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[Continued on next page]

(54) Title: ENGINEERED CONDUCTIVE POLYMER FILMS TO MEDIATE BIOCHEMICAL INTERACTIONS

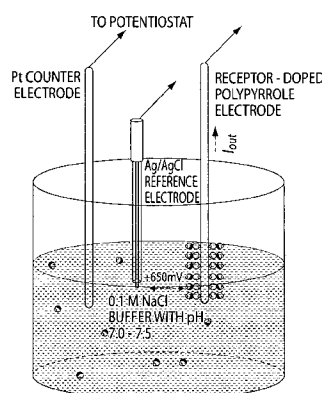


Fig. 1

(57) Abstract: The conductive polymer films of this disclosure reversibly and selectively mediate ligand-receptor interactions. This electrochemical manipulation of biochemical interactions is accomplished by embedding or adsorbing receptors for ligands of interest in or onto a conductive polymer matrix. The matrix can also be doped, for example, with desired ions, polyions, or surfactants. Depending on the receptor properties and dopants utilized, ligand-receptor interactions at the polymer-electrolyte interface are manipulated by controlling the oxidation and reduction of the conductive polymer. The intrinsic charge transfer characteristics of conductive polymers are used to modulate ligand-receptor interactions.



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A. CLASSIFICATION OF SUBJECT MATTER

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C12Q 1/68(2006.01);**G01N 15/06**(2006.01),**33/00**(2006.01),**30/96**(2006.01),**27/00**(2006.01)

USPC: 435/283.1,287.2,7.1;422/50,68.1,82.01

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 435/283.1,287.2,7.1;422/50,68.1,82.01

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 6,344,333 (GINDILIS) 5 February 2002 (05.02.2002), see entire document.	1, 4, 6, 10-14 and 16-32 ----- 2, 3, 5, 7-9 and 15
Y	US 2001/0006749 (SHACKLE) 5 July 2001 (05.07.2001), see entire document.	2, 3 and 7-9
Y	US 2004/0241752 (ANDERSON et al) 2 December 2004 (02.12.2004), see entire document.	5
Y	US 4,839,322 (YODICE et al) 13 June 1989 (13.06.1989), see entire document.	15
A, P	US 2007/0060815 (MARTIN et al) 15 March 2007 (15.03.2007), see entire document.	33-41



Further documents are listed in the continuation of Box C.



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* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

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Continuation of B. FIELDS SEARCHED Item 3:

Medline, Chemical Abstracts:

search terms: conductive polymer, polypyrrole, immobilization, receptor, potentiostat, working electrode