

## Electrical Transport Behavior of Superconductor-CNT-Superconductor Junction

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Carbon Nanotube (CNT) is a good candidate for validating 1-D quantum transport phenomenon. However, proximity effects of CNT near the superconducting materials are not fully understood and the existence of proximity induced super-current in the Superconductor-CNT-Superconductor (SC-CNT-SC) junction is still questionable. We dispensed single wall CNTs using chemical solvent *i.e.* Sodium Dodecyl Sulfate (SDS) on the SiO<sub>2</sub>/Si substrate and used Nb or Al as superconducting electrodes by e-beam lithography techniques. We observed I-V characteristics of various SC-CNT-SC junctions, which have either metallic or semi-conducting electronic properties of CNTs. We also discussed transport properties of junctions depending on the distance between electrodes, the numbers and transparencies of CNT which are hooked in the SC-CNT-SC junctions.

Keywords : CNT, e-beam lithography, proximity effect