

electrophysical measurements were applied. Our results show that the interaction between DNA or oligonucleotides and MWCNTs was ascribed to the strong π - π -- interactions between the backbones of DNA or oligonucleotides and the surface of carbon nanotubes.

The binding of nanotubes with fluorescent oligonucleotides allows the MWCNT to function as a "nanoquencher" of the fluorophore FAM. This functionality of MWCNT-oligonucleotide complex is demonstrated by agarose gel electrophoresis assay. It is proposed to use the thin LB-films of oligonucleotide/MWCNT complexes as a biosensing nanocoating based on nucleic acids.

Dielectric behavior of C6 rat glioma cell monolayer growing on CNT- and Ce-contained nanostructured LB-films

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Capacity characteristics of C6 rat glioma cell monolayer growing on the surface of interdigital sensors has been investigated. Sensor electrodes have biosensitive dielectric nanostructured coating which contains cerium ions (Ce) and modified by carboxyl groups multiwall carbon nanotubes (CNT) and has been formed utilizing Langmuir-Blodgett technology. Dielectric analysis of the structure of electrically and functionally active near-electrodes medium with C6 rat glioma cells has been performed. Pulse oscillations of capacity of sensors with cellular monolayer according to non-zero capacity level Ce have been found using method of impedance dielectric spectroscopy. Observed capacity oscillations are due to changes of transmembrane potential following a functioning of ion channels. In the frequency range from 5 to 45 kHz a dependence of sensor capacity oscillation amplitude on the frequency of applied field is of a bell-shaped form with a maximum being closed to 20 kHz. But frequency of capacity oscillations does not depend on the frequency of applied field. It has been established that amplitude and frequency of oscillations and a value of the level Ce depend on a phase of cellular growth and composition of buffer medium.

Miniaturized conformal printed antennas for wireless communication based on chaotic transceiver: design and comparative analysis

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Current trend for miniaturization of wireless communication devices imposes more and more stringent restrictions on dimensions of the antennas. In this paper the concept of using conformal printed antennas for wireless communication