



(51) International Patent Classification:

A61B 18/14 (2006.01) A61B 5/00 (2006.01)
A61B 17/00 (2006.01)

(21) International Application Number:

PCT/IB2013/050402

(22) International Filing Date:

16 January 2013 (16.01.2013)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/588,748 20 January 2012 (20.01.2012) US

(71) Applicant: KONINKLIJKE PHILIPS N.V. [NL/NL];
High Tech Campus 5, NL-5656 AE Eindhoven (NL).

(72) Inventors: HENDRIKS, Bernardus, Hendrikus, Wilhelmus; c/o High Tech Campus Building 44, NL-5656 AE Eindhoven (NL). RUERS, Theodoor, Jacques, Marie; c/o High Tech Campus Building 44, NL-5656 AE Eindhoven (NL). LUCASSEN, Gerhardus, Wilhelmus; c/o High Tech Campus Building 44, NL-5656 AE Eindhoven (NL). MÜLLER, Manfred; c/o High Tech Campus Building 44, NL-5656 AE Eindhoven (NL). HORIKX, Jeroen, Jan, Lambertus; c/o High Tech Campus Building 44, NL-5656 AE Eindhoven (NL). BIERHOFF, Waltherus, Cornelis, Jozef; c/o High Tech Campus Building 44, NL-5656 AE Eindhoven (NL). KLEWER, Jasper; c/o High Tech Campus Building 44, NL-5656 AE Eindhoven (NL). VAN

DER VOORT, Marjolein; c/o High Tech Campus Building 44, NL-5656 AE Eindhoven (NL). KAHYA, Neriman, Nicoletta; c/o High Tech Campus Building 44, NL-5656 AE Eindhoven (NL). REICH, Christian; c/o High Tech Campus Building 44, NL-5656 AE Eindhoven (NL).

(74) Agents: VAN VELZEN, Maaïke, M. et al.; High Tech Campus 44, NL-5600 AE Eindhoven (NL).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: AN ELECTRO- SURGICAL SYSTEM, AN ELECTRO - SURGICAL DEVICE

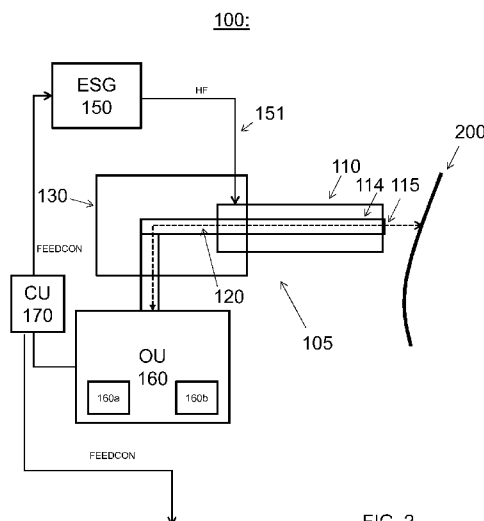


FIG. 2

(57) Abstract: An electro-surgical system (100) with an optical feedback functionality for performing electro-surgery on tissue (200) of patient. An electro- surgical device (105) has an electrode portion (110) with an optical guide (114) integrated therein. An optical unit (160) performs optical characterization of tissue type and/or condition, and is arranged for performing an analysis of the tissue type and/or condition. A control unit (170) generates a feedback control signal (FEEDCON) based on the analysis of the tissue type and/or condition, optical guide allows inspecting the tissue that is e.g. just a few millimeters ahead of the electrode portion (110) performing e.g. the cutting. As a result of the fast and reliable analysis performed by the spectrometer in the optical unit according to the present invention, the system can proactively react to what kind of tissue is in front of the electro-surgical portion i.e. the 'blade' of the electro-surgical device or the electro-surgical 'knife'.



WO 2013/108194 A3



Published:

(88) Date of publication of the international search report:

— *with international search report (Art. 21(3))*

31 October 2013

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2013/050402

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61B18/14
ADD. A61B17/00 A61B5/00

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)
A61B

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)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006/173359 A1 (LIN WEI C [US] ET AL) 3 August 2006 (2006-08-03) paragraph [0047]; figures 1,11,14,15-17b paragraph [0052] - paragraph [0053] paragraph [0071] paragraph [0066] - paragraph [0071] paragraph [0009]	1-11,14
X	DE 102 49 674 A1 (ZEISS CARL [DE]) 13 May 2004 (2004-05-13) figures 1,5-10	1-8,14
X	GB 2 414 679 A (INTRALUMINAL THERAPEUTICS INC [US]) 7 December 2005 (2005-12-07) paragraph [0011]; figures 1-4	1-5,7-9, 13,14
	----- -/--	

☒ 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 another 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

22 July 2013

Date of mailing of the international search report

29/07/2013

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Cornelissen, P

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2013/050402

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2011/104664 A1 (KONINKL PHILIPS ELECTRONICS NV [NL]; HENDRIKS BERNARDUS HENDRIKUS WILH) 1 September 2011 (2011-09-01) abstract; figures 1,4 -----	1,3-5, 7-9,14
X,P	WO 2012/049621 A1 (KONINKL PHILIPS ELECTRONICS NV [NL]; HARKS ERIK GODEFRIDUS ANTONIUS [N]) 19 April 2012 (2012-04-19) page 1, line 15 - page 15, line 14; figures 1-3 -----	1,3,5-14
X	US 5 762 609 A (BENARON DAVID A [US] ET AL) 9 June 1998 (1998-06-09) column 8, line 65 - column 10, line 32; figures 1,3 -----	1-3,5,6, 10,11,14
X	US 5 769 791 A (BENARON DAVID A [US] ET AL) 23 June 1998 (1998-06-23) column 16,, line 20 - line 32; figures 1,3c column 12, line 10 - line 30 -----	1,2,4,6, 9,11,14
X	WO 01/74252 A2 (RITA MEDICAL SYSTEMS INC [US]; BALBIERZ DANIEL J [US]; JOHNSON THEODOR) 11 October 2001 (2001-10-11) page 38, line 5 - line 23; figures 1-13,30 page 12, line 14 - page 13, line 7 page 28, line 28 - page 29, line 23 -----	1-5,9, 11,13,14
X	WO 2009/090588 A1 (KONINKL PHILIPS ELECTRONICS NV [NL]; THILWIND RACHEL E [NL]; SUIJVER J) 23 July 2009 (2009-07-23) abstract; figure 3 -----	1,14

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2013/050402

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.: 15
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
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 fees, this Authority did not invite payment of additional fees.
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/IB2013/050402

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006173359	A1	03-08-2006	AU 2003279097 A1 19-04-2004
			US 2006173359 A1 03-08-2006
			WO 2004028353 A2 08-04-2004
DE 10249674	A1	13-05-2004	NONE
GB 2414679	A	07-12-2005	NONE
WO 2011104664	A1	01-09-2011	CN 102781357 A 14-11-2012
			EP 2538863 A1 02-01-2013
			JP 2013520269 A 06-06-2013
			US 2012316558 A1 13-12-2012
			WO 2011104664 A1 01-09-2011
WO 2012049621	A1	19-04-2012	CN 103153174 A 12-06-2013
			EP 2627241 A1 21-08-2013
			WO 2012049621 A1 19-04-2012
US 5762609	A	09-06-1998	NONE
US 5769791	A	23-06-1998	US 5769791 A 23-06-1998
			US 5772597 A 30-06-1998
			US 5785658 A 28-07-1998
			US 5807261 A 15-09-1998
WO 0174252	A2	11-10-2001	AU 4975201 A 15-10-2001
			AU 5113401 A 15-10-2001
			AU 2001251134 B2 02-02-2006
			CA 2404923 A1 11-10-2001
			EP 1272117 A2 08-01-2003
			JP 4723156 B2 13-07-2011
			JP 2003528684 A 30-09-2003
			NZ 522128 A 29-08-2003
			US 2002026127 A1 28-02-2002
			US 2002026188 A1 28-02-2002
			US 2006241577 A1 26-10-2006
			WO 0174251 A2 11-10-2001
			WO 0174252 A2 11-10-2001
WO 2009090588	A1	23-07-2009	NONE