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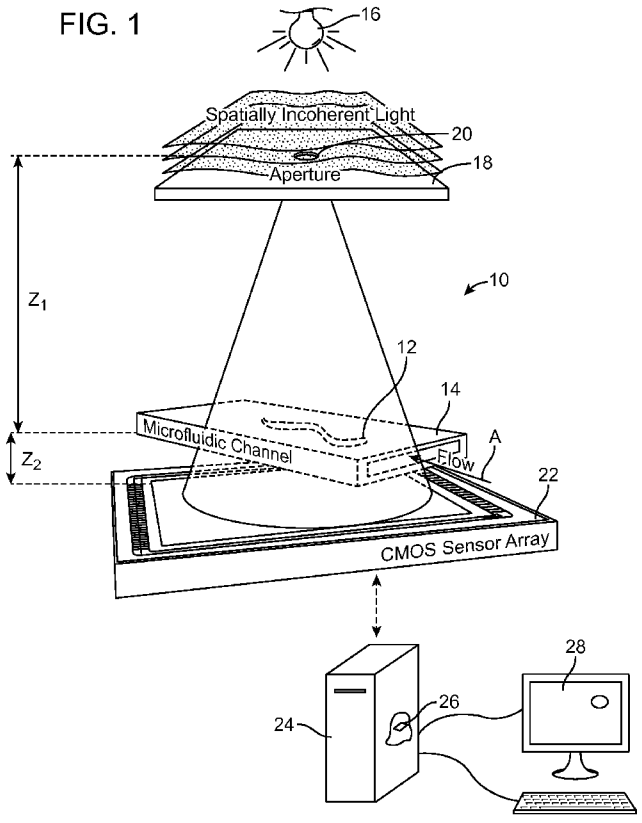
[Continued on next page]

(54) Title: METHOD AND DEVICE FOR HOLOGRAPHIC OPTO-FLUIDIC MICROSCOPY

FIG. 1



(57) Abstract: A method and system of imaging a moving object within a microfluidic environment includes illuminating a first side of a flow cell configured to carry the moving object within a flow of carrier fluid with an illumination source emitting at least partially coherent light, the at least partially coherent light passing through an aperture prior to illuminating the flow cell. A plurality of lower resolution frame images of the moving object are acquired with an image sensor disposed on an opposing side of the flow cell, wherein the image sensor is angled relative to a direction of flow of the moving object within the carrier fluid. A higher resolution image is reconstructed of the moving object based at least in part on the plurality of lower resolution frame images.

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A. CLASSIFICATION OF SUBJECT MATTER

G01B 9/021(2006.01)i, G01B 9/04(2006.01)i, G01N 21/85(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)

G01B 9/021; C12Q 1/04; G01J 3/44; G01N 21/59; G01N 21/65; C12M 1/34

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

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: microfluidic, optofluidic, microscopy, flow cell, image sensor, angled, tilt and similar terms.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	YANG, C. and PSALTIS, D., "Optofluidic can create small, cheap biophotonic d evices," Laser Focus World, July 2006, pages 85-87. See pages 85-87.	1-24
A	US 2007-0153266 A1 (TAE-WOONG KOO et al.) 05 July 2007 See abstract, claims 1-21 and figures 1-6.	1-24
A	US 2009-0117555 A1 (KUYPERS FRANCISCUS ALBERTUS et al.) 07 May 2009 See abstract, claims 1-25 and figures 1-12.	1-24
A	US 2010-0296094 A1 (YANG CHANGHUEI et al.) 25 November 2010 See abstract, claims 1-20 and figures 1-21.	1-24

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

☒ See patent family annex.

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"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

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
04 MAY 2012 (04.05.2012)	**18 JULY 2012 (18.07.2012)**

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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