

Abstract Submitted  
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**Probing Magnetic Susceptibility Anisotropy of Large-Diameter Armchair Carbon Nanotubes via Magnetic Linear Dichroism Spectroscopy** ERIK HAROZ, JUNICHIRO KONO, Rice University, Dept. of ECE, THOMAS SEARLES, Morehouse Univ., Dept. of Physics, XIAOMIN TU, MING ZHENG, JEFFREY FAGAN, National Institute of Standards & Technology, Polymer Division, STEPHEN MCGILL, DMITRY SMIRNOV, National High Magnetic Field Laboratory — We studied magnetic susceptibility anisotropy, via magnetic linear dichroism spectroscopy, of aqueous suspensions of single-walled carbon nanotubes in high magnetic fields up to 22T using a unique magnet system (Split-Florida Helix magnet). Specifically, we measured magnetic susceptibility anisotropies,  $\Delta\chi$ , of several armchair species ranging from (5,5)-(13,13) at room temperature over an excitation wavelength range of 400-900 nm. For large diameter armchairs such as (12,12) and (13,13), we have observed some of the strongest alignment in a static magnetic field due to their large diameters. Results will be discussed in comparison with detailed calculations involving the Aharonov-Bohm effect.

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