

Abstract Submitted  
for the MAR05 Meeting of  
The American Physical Society

**Adsorbed monolayers on individual single-walled carbon nanotubes** ZENGHUI WANG, JIANG WEI, MICHAEL SHIMOGAWA, OSCAR VILCHES, DAVID COBDEN — We have built devices and apparatus to search for the effects of adsorbed monolayers on electrical transport through single-walled carbon nanotubes. The nanotubes, grown by chemical vapor deposition, are contacted by shadow evaporation for cleanliness, and placed in a controlled pressure and temperature environment where an external magnetic field can be applied. We concentrate on atoms and molecules which are likely to influence the electronic properties. Our eventual aim is to extend earlier work on the two-dimensional phases of matter on pyrolytic graphite to the nearly one-dimensional regime presented by cylindrical monolayers on a nanotube surface. We report preliminary results on oxygen, which is thought to dope nanotubes, and which exhibits magnetic order in low temperature 2D monolayers.

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Date submitted: 01 Dec 2004

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