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Aspects of the Thermal Conductivity of Nanotubes CHIH-WEI CHANG, ADAM FENNIMORE, ANDERI AFANASIEV, DAVID OKAWA, TAKASHI IKUNO, HENRY GARCIA, ALEX ZETTL, Physics department, University of California at Berkeley and Materials Science Division, Lawrence Berkeley National Laboratory, DEYU LI, Department of Mechanical Engineering, Vanderbilt University, Tennessee, ARUN MAJUMDAR, Department of Mechanical Engineering, University of California at Berkeley — We have measured the thermal conductivity of individual multiwalled carbon and boron nitride nanotubes using a microfabricated suspended device. The structure of the measured nanotubes also has been characterized by using a transmission electron microscope. We have found that the thermal conductivity of an isotopically pure BN nanotube is comparable to that of a carbon nanotube with the same diameter. The temperature dependence, the effect of deformation, and localized defects on the nanotubes' thermal transport will also be presented.

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