

RESISTANCE-BASED BIOSENSOR OF MULTI-WALLED CARBON NANOTUBES

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□ Multi-Walled Carbon Nanotubes (MWNTs) are a good choice for resistive biosensors due to their great resistance changes when immunoreactions take place, they are also low-cost, more biocompatible than single-walled carbon nanotubes, and resistive measurement equipment is usually not expensive and readily available. In this work a novel resistive biosensor based on the immobilization of an antigen through a silanization process over the surface of Multi-Walled Carbon Nanotubes (MWNTs) is reported. Results show that the biosensor increases its conductivity when adding the antigen and decreases when adding the antibody making them good candidates for disease diagnosis.

Keywords biosensor, multi-walled carbon nanotubes, resistive sensor

INTRODUCTION

The early detection of pathogens plays a crucial role in the prevention of disease spread. The most sensitive and specific assay diagnosis for infectious disease are the laboratory-based polymerase chain reaction (PCR) or Enzyme-Linked ImmunoSorbent Assay (ELISA) methods.^[1,2] However, the methods mentioned above are costly, time consuming, and

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