



# Hybridization-induced interfacial changes detected by non-Faradaic impedimetric measurements compared to Faradaic approach

Submitted by Christelle Gautier on Tue, 04/28/2015 - 11:46

Titre	Hybridization-induced interfacial changes detected by non-Faradaic impedimetric measurements compared to Faradaic approach
Type de publication	Article de revue
Auteur	Gautier, Christelle [1], Esnault, Charles [2], Cougnon, Charles [3], Pilard, Jean-François [4], Casse, Nathalie [5], Chénais, Benoît [6]
Editeur	Elsevier Masson
Type	Article scientifique dans une revue à comité de lecture
Année	2007
Langue	Anglais
Date	Jan-12-2007
Numéro	2
Pagination	227-233
Volume	610
Titre de la revue	Journal of Electroanalytical Chemistry
ISSN	15726657
Mots-clés	DNA sensor [7], Electrochemical impedance spectroscopy [8], Label-free detection [9], Polythiophene [10]
Résumé en anglais	<p>A biosensor for direct label-free DNA detection based on a polythiophene matrix is investigated by electrochemical impedance spectroscopy (EIS). Impedimetric experiments are performed with and without redox probe in solution. The non-Faradaic impedance measurements reveal two relaxation processes located at 50 Hz and 5 kHz, respectively. The first relaxation process, located at low frequencies, allows to detect biorecognition events by measuring the phase angle decrease, in accordance with a hindrance of the polaronic conduction. The second relaxation process, located at 5 kHz and originating from DNA modification, seems to increase with the length of the target sequence. These results suggest that this loaded support provides a platform for impedimetric detection of hybridization at high frequencies, leading to less time-consuming detection procedure. For a better understanding, results obtained in non-Faradaic mode are compared with Faradaic approach.</p>
URL de la notice	<a href="http://okina.univ-angers.fr/publications/ua10464">http://okina.univ-angers.fr/publications/ua10464</a> [11]
DOI	10.1016/j.jelechem.2007.07.013 [12]
Lien vers le document	<a href="http://linkinghub.elsevier.com/retrieve/pii/S0022072807003452">http://linkinghub.elsevier.com/retrieve/pii/S0022072807003452</a> [13]

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## Liens

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