

Abstract Submitted  
for the MAR10 Meeting of  
The American Physical Society

**Physical Properties of Carbon Nanotube Sheets Dry-Drawn from Tall MWCNT Forests** JULIA BYKOVA, Nanotech Institute, UTD, Richardson, TX 75083, WILLIAM HOLMES, Solarno Inc., Coppell, TX 75019, ANVAR ZAKHIDOV, Nanotech Institute, UTD, Richardson, TX 75083 — Highly aligned MWCNT forests can be grown by catalytic CVD process in a dry-spinnable highly oriented form which allows to draw CNT sheets and twist spin yarns [1,2]. However the sheet resistance of such transparent CNT sheets with average height of 300  $\mu\text{m}$  is quite high: 500-700  $\text{Ohm}/\text{sq}$ . Motivation of our study is to grow taller forests with optimal interbundle connectivity [3] which may result in lower sheet resistance of CNT sheets and higher optical transparency by optimized control of CCVD conditions. We have succeeded to grow tall CNT forest with  $h=1 \mu\text{m}$  and resulting sheet resistance about 200  $\text{Ohm}/\text{sq}$ . To find the correlation between properties of CNT forests and CNT sheets we conducted SEM analysis combined with Raman, AFM and small-angle X-ray scattering. This study shows how the number, geometry, and mechanical strength of interconnects between bundles are related to the physical properties of CNT sheets.

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- [2] M.Zhang, K.Atkinson, R.Baughman, Science, V.306 (2004) 1358
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Date submitted: 15 Dec 2009

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