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20 February 2014

**INTERNATIONAL SEARCH REPORT**

International application No  
PCT/US2013/044906

**A. CLASSIFICATION OF SUBJECT MATTER**  
 INV. B01J19/00 C01B3/00  
 ADD. H01M8/04

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)  
 B01J C01B H01M F17C

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.
A	WO 2009/116593 A1 (OLYMPUS CORP [JP]; HORIGUCHI TOSHIO [JP]; CHURTON ROBERT J [GB]; WEAVI) 24 September 2009 (2009-09-24) abstract; figures 5-7d -----	1-21
A	EP 1 437 918 A1 (HEWLETT PACKARD DEVELOPMENT CO [US]) 14 July 2004 (2004-07-14) abstract; figures 4, 5 paragraph [0007] - paragraph [0022] -----	1-21
A	US 2002/088178 A1 (DAVIS DAVID WAYNE [US]) 11 July 2002 (2002-07-11) claim 16 paragraph [0011] - paragraph [0027] ----- -/--	1-21

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	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  13 December 2013	Date of mailing of the international search report  20/12/2013
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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  Pipoli, Tiziana
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## INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2013/044906

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2007/044452 A1 (MILLENNIUM CELL INC [US]; BERRY GRANT [US]; EASON IAN [US]; FENNIMORE) 19 April 2007 (2007-04-19) abstract paragraph [0018] - paragraph [0024]; figures 1, 2, 4 -----	1-21
A	US 2008/032167 A1 (MATSUOKA KEI [JP] ET AL) 7 February 2008 (2008-02-07) abstract figures 10a-10c paragraph [0023] - paragraph [0033] -----	1-21

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2013/044906
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