

Abstract Submitted
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Separation of Single-Walled Carbon Nanotubes by Density using Isopycnic Fractionation¹ MICHAEL CLEMENS, Brigham Young University, TOBIAS HERTEL, Vanderbilt University — Single-Walled Carbon Nanotubes (SWNT) have attracted a significant amount of attention due in part to their nanoscale size and their optical and electrical properties. Research has shown that these properties can vary drastically with a sub-nanometer difference in SWNT diameters. Recent developments in SWNT synthesis have given rise to research towards the separation and characterization of SWNTs by diameter. I report a separation of SWNTs by diameter, and thus density, through micelle suspension and ultracentrifugation in density gradients prepared with iodixanol and water. The isopycnic layers produced by the ultracentrifugation were extracted using a fractionation method. I measure the degree of separation through absorption spectroscopy and photoluminescence spectroscopy of these fractions.

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