

Abstract Submitted
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Thermal conductivity of vertically-aligned single-walled carbon nanotube film measured by 3ω method¹ KEI ISHIKAWA, The University of Tokyo, SABURO TANAKA, KOJI MIYAZAKI, Kyushu Institute of Technology, JUNICHIRO SHIOMI, SHIGEO MARUYAMA, The University of Tokyo — Single-walled carbon nanotubes (SWNTs) have been expected to have extremely high thermal conductivity. However, the previously reported modeling and experimental works using individual SWNTs are too idealistic for the vertically-aligned single-walled carbon nanotube (VA-SWNT) film, in terms of defects, bundling effects, etc. In this work, we measured thermal conductivity of high purity VA-SWNT film synthesized by alcohol catalytic chemical vapor deposition (ACCVD) method [1]. We utilize thin film 3ω method for measuring thermal properties by depositing metal directly onto the VA-SWNT film. In the course of probing the intrinsic thermal conductivity, we discuss the effect of thermal boundary resistances at the nanotube-metal and nanotube-substrate boundaries. [1] Y. Murakami et al., Chem. Phys. Lett., 385 (2004), 298.

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Kei Ishikawa
The University of Tokyo

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