

# Nanocomposites and nanomaterials

## Electronic properties of defects carbon nanotubes

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In work [1] was shown that in MCNT positrons are admire defects with short-pipe whose size (0.5-0.6 nm) is twice the value of the interlayer distance.

Radius localization wave functions of electrons in them twice than the interlayer spacing [2]. For more defective array MCNT, the lower the density transition is in a leading position, and vice versa. For SCNT, containing the fewest defects it is largest state and for the most defective tubes – the most-less. This means that most defective tubes have the "loose" structure in which current flow occurs at a lower density of CNT array. This is consistent with the results of [2].

During cyclic deformation CNT array containing edge dislocations, are targeted and ordering nanotubes, and the dependence of conductivity of array density, there are a two-stage jumping conductivity by several orders, combined step. They are caused by the action of three mechanisms: increasing number of contacts and their total area, elastic deformation swirled into a spiral or circle (radius of 100-1000 nm) nanotubes and the changing nature of electron transfer at points of tangency of the tunnel to the semiconductor and metal

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2. *Нищенко, Е.А. Цапко, Ю.В. Лисунова, Г.П. Приходько, Н.И. Даниленко Электронно-позитронная аннигиляция в углеродных нано-трубках / М.М. // Перспективные материалы. – 2010. – № 5. – С. 86-92.*