

Abstract Submitted  
for the DFD05 Meeting of  
The American Physical Society

**Carbon Nanotube-Based Devices and the Study of Fluid Transport through Them**<sup>1</sup> HAIM BAU, University of Pennsylvania — Experimental data pertaining to liquid transport through carbon nanotubes with diameters ranging from a few to hundreds of nanometers is briefly reviewed. A hybrid fabrication technique of carbon nanotube-based devices is described. The fabrication technique combines dielectrophoretic positioning of nanotubes and photolithography. The devices facilitate the introduction and control of fluid flow through the carbon nanotubes. Preliminary experimental results pertaining to capillary filling of, condensation in, evaporation from, particle flow into, and ionic current transmission through the nanotubes are discussed and compared with theoretical predictions. Although many of the observations indicate that the liquids behave classically, a few observations are still puzzling and await explanation. Finally, electron microscopy of controlled liquid flow is proposed as a new paradigm in fluid physics.

<sup>1</sup>This work was funded by the National Science Foundation through grant NSF-NIRT 0210579

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Date submitted: 01 Sep 2005

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