful electrical transport properties. Local control of the parameters of such nano-objects would open even wider possibilities for their applications. We have used the highly focused, high-energy electron beam of a transmission electron microscope to locally modify such nano-objects. In particular, it was possible to drill 2.5 nm diameter nanoholes in multiwall carbon nanotubes (MWNT's). Similarly sized holes were etched through metallic nanowires. We have also fabricated larger nanoholes, as large as 11 nm wide in a 26 nm diameter MWNT, as well as constrictions in MWNT's. Transport measurements of such nanodevices is our future goal.

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Date submitted: 26 Nov 2007

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