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(54) Title: AMPEROMETRIC BIOSENSOR IN THICK FILM TECHNOLOGY

(57) Abstract: Described is an amperometric biosensor in thick film technology for the detection an/or determination of substances undergoing enzyme catalyzed reactions, especially glucose or lactate, comprising an inert carrier material, at least one transducer layer exhibiting a specific electrical conductivity $\chi > 10^4 \Omega^{-1}\text{cm}^{-1}$, and at least one bioactive layer with diffusion barrier function containing at least one enzyme specifically reacting with said substance to be measured, said bioactive layer exhibiting a specific electrical conductivity $\chi < 1 \Omega^{-1}\text{cm}^{-1}$ and said bioactive layer further effectively hinders other electroactive substances to reach the transducer layer within the time of measurement.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

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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)

IPC 7 C12Q

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 practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 691 408 A (BIOTECHNOLOG FORSCHUNG GMBH) 10 January 1996 (1996-01-10)	1,3-5
Y	example 1	2
X	EP 0 987 333 A (DU PONT) 22 March 2000 (2000-03-22)	1
A	abstract page 3, line 14,15 page 6, line 8-10	3-5
X	EP 0 634 488 A (GOLD STAR CO) 18 January 1995 (1995-01-18)	1
A	column 2, line 49 -column 3, line 30	3-5
Y	EP 0 652 436 A (GOLD STAR CO) 10 May 1995 (1995-05-10)	2
	abstract	
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Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>ALBAREDA-SIRVENT M ET AL: "Configurations used in the design of screen-printed enzymatic biosensors. A review" SENSORS AND ACTUATORS B, ELSEVIER SEQUOIA S.A., LAUSANNE, CH, vol. 69, no. 1-2, 10 September 2000 (2000-09-10), pages 153-163, XP004208572 ISSN: 0925-4005 the whole document</p> <p style="text-align: center;">-----</p>	1-5

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 02/07765

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0691408	A	10-01-1996	DE 4424179 A1	11-01-1996
			AT 197476 T	11-11-2000
			DE 59508832 D1	14-12-2000
			DK 691408 T3	27-11-2000
			EP 0691408 A1	10-01-1996
			ES 2152348 T3	01-02-2001
			GR 3035345 T3	31-05-2001
			PT 691408 T	28-02-2001
EP 0987333	A	22-03-2000	US 6042751 A	28-03-2000
			EP 0987333 A2	22-03-2000
			JP 3394218 B2	07-04-2003
			JP 2000097898 A	07-04-2000
EP 0634488	A	18-01-1995	KR 9701146 B1	29-01-1997
			EP 0634488 A2	18-01-1995
			JP 2838484 B2	16-12-1998
			JP 7077511 A	20-03-1995
			US 5656142 A	12-08-1997
EP 0652436	A	10-05-1995	KR 9710981 B1	05-07-1997
			DE 69430231 D1	02-05-2002
			DE 69430231 T2	18-07-2002
			EP 0652436 A2	10-05-1995
			JP 7198668 A	01-08-1995
			US 5571395 A	05-11-1996