

Abstract Submitted
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Self-assembled Monolayers of Carbon Nanotubes and Their Properties VLADIMIR SAMUILOV, JASEUNG KOO, Department of Materials Science, SUNYSB, JEAN GALIBERT, Laboratoire National des Champs Magnetiques Pulses, VITALY KSENEVICH, NIKOLAJ POKLONSKI, Department of Physics, State University of Belarus — Electronic and thermal transport properties of carbon nanotubes are of particular interest due to their potential use as components in nano electronics applications. Applications of the *individual* nanotubes are progressing rapidly. However, the electrical and thermal conductivity transport properties of the 2-D layers still fall far short of the properties of the individual carbon nanotubes. We have developed a new method of self-assembling of carbon nanotubes (CNT) into high-density 2-D arrays without prior functionalization based on modified Langmuir-Blodgett technique. The method shows several major advantages over the conventional method of CNT monolayers formation. The electrical, thermal conductivity and magneto-transport properties of the monolayers (arrays) of multi-wall and single-wall carbon nanotubes in the temperature range 1.8-300K and in magnetic fields up to 35 T have been tested. Gas sensing properties of the self-assembled arrays of CNTs are discussed.

Vladimir Samuilov
Department of Materials Science, SUNYSB

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