

Abstract Submitted  
for the MAR10 Meeting of  
The American Physical Society

**Device fabrication with precisely placed carbon nanotubes of known chiral vector** CHRISTOPHER ALLEN, MARK ELKIN, University of Leeds, CAN ZHANG, Cambridge University, STEPHAN HOFMANN, Cambridge University, GAVIN BURNELL, University of Leeds, JOHN ROBERTSON, Cambridge University, BRYAN HICKEY, University of Leeds — The electrical properties of single walled carbon nanotubes are strongly dependent on their precise atomic configuration and as such it is of great importance to be able to fabricate devices containing individual carbon nanotubes of known structure. We have developed a novel technique that allows for the determination of the chiral indices of an individual carbon nanotube followed by the precise placement of the tube onto pre-patterned electrodes. Carbon nanotubes are grown by chemical vapour deposition onto perforated TEM grids. Electron diffraction is performed on individual carbon nanotubes, the analysis of which reveals their structure. The desired carbon nanotube is then manipulated inside a combined STM-SEM system and placed with high precision onto pre-patterned electrodes.

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Date submitted: 20 Nov 2009

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