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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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: SYSTEM FOR VARIABLY REFRACTING ULTRASOUND AND/OR LIGHT

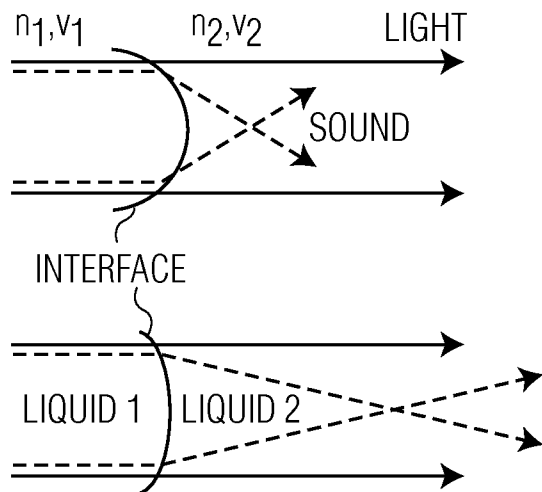


FIG. 1

(57) Abstract: The disclosure is directed to a system for variably refracting, and is transparent for, ultrasound as well as for light. By choosing liquids with the right optical and acoustical properties, it is possible to variably refract (including focusing and deflecting or steering) ultrasound while not affecting the refraction of light, or vice versa. Two lenses in series, or preferably one lens, allow for variably refracting ultrasound and light.

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INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2007/051327

A. CLASSIFICATION OF SUBJECT MATTER
INV. G10K11/30

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)
G10K G02B

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2006/013541 A (KONINKL PHILIPS ELECTRONICS NV [NL]; KUIPER STEIN [NL]; HENDRIKS BERNA) 9 February 2006 (2006-02-09) abstract page 11, lines 3-5	1-3
X	ANONYMOUS: "Philips? Fluid Lenses" DIGITAL PHOTOGRAPHY REVIEW, [Online] 3 March 2004 (2004-03-03), XP002491852 Retrieved from the Internet: URL: http://www.dpreview.com/news/0403/04030302philipsfluidlens.asp [retrieved on 2008-08-13] the whole document	1-3

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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 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.
- * & * document member of the same patent family

Date of the actual completion of the international search

13 August 2008

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10/12/2008

Name and mailing address of the ISA/

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International application No

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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.
X	<p>WO 2005/122139 A (KONINKL PHILIPS ELECTRONICS NV [NL]; KUIPER STEIN [FR]; HENDRIKS BERNA) 22 December 2005 (2005-12-22) cited in the application abstract page 2, lines 28-31</p>	1-3
X	<p>BERGE B ET AL: "Variable focal lens controlled by an external voltage: an application of electrowetting" EUROPEAN PHYSICAL JOURNAL E. SOFT MATTER, EDP SCIENCES, IT, vol. 3, no. 2, 1 October 2000 (2000-10-01), pages 159-163, XP002285977 ISSN: 1292-8941 page 159</p>	1-3
X	<p>WO 03/069380 A (KONINKL PHILIPS ELECTRONICS NV [NL]; FEENSTRA BOKKE J [NL]; KUIPER STE) 21 August 2003 (2003-08-21) abstract</p>	1-3
X	<p>KUIPER S ET AL: "VARIABLE-FOCUS LIQUID LENS FOR PORTABLE APPLICATIONS" PROCEEDINGS OF THE SPIE, SPIE, BELLINGHAM, VA, vol. 5523, no. 1, 4 August 2004 (2004-08-04), pages 100-109, XP002330404 ISSN: 0277-786X page 100</p>	1-3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2007/051327

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.:
because they relate to subject matter not required to be searched by this Authority, namely:

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:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable 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.:

1-9

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9

a system that is capable of variably refracting light and/or ultrasound waves, the system comprising two lenses with a first lens having means for variably-focusing ultrasound waves without substantially refracting light waves; and a second lens having means for variably-focusing light waves without substantially refracting ultrasound waves, wherein the second lens is in series with the first lens.

2. claims: 10-15

a system that is capable of variably refracting light and/or ultrasound waves, the system comprising a lens where liquid 1 has a refractive index for light of n_1 and speed of sound of v_1 , and liquid 2 has a refractive index of n_2 , and speed of sound of V_2 , wherein the boundary between the liquids 1 and 2 obeys the relationship:
 $(n_1/n_2 - v_1/v_2) < 0.2$.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2007/051327

Patent document cited in search report	A	Publication date	Patent family member(s)	Publication date
WO 2006013541	A	09-02-2006	CN 1989428 A	27-06-2007
			EP 1774370 A1	18-04-2007
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