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Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv))

Published:

— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: GROOVED ELECTRODE AND WIRELESS MICROTTRANSPONDER SYSTEM

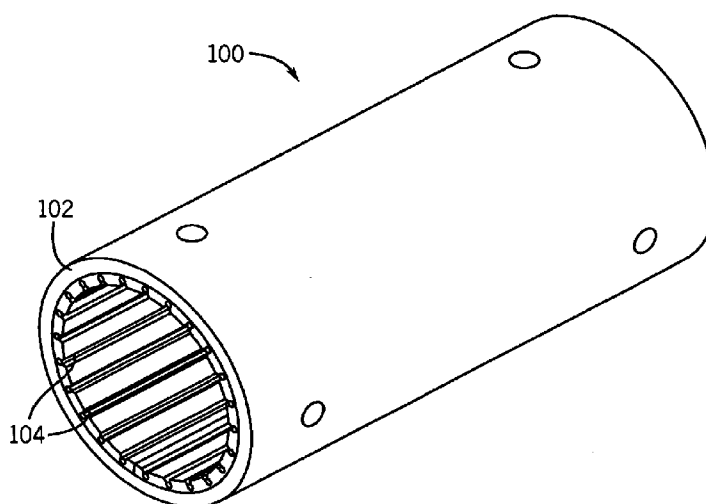


FIG. 7

(57) Abstract: A grooved electrode adapted for interfacing cellular matter is provided. The grooved electrode includes grooves adapted for electrically interfacing the grooved electrode with cellular matter growing along the body of the grooved electrode. Further, the grooved electrode includes a wireless transponder adapted to electrically interface with cellular matter and to relay such interactions via RF signals. The RF signals received by the wireless transponder are modulated in response to electrical signals generated by the cellular matter, which are detected by the transponder. The grooved electrode may be implanted within peripheral nerves for treating various neurological conditions, which may include nerve rehabilitation and prosthetic actuation, severe pain, obstructive sleep apnea and so forth.

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A. CLASSIFICATION OF SUBJECT MATTER*A61N 1/18(2006.01)i, A61N 1/05(2006.01)i, A61B 5/04(2006.01)i*

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 8 : A61N 1/18

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

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

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

eKIPASS(KIPO internal) "groove", "electrode", "transponder", "neurological", "implantable"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5833603 A (Gregory T.A. Kovacs et al.) 10 NOVEMBER 1998 See the abstract; column 3, line 57-column 59, line 43; fig.1-10.	1-37, 42-47
A	DARYL R. KIPKE et al., Silicon-Substrate Intracortical Microelectrode Arrays for Long-Term Recording of Neuronal Spike Activity in Cerebral Cortex, IEEE Transactions on Neural systems and Rehabilitation engineering, JUNE 2003, Vol.11, No.2, pages 151-155 See the abstract and pages 151-154.	1-37, 42-47
A	RIO J. VETTER et al., Chronic Neural Recording Using Silicon-Substrate Microelectrode Arrays Implanted in Cerebral Cortex, IEEE Transactions on Biomedical Engineering, JUNE 2004, Vol.51, No.6, pages 896-904 See the abstract and pages 897-903.	1-37, 42-47



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"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

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2008/068165**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 38-41, 48-76
because they relate to subject matter not required to be searched by this Authority, namely:
The subject matter of claims 38-41 and claims 48-76 is related to a method for implanting a device from surgical incision. Therefore, claims 38-41 and 48-76 fall into the category of methods for treatment of the human body or animal body by surgery or therapy as well as diagnostic methods. [Article 17(2)(a)(i), Rule 39.1(iv) PCT]
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2008/068165Patent document
cited in search reportPublication
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member(s)Publication
date

US 5833603 A

10.11.1998

JP 2000-506410 A

30.05.2000