

Field-emission from vertically-aligned multi-walled carbon nanotube films doped by different elements

Zoya Kosakovskaya,¹ Alexander Iarochenko² and
Sergey Matyunin¹

¹Institute of Radioengineering and Electronics of RAS
Mokhovaya str., 11
Moscow 101999
Russia

²Nanotech Innovations Corp.
87 Scollard St.
Toronto, On M5r 3B9
Canada

Due to the unique geometrical and the physical properties of carbon nanotubes have been subject of increasing scientific interest.. This studies of field emission has indicated that nanotube films hold great potential as a successful material for cathodes of flat screen monitors having low voltage and small power or others a various electronic devices. Many works has been done toward an insight into the correlation between emission properties of carbon nanotubes , their structures and consequently their electronic structure [1-2]. Authors this studies presume that nanotubes haven't dopants. However it is known that nanotubes can be self-doped by material of substrate [3]. It can be cause that the observed values of threshold voltage of field emission from nanotubes are differ for various publications.

It is known that the dopants can have as a different localization into multi-walled nanotubes (MWNT) as a different distribution lengthwise nanotube. The dopant site can be as into enclosure of MWNT such as between their walls. It can be a reason to change electronic structure of nanotubes and to have a consequence to change their emission properties. In this work the field emission from MWNT films doped by Al, Si, Ni, and Li was studied. The results of our study will be discussed.

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