

Abstract Submitted
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Absorption measurements of very low quantities of graphite microfibers and nanofibers MICHAEL BOERGERT, New Mexico State University — In order to determine the absorption coefficients of graphite microfibers, a He-Ne laser incorporating a 2-D photoacoustic system was used. In this system particles were deposited through fluid suspension onto polycarbonate filters. One objective was to determine if the absorption coefficient of vapor-grown microfibers as well as of three size distributions of nanofibers could be measured in areal densities as low as a single fiber in a focused beam. Although measuring single vapor-grown microfibers was deemed not possible with this equipment, the mass density limit was approximately 20 ng/cm^2 for a beam of approximately 2100 microns in diameter, giving about 690 pg or several thousand fibers in the beam spot. However, if the beam were fully focused, it would have a diameter of approximately 310 microns, which would correspond to about 15 pg or approximately 100 particles in the beam. The absorption coefficient analysis was then extended to three size distributions of graphite nanotubes. The mass normalized absorption cross sections were determined from measurements of absorption vs. areal mass density on filters. Calibration was done by using the published value for soot.

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