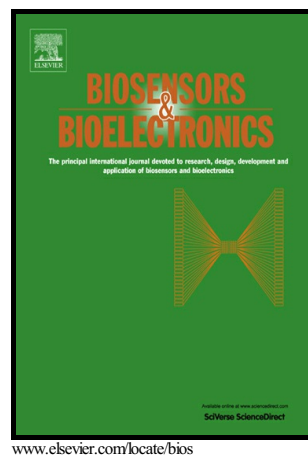


Highly selective, reusable electrochemical impedimetric DNA sensors based on carbon nanotube/polymer composite electrode without surface modification

Huaide Jiang, Eun-Cheol Lee



PII: S0956-5663(18)30531-1
DOI: <https://doi.org/10.1016/j.bios.2018.07.037>
Reference: BIOS10626

To appear in: *Biosensors and Bioelectronic*

Received date: 14 May 2018
Revised date: 2 July 2018
Accepted date: 16 July 2018

Cite this article as: Huaide Jiang and Eun-Cheol Lee, Highly selective, reusable electrochemical impedimetric DNA sensors based on carbon nanotube/polymer composite electrode without surface modification, *Biosensors and Bioelectronic*, <https://doi.org/10.1016/j.bios.2018.07.037>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Highly selective, reusable electrochemical impedimetric DNA sensors based on carbon nanotube/polymer composite electrode without surface modification

Huaide Jiang,^{a,c} Eun-Cheol Lee^{a,b,c,*}

^a*Department of Nano Science and Technology, Gachon University, Gyeonggi 13120, Republic of Korea*

^b*Department of Nano-Physics, Gachon University, Gyeonggi 13120, Republic of Korea*

^c*Gachon Bio-Nano Research, Gachon University, Gyeonggi 13120, Republic of Korea*

*Corresponding author at: Gachon University, Department of Nano-Physics, 1342

SeongnamDaero, Sujeong-Gu, Seongnam, Gyeonggi 13120, Republic of Korea. Tel.: +82 31 750 8752; Fax: +82 31 750 8769. *E-mail address:* elee@gachon.ac.kr (E.-C. Lee).

Abstract

We fabricated a composite of multi-walled carbon nanotube and polydimethylsiloxane and utilized it as an electrode for DNA sensing using electrochemical impedance spectroscopy. Without any surface modification or probe immobilization, often necessary for other electrodes, this electrode also acts as a recognition layer for DNA via π - π interactions between the multi-walled carbon nanotube and DNA. This electrode is easily reusable via a simple cleansing process, because there are no

Download English Version:

<https://daneshyari.com/en/article/7228908>

Download Persian Version:

<https://daneshyari.com/article/7228908>

[Daneshyari.com](https://daneshyari.com)