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Phonon-Phonon Interaction In Carbon Nanotube Assemblies. ALI ALIEV, MEI ZHANG, ANVAR ZAKHIDOV, RAY BAUGHMAN, Nanotech Institute, University of Taxes at Dallas, Richardson, TX 75083 — We present the comparative study of the anisotropic 1D thermal conductivity and the thermal diffusivity of assemblies of carbon nanotubes (CNTs) comprising an increasing number of aligned free standing carbon nanotubes (SWNT and MWNT) using two techniques: laser flash and self-heating 3ω methods. The concept of mode quenching is considered for alignment of few individual CNTs. The length dependence of thermal conductivity is studied for CNT with different number of intrinsic defects (HiPCO, Laser ablation, Arc-Charge). The extremely high surface area of CNT assemblies like highly aligned MWNT sheet [1] leads to the excessive radial radiation of the heat and dose not allow to transfer the heat energy by means of phonons to distances more than 2 mm. [1]. M. Zhang, S. Fang, A. A. Zakhidov, S. B. Lee, A. E. Aliev, C. D. Williams, K. R. Atkinson, R. H. Baughman, *Science* **309**, 1215 (2005).

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