

Abstract Submitted
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Linear Dichroic Cell Based on Magnetic Alignment of Carbon Nanotubes Y. J. LEE, J. SHAVER, S. ZARIC, J. KONO, Rice University, Houston, TX 77005 — Single-walled carbon nanotubes align with a magnetic field due to their anisotropic magnetic properties. A simple yet sensitive setup utilizing a balance detector has been constructed to study the alignment of micelle-suspended single-walled carbon nanotubes. We present alignment data in response to static and dynamic magnetic fields. The results of our ensemble measurements show that the amount of signal change depends on the strength and frequency of the applied magnetic field, thus allowing us to determine the minimum field required to align single-walled carbon nanotubes. This data can then be analyzed to characterize the physical parameters of the carbon nanotubes and to determine information about the time scale of the alignment process and local environment.

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