

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
17 October 2002 (17.10.2002)

PCT

(10) International Publication Number
WO 02/080774 A3

- (51) International Patent Classification⁷: **A61B 8/00**, Genève (CH). **ARDITI, Marcel** [CH/CH]; 27, rue Daubin, CH-1203 GENEVA (CH).
G01N 29/02, G01L 11/06, G01K 5/28
- (21) International Application Number: PCT/IB02/01229 (81) Designated States (*national*): AU, CA, JP, US.
- (22) International Filing Date: 5 April 2002 (05.04.2002) (84) Designated States (*regional*): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).
- (25) Filing Language: English
- (26) Publication Language: English Declaration under Rule 4.17:
— of inventorship (Rule 4.17(iv)) for US only
- (30) Priority Data: 60/281,794 6 April 2001 (06.04.2001) US Published:
— with international search report
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27 February 2003
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- (75) Inventors/Applicants (*for US only*): **FRINKING, Peter, J., A.** [NL/CH]; 23, rue du XXX1 Décembre, CH-1207
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*



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(54) Title: METHOD FOR IMPROVED MEASUREMENT OF LOCAL PHYSICAL PARAMETERS IN AFLUID-FILLED CAVITY

(57) Abstract: The present invention relates to remotely determining local physical parameters in a fluid-filled cavity (e.g. heart cavities, blood vessels, industrial container) by means of ultrasound waves and encapsulated or stabilised gas bubbles. A measuring method, a method of diagnostic ultrasound of the same and an apparatus for remotely determining ambient physical local parameters of a fluid-filled cavity are disclosed.

INTERNATIONAL SEARCH REPORT

Int ☐ National Application No

PCT/IB 02/01229

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61B8/00 G01N29/02 G01L11/06 G01K5/28

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 A61B G01N G01L G01K

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, WPI Data, PAJ, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 98 32378 A (ANDARIS LTD ;FRINKING PETER (NL); JONG NICO DE (NL)) 30 July 1998 (1998-07-30) cited in the application page 11, line 21 -page 12, line 9 -----	1
Y	WO 99 47045 A (FORSBERG FLEMMING ;RAICHLEN JOEL S (US); SHI WILLIAM TAO (US); UNI) 23 September 1999 (1999-09-23) cited in the application page 15, line 16 - line 19 -----	1

☐ Further documents are listed in the continuation of box C.

Patent family members are listed in 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 document 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.

Z document member of the same patent family

Date of the actual completion of the international search

6 November 2002

Date of mailing of the international search report

15/11/2002

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB 02/01229

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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.: 1-14 (partly), 15, 16
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 in step a) of claims 1 and 15; for an in-vivo application of claims 1-16 corresponding apparatus features have been searched
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 II Observations where unity of invention is lacking (Continuation of item 2 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.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Initial Application No
PCT/IB 02/01229

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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			US 2001021808 A1	13-09-2001