

Abstract Submitted
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Optical anisotropy of transparent multiwalled carbon nanotube sheets JULIA BYKOVA, University of Texas at Dallas, Richardson, Texas, YAKOV LESNICHII, ALEKSEY ARSENIN, DMITRY FEDYANIN, Moscow Institute of Physics and Technology, Moscow, Russia, JONATHON SMITH, University of Texas at Dallas, Richardson, Texas, WILLIAM HOLMES, Solarno Inc., Irving, Texas, ANVAR ZAKHIDOV, University of Texas at Dallas, Richardson, Texas; Solarno Inc., Irving, Texas — Replace this text with your abstract body. The oriented carbon nanotube (CNT) sheets absorb polarized light anisotropically depending on its relative orientation to the incident light. Oriented aerogel of multi-walled carbon nanotubes (MWNT) created by dry-drawing of spinnable CNT forests has been shown to be a relatively good polarizer [1] even at high temperatures [2]. In this presentation it is shown how the qualitative factor of polarization (QFP) depends on the CVD synthesis conditions and CNT sheets process. The optimized QFP of MWNT sheet is found to be 2-3 times higher than reported before for CNT-based polarizers. Systematic characterization by UV-Vis spectroscopy, ellipsometry combined with SEM showed how the polarization properties can be improved by annealing, stretching and electrical field, which enhance the anisotropy of MWCNT sheets. This work is supported by AFOSR grant FA 9550-09-10384 and AFRL/Rice grant via CONTACT consortium of Texas. [1] M. Zhang et al., Science, 309 (2005) 1215 [2] A. Aliev et al. Phys Let A, 372 (2008) 4938

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