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Thermal Conductance Measurement of Metal-CNT Composites using Micro-Sized Suspended Structure KI SUNG SUH, JUNG HOON BAK, BYUNG YANG LEE, SEUNGHUN HONG, YUN DANIEL PARK, FPRD Department of Physics and Astronomy, Seoul National University, Seoul 151-747, Korea — As CNTs have a unique structure and remarkable physical properties, CNT composites have attracted much attention from many researchers. Especially the thermal properties of CNTs and their composite materials have been studied intensively, because CNT has very good thermal transport properties [1-5]. For example, thermal conductivity of CNT is known to be much larger than that of metals such as Ag, Au, Cu and Al. To study the thermal conductance of metal-CNT composites, we have fabricated the micro-sized suspended structures. By using e-beam lithography and metallization, two thermometers have been patterned on the GaAs substrates. Thermal links made of metal or metal-CNT composite also have been patterned between the two thermometers. Then GaAs substrate has been under-etched to form suspended structures. We will show the fabrication methods and measurement scheme using these microstructures. * parkyd@phya.snu.ac.kr [1] J.A. Eastman *et al.*, Appl. Phys. Lett. **78**, 718 (2001). [2] S.U.S. Choi *et al.*, Appl. Phys. Lett. **79**, 2252 (2001). [3] M.J. Biercuk *et al.*, Appl. Phys. Lett. **80**, 2767 (2002). [4] R. Ramasubramaniam *et al.*, Appl. Phys. Lett. **80**, 4647 (2003). [5] H.Q. Xia *et al.*, Appl. Phys. Lett. **94**, 4967 (2003).

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