Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Fabrication of Sub-Micron, Multi-Channel, Single Walled Carbon Nanotube Devices GEORGE TULEVSKI, IBM T.J. Watson Research Center, ALI AFZALI, AARON FRANKLIN, IBM T.J. WATSON RESEARCH CENTER TEAM — Single-Walled Carbon Nanotubes (SWCNTs) possess exceptional electronic properties making them leading candidates for future device technologies. The current bottleneck for integration of SWCNTs is the limitations of the processing techniques available to address challenges such as selective placement, doping and differing electronic types. This talk will focus on using chemical methods to address these challenges. SWCNTs are first purified using a step-gradient and then chemically modified to reduce the contribution of the metallic species. The SWCNTs are then assembled into trenches to induce alignment of the SWCNTs. Devices containing multiple SWCNTs are then fabricated with sub-micron channel lengths. The device properties and effects of the chemical processes are evaluated.

George Tulevski
IBM T.J. Watson Research Center

Date submitted: 20 Nov 2009 Electronic form version 1.4