

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference P201400401	FOR FURTHER ACTION		See item 4 below
International application No. PCT/ES2015/000064	International filing date (<i>day/month/year</i>) 12 May 2015 (12.05.2015)	Priority date (<i>day/month/year</i>) 13 May 2014 (13.05.2014)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant UNIVERSIDAD DE SEVILLA			

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																								
<p>3. This report contains indications relating to the following items:</p> <table border="0"> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
<input checked="" type="checkbox"/>	Box No. I	Basis of the report																						
<input type="checkbox"/>	Box No. II	Priority																						
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability																						
<input type="checkbox"/>	Box No. IV	Lack of unity of invention																						
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																						
<input type="checkbox"/>	Box No. VI	Certain documents cited																						
<input type="checkbox"/>	Box No. VII	Certain defects in the international application																						
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																						

	Date of issuance of this report 15 November 2016 (15.11.2016)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Simin Baharlou
Facsimile No. +41 22 338 82 70	e-mail: pt09.pct@wipo.int

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing (day/month/year)	03.08.2015
-------------------------------------	-------------------

Applicant's or agent's file reference P201400401
--

FOR FURTHER ACTION See paragraph 2 below
--

International application No. PCT/ES2015/000064	International filing date (day/month/year) 12.05.2015	Priority date (day/month/year) 13.05.2014
---	---	---

International Patent Classification (IPC) or both national classification and IPC G01R27/08 (2006.01)

Applicant UNIVERSIDAD DE SEVILLA
--

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/ES	Date of completion of this opinion	Authorized officer
Facsimile No.		Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/ES2015/000064

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - the international application in the language in which it was filed
 - a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:
 - a. (means)
 - on paper
 - in electronic form
 - b. (time)
 - in the international application as filed
 - together with the international application in electronic form
 - subsequently to this Authority for the purposes of search
4. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No. PCT/ES2015/000064
--

Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
------------------	---

1. Statement			
Novelty (N)	Claims	1-5	YES
	Claims	_____	NO
Inventive step (IS)	Claims	_____	YES
	Claims	1-5	NO
Industrial applicability (IA)	Claims	1-5	YES
	Claims	_____	NO

2. Citations and explanations:	
--------------------------------	--

Doc.	Publication or Identification Number	Pub. Date
D01	YUFERA A et al. A CMOS bio-impedance measurement system. Design and Diagnostics of Electronic Circuits & Systems, 2009. DDECS '09. 12th International Symposium on, 20090415 IEEE, Piscataway, NJ, USA 15/04/2009 VOL: Pages: 252-257 ISBN 978-1-4244-3341-4; ISBN 1-4244-3341-X. Entire document.	15/04/2009
D02	WISSENWASSER J et al. Signal Generator for Wireless Impedance Monitoring of Microbiological Systems. IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT, 20110601 IEEE SERVICE CENTER, PISCATAWAY, NJ, US 01/06/2011 VOL: 60 No: 6 Pages: 2039-2046 ISSN 0018-9456 Doi: doi:10.1109/TIM.2011.2113127. Entire document.	01/06/2011
D03	MORRISON TIM et al. A 0.5 cm ³ Four-Channel 1.1 mW Wireless Biosignal Interface With 20 m Range. IEEE Transactions on Biomedical Circuits and Systems,	

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

20140201 IEEE, US 01/02/2014 VOL: 8 No: 1 Pages:
138 147 ISSN 1932-4545 Doi:
doi:10.1109/TBCAS.2013.2260337. Entire document.
01/02/2014

D01 is considered to be the prior art document closest to the subject matter of the application.

Independent claims

Claim 1: Document D01 discloses a bioimpedance measuring system for monitoring cell cultures, based on CMOS circuits and electrical modelling, with:

- a 2D electrode matrix; one central electrode e1 and one of larger area, reference electrode e2;
- a closed loop excitation and bioimpedance measurement circuit;

The differences between document D01 and claim 1 relate to:

- a circuit for transmitting and receiving (wireless) radiofrequency signals with the technical effect of enabling:
- wireless monitoring;
- monitoring and programming software based on

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

electrical modelling which is considered, in the generic sense expressed, an option commonly known in the technical field of the application, implemented by means of the corresponding controllers and data output systems, for example, and therefore obvious to a person skilled in the art. Wireless programming is illustrated in document D03.

The technical problem addressed would therefore appear to be how to achieve wireless monitoring of cell cultures. In turn, document D02 discloses a system for wireless measurement of cell culture impedance using an RFID tag.

Bearing in mind that the two documents belong to the same technical field and are complementary in nature, a person skilled in the art would tend to combine them to obtain the solution to the technical problem addressed.

As such, the combination of documents D01 and D02 would appear to affect the inventive step of claim 1 (PCT Article 33(3)).

Dependent claims

Claims 2-5: the content of these claims is contained in document D01.

Therefore, the combination of documents D01 and D02 would appear to affect the inventive step of claims 2-5 (PCT Article 33(3)).