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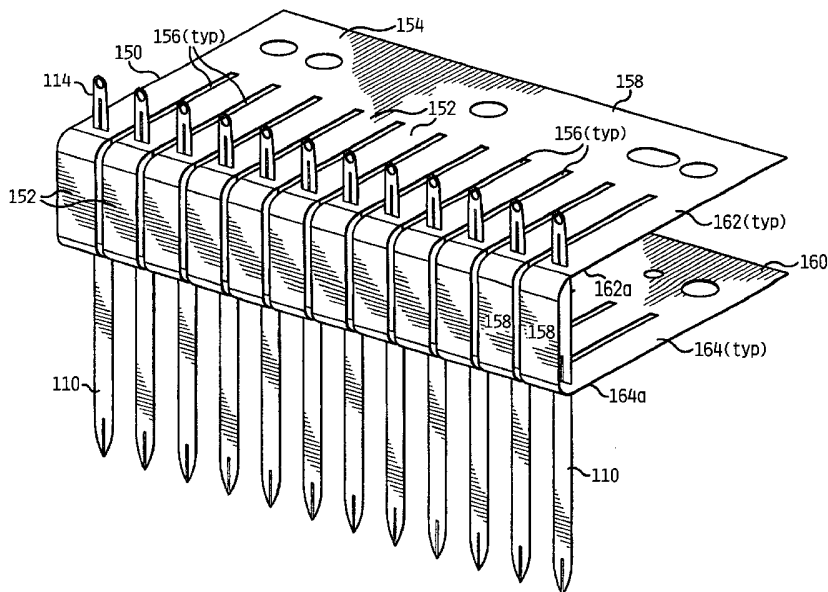
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(54) Title: HIGH DENSITY FLUIDIC CHIP DESIGN AND METHOD OF SAMPLE INJECTION



(57) Abstract: The present invention discloses a high-density parallel channel design for a microfabricated capillary array electrophoresis chip, with vertical T or double T design for sample injection. An alternative embodiment of the invention includes closed buffer reservoirs with integrated electrodes and buffer feeding ports. Also disclosed are novel sample loading and injection methods, including the use of using either a capillary array connected to an electrode, or an array of metal pens (110) as the loader/electrode.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/30362

A. CLASSIFICATION OF SUBJECT MATTER		
IPC(7) : G01N 27/447, 27/453		
US CL : 204/604,453		
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) U.S. : 204/604,453,601,451		
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) Please See Continuation Sheet		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,104,512 A (GOMBOCZ et al.) 14 April 1992, the abstract and Figures 2, 4, 6, and 7.	1,4,7,9,12,13,15,18
X	US 6,375,817 B1 (TAYLOR et al.) 23 April 2002, the abstract and Figures 4 and 6.	1,4,5,7-9,12,13
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Y		10,15,18
X	US 6,143,152 A (SIMPSON et al.) 07 November 2000, the abstract and Figures 1, 4A, and 4B.	1,4,5,7-9,12,13
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Y		10,15,18
X,P	US 6,485,625 B1 (SIMPSON et al.) 26 November 2002, the abstract and Figures 1 and 8.	1,4
Y,P :	US 6,623,613 B1 (MATHIES et al.) 23 September 2003, the abstract and Figures 1, 5A, and 5B.	1-4,7,8,12,15
X	US 6,103,199 A (BJORNSON et al.) 15 August 2000, the abstract, Figures 1-5, and column 8, lines 13-15.	1,4,5,7,8,12
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Y		15
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> 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
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"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		Date of mailing of the international search report
20 March 2004 (20.03.2004)		13 APR 2004
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230		Authorized officer Alex Nogueroles Telephone No. (571) 272-1300 Jean Proctor Paralegal Specialist

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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 --- Y, P	Us 6,488,895 B1 (KENNEDY) 03 December 2002, the abstract, Figure 3, and column 5, lines 24-26.	1-5,7,8,12 ----- 15
X, P --- Y, P	US 6,533,914 B1 (LIN) 18 March 2003, the abstract, and Figures 1 and 11.	1,4,5,7,8,12 ----- 9,15,18

INTERNATIONAL SEARCH REPORT

PCT/US03/30362

Continuation of B. FIELDS SEARCHED Item 3:

EAST

search terms:

electrophore\$, microfluid\$, micromachin\$, inject\$