FIG. 1

electric circuits		fluidic circuits
I current		**u** flow rate
U voltage		**P** pressure
Ohm's	$U = IR$	$P = uR$
Kirchhoff's	$\sum I = 0$	$\sum v = 0$

FIG. 2

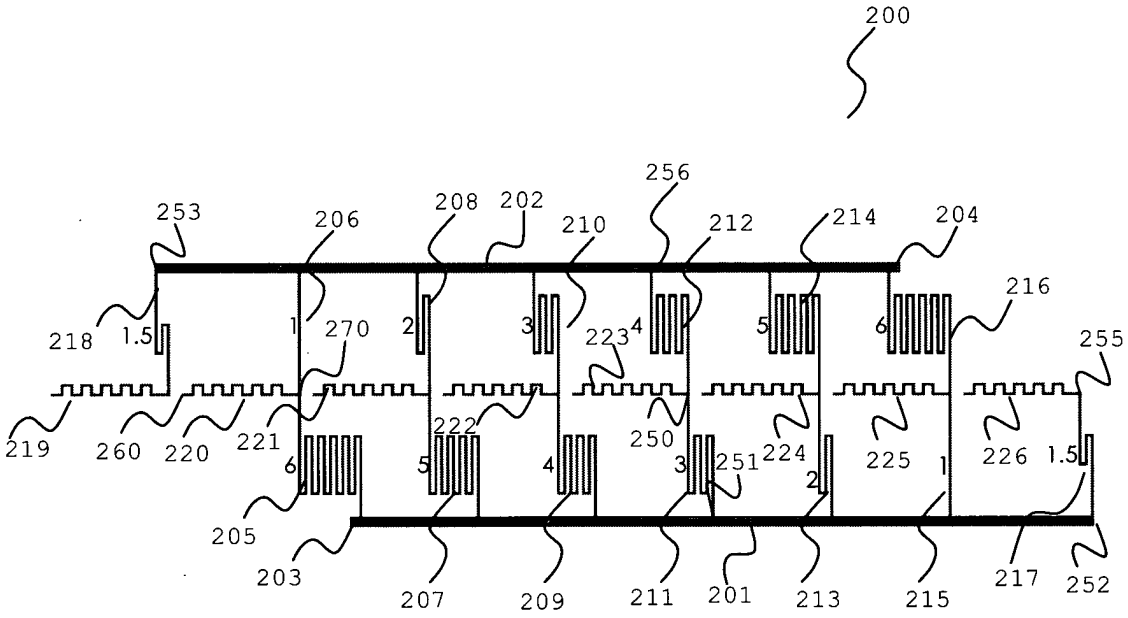

200
253
206
208
202
210
256
212
214
204
216
218
1.5
1
270
2
3
223
4
5
6
255
219
260
220
221
222
250
224
225
226
1.5
6
5
4
3
251
2
1
205
203
207
209
211
201
213
215
217
252

FIG. 3

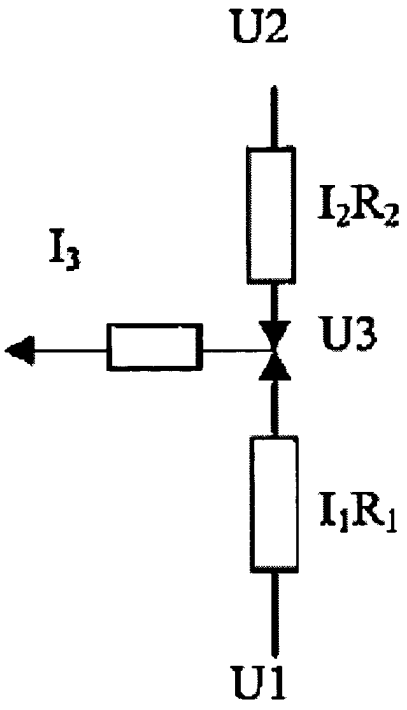


FIG. 4

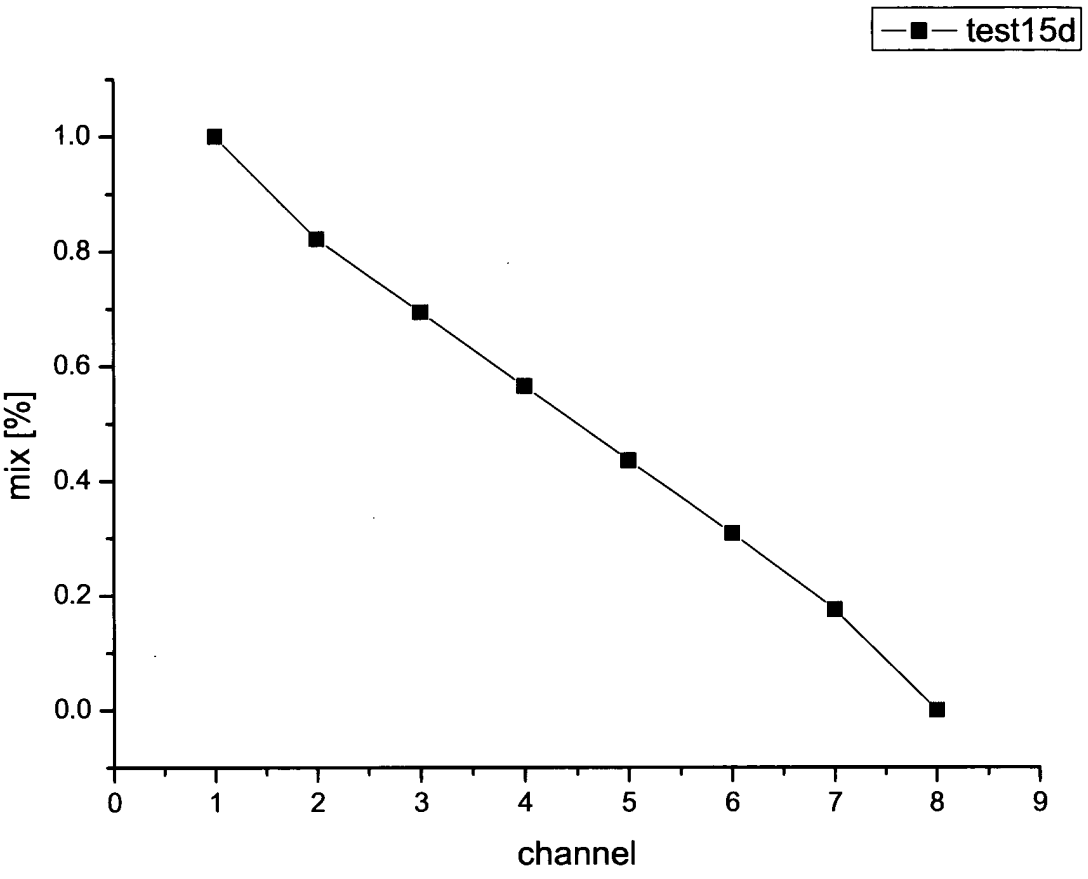
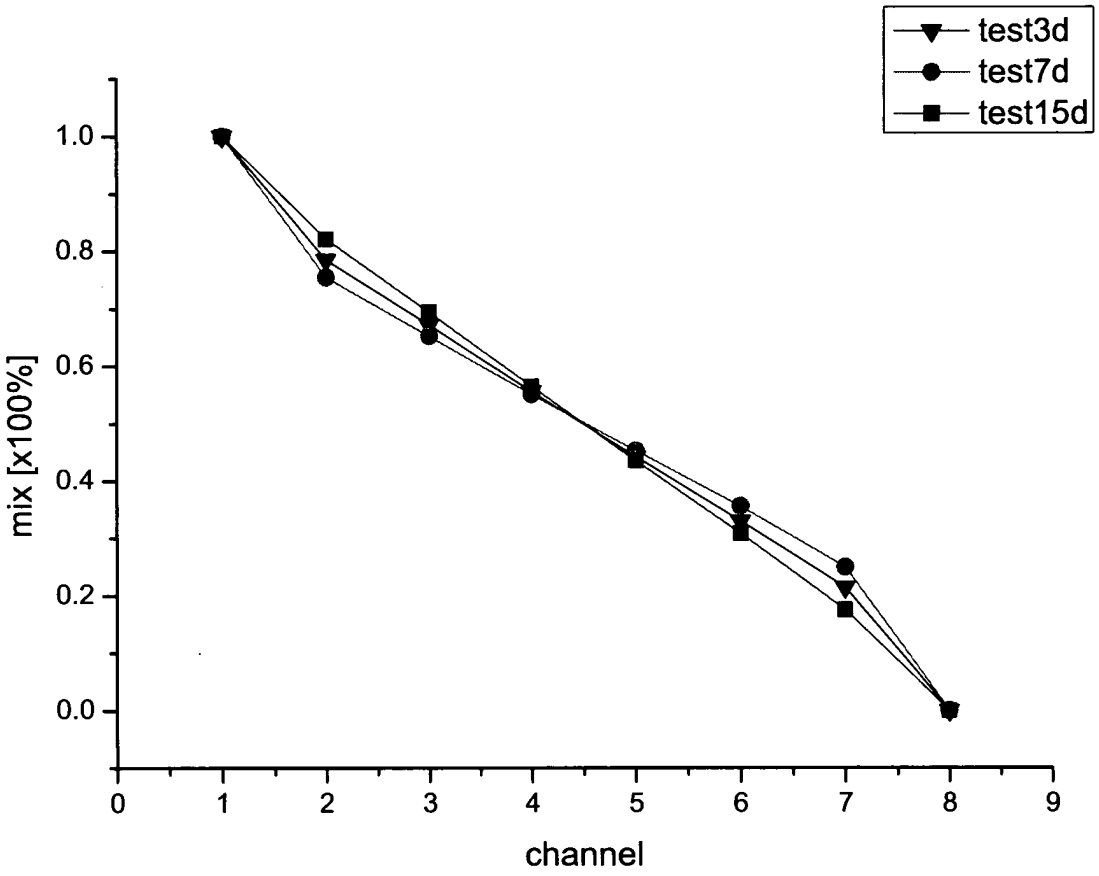


FIG. 5


test3d
test7d
test15d
mix [x100%]
1.0
0.8
0.6
0.4
0.2
0.0
0
1
2
3
4
5
6
7
8
9
channel

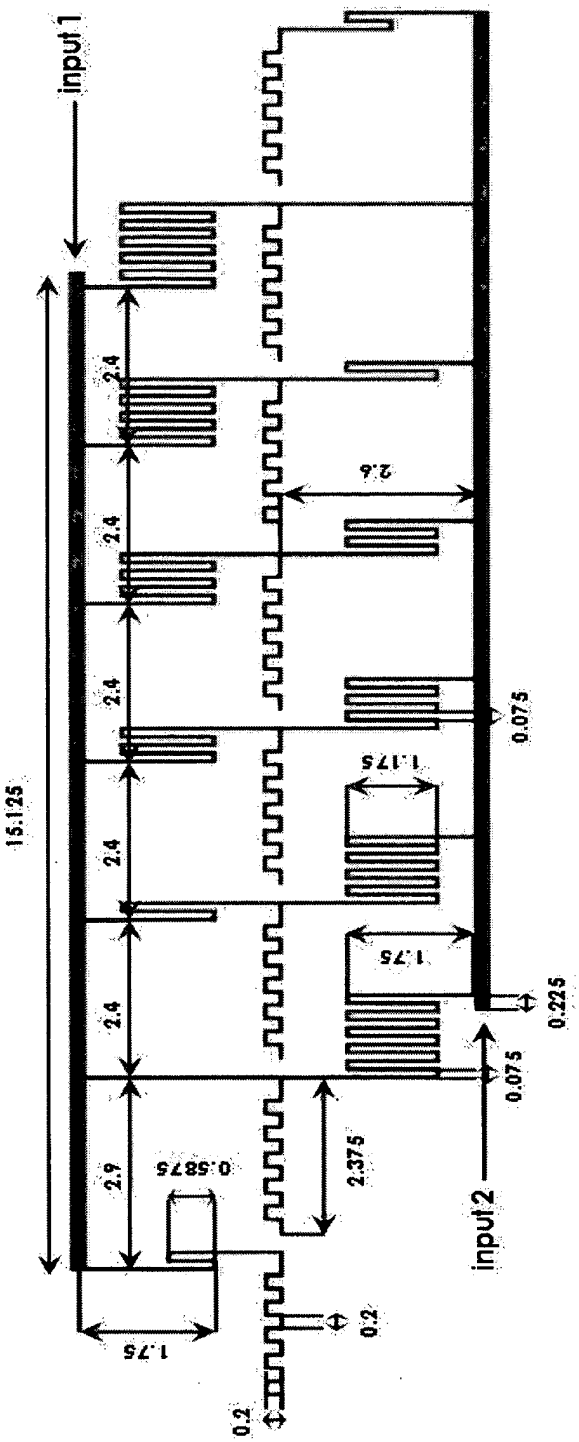

input 1
input2
15.125
2.4
2.4
2.4
2.4
2.4
2.9
2.6
1.175
1.75
0.075
0.075
0.225
0.58750
2.375
1.75
0.2
0.2

FIG. 6

FIG. 7

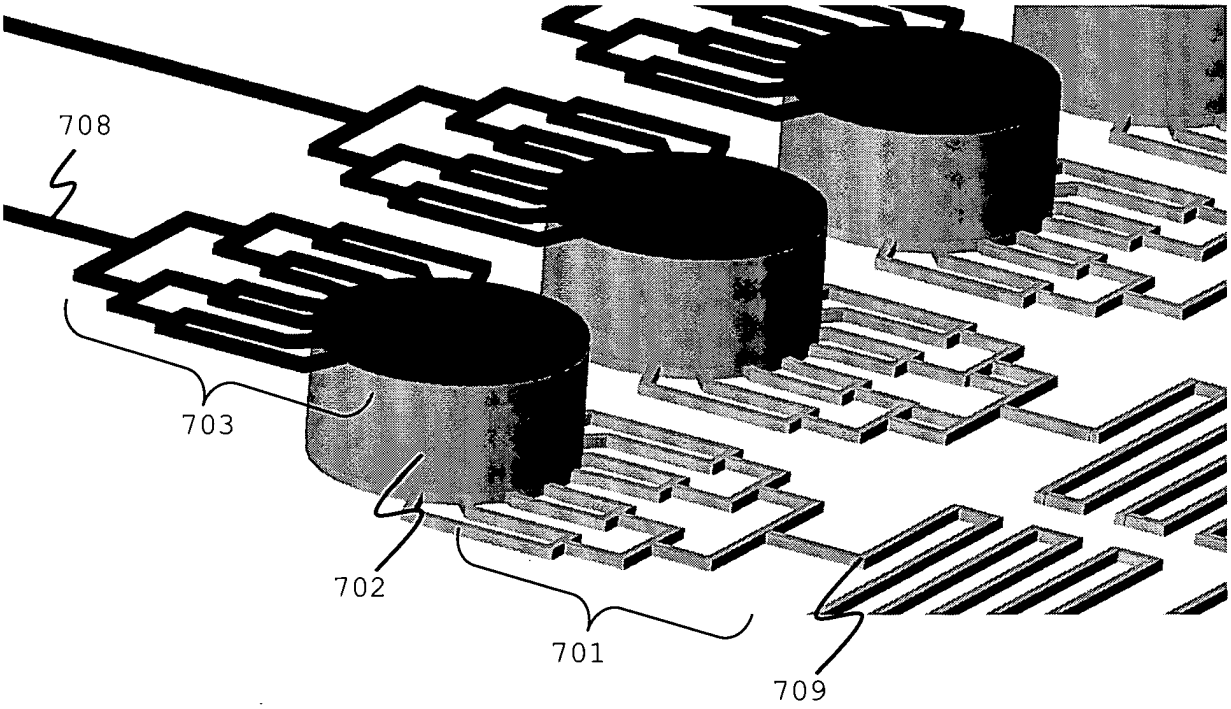


FIG. 8

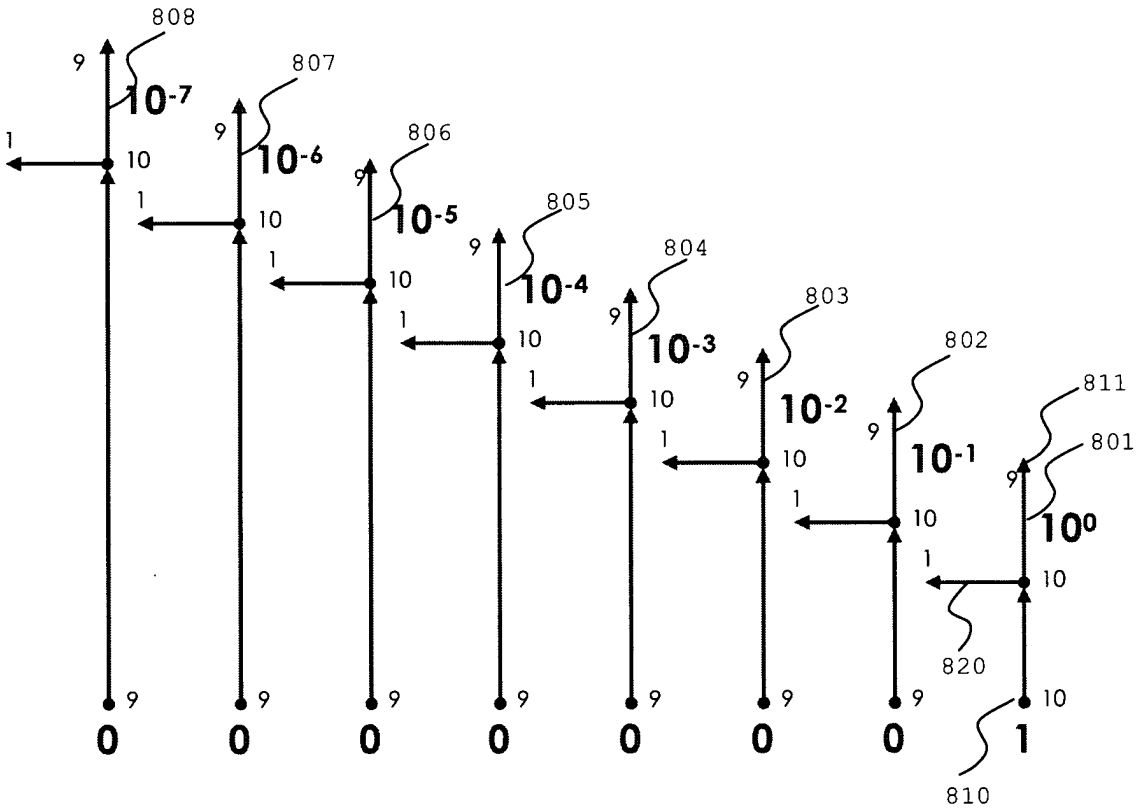

808
807
806
805
804
803
802
811
801
820
810
10^{-7}
10^{-6}
10^{-5}
10^{-4}
10^{-3}
10^{-2}
10^{-1}
10^{0}
9
1
10
0
0
0
0
0
0
0
1

FIG. 9

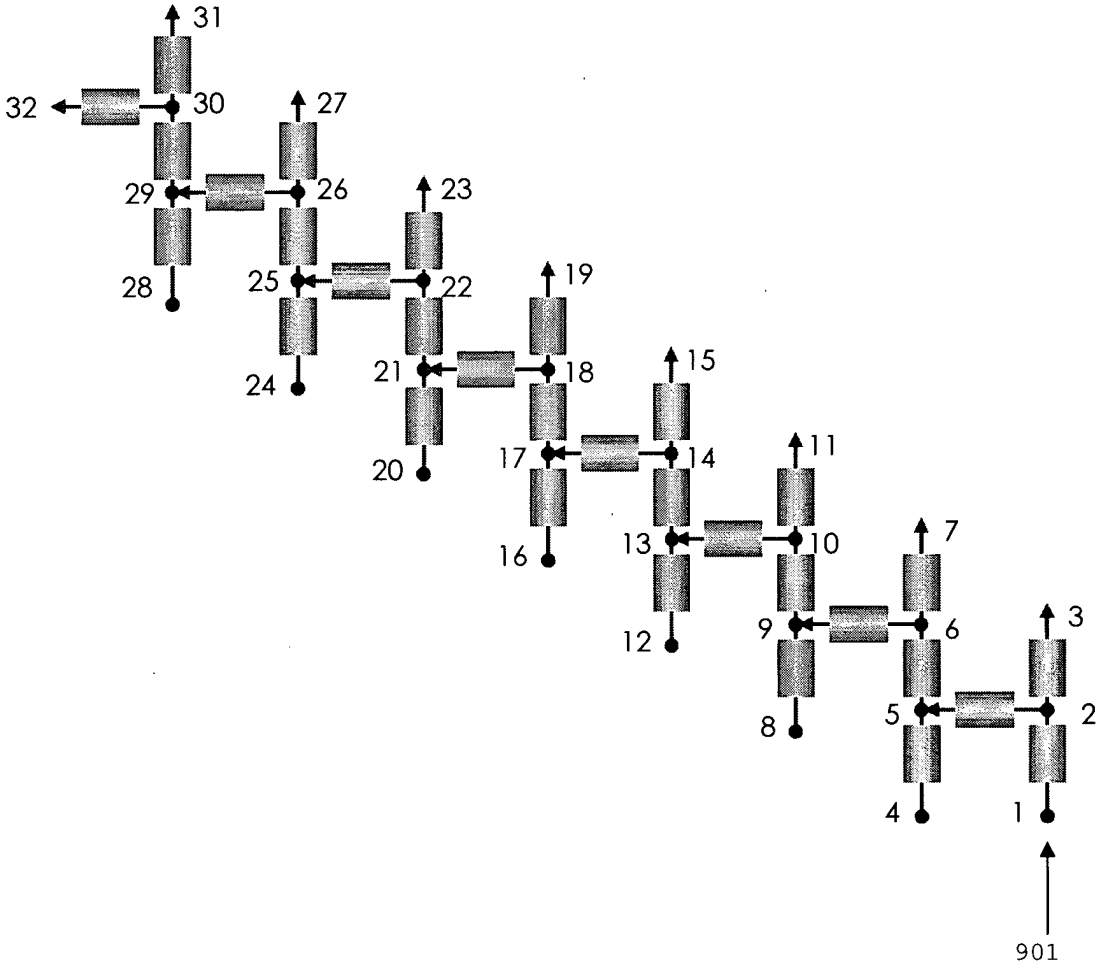

31
32
30
27
29
26
23
28
25
22
19
24
21
18
15
20
17
14
11
16
13
10
7
12
9
6
3
8
5
2
4
1
901

FIG. 10

$R_{1\,2} = 1$	$R_{9\,10} = 9$	$R_{17\,18} = 9$	$R_{25\,26} = 9$
$R_{2\,3} = 78$	$R_{10\,11} = 56$	$R_{18\,19} = 34$	$R_{26\,27} = 12$
$R_{2\,5} = 9$	$R_{10\,13} = 9$	$R_{18\,21} = 9$	$R_{26\,29} = 9$
$R_{4\,5} = 1$	$R_{12\,13} = 1$	$R_{20\,21} = 1$	$R_{28\,29} = 1$
$R_{5\,6} = 9$	$R_{13\,14} = 9$	$R_{21\,22} = 9$	$R_{29\,30} = 9$
$R_{6\,7} = 67$	$R_{14\,15} = 45$	$R_{22\,23} = 23$	$R_{30\,31} = 1$
$R_{6\,9} = 9$	$R_{14\,17} = 9$	$R_{22\,25} = 9$	$R_{30\,32} = 9$
$R_{8\,9} = 1$	$R_{16\,17} = 1$	$R_{24\,25} = 1$	

FIG. 11

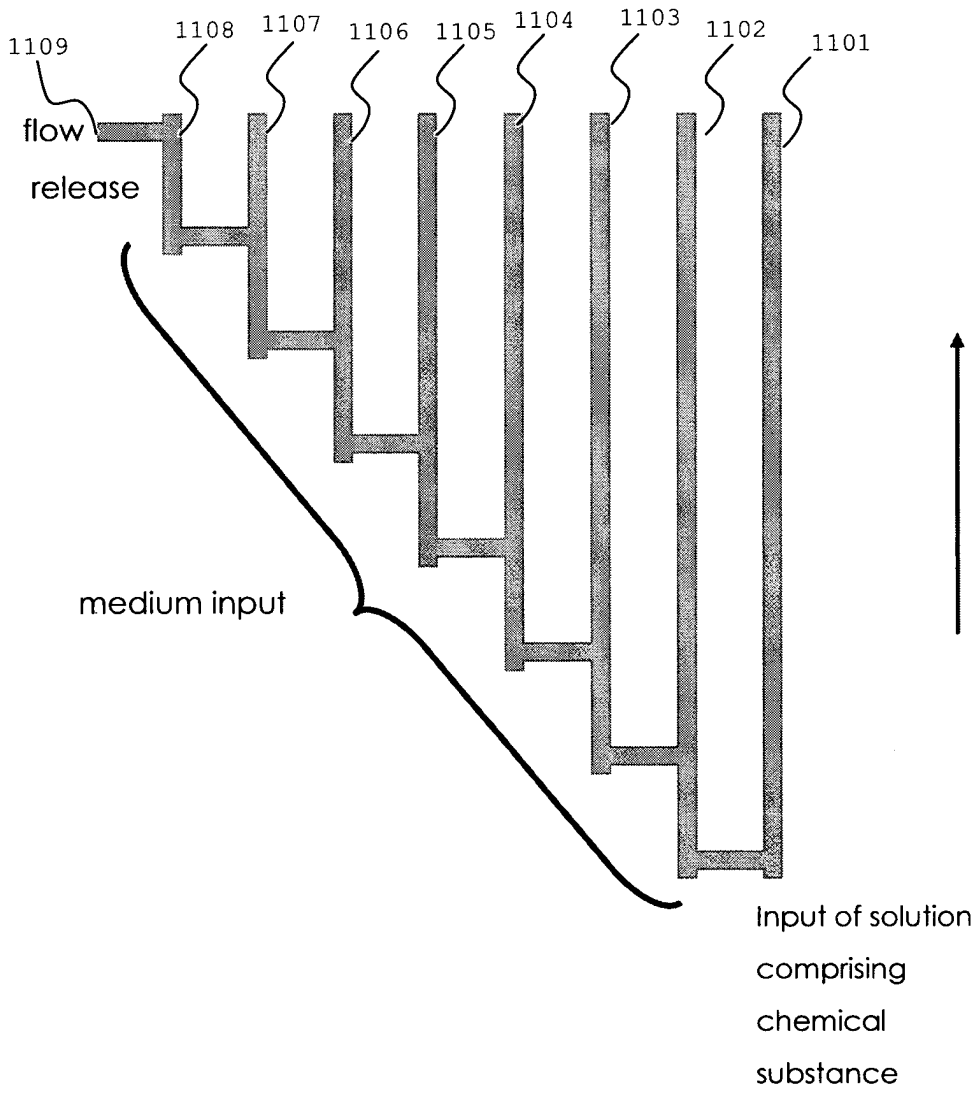

1109
1108
1107
1106
1105
1104
1103
1102
1101
flow release
medium input
Input of solution comprising chemical substance

FIG. 12

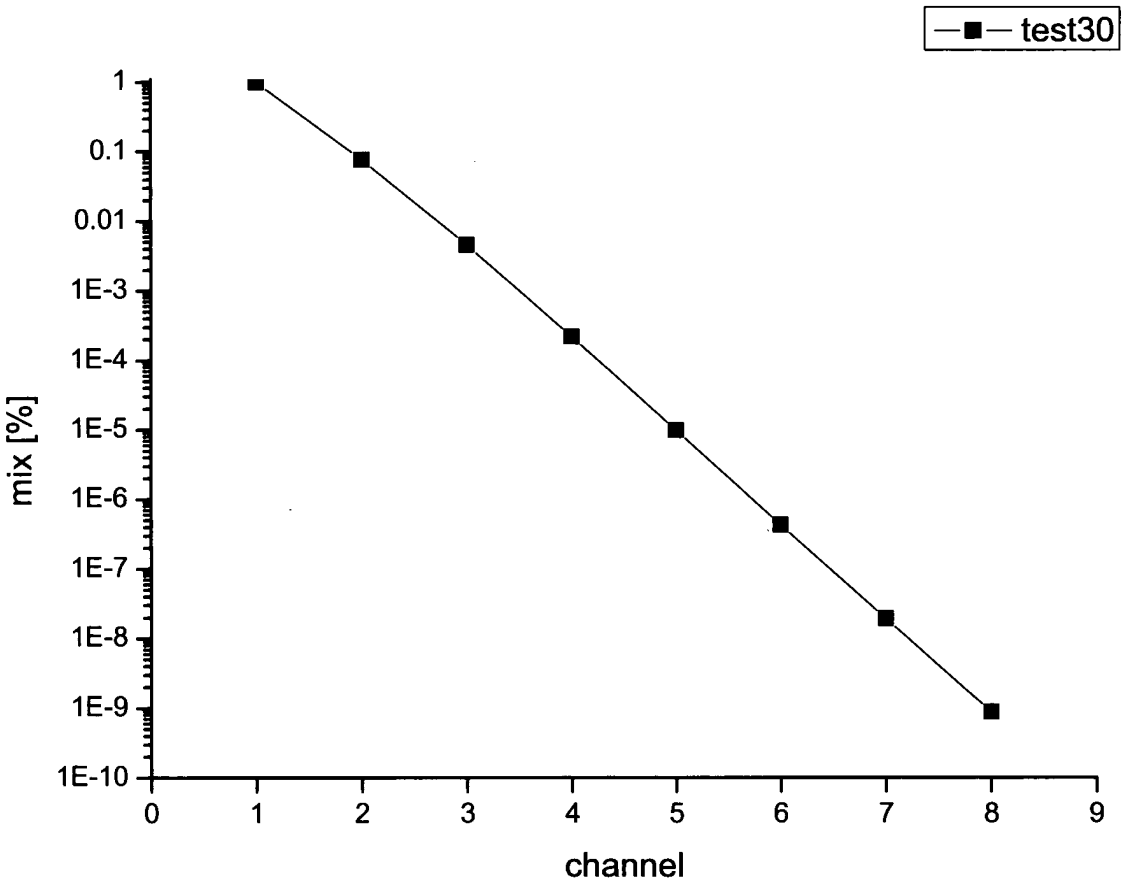

test30
1
0.1
0.01
1E-3
1E-4
1E-5
1E-6
1E-7
1E-8
1E-9
1E-10
mix [%]
0
1
2
3
4
5
6
7
8
9
channel

FIG. 13

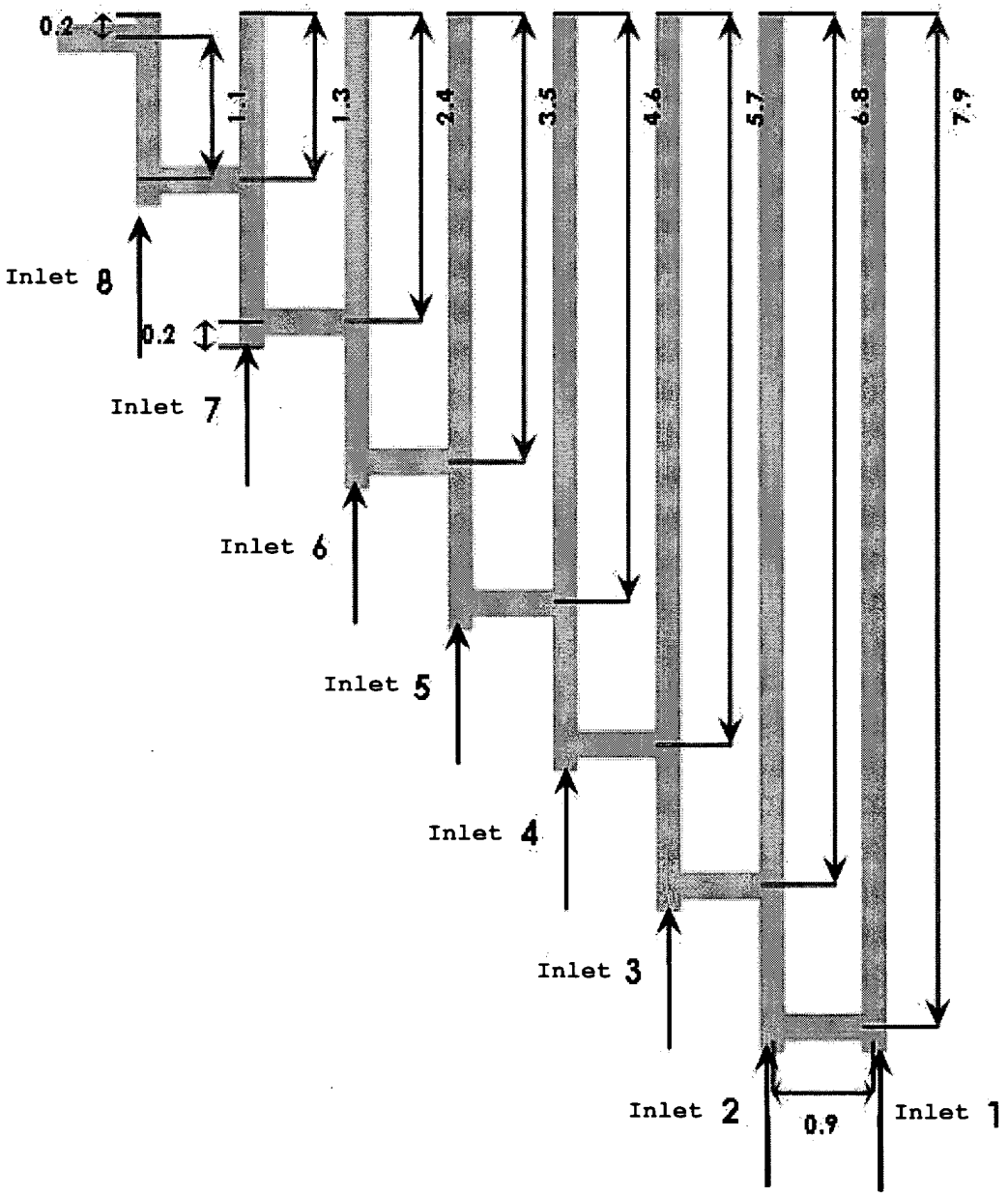

0.2
1.1
1.3
2.4
3.5
4.6
5.7
6.8
7.9
Inlet 8
0.2
Inlet 7
Inlet 6
Inlet 5
Inlet 4
Inlet 3
Inlet 2
0.9
Inlet 1

FIG. 14

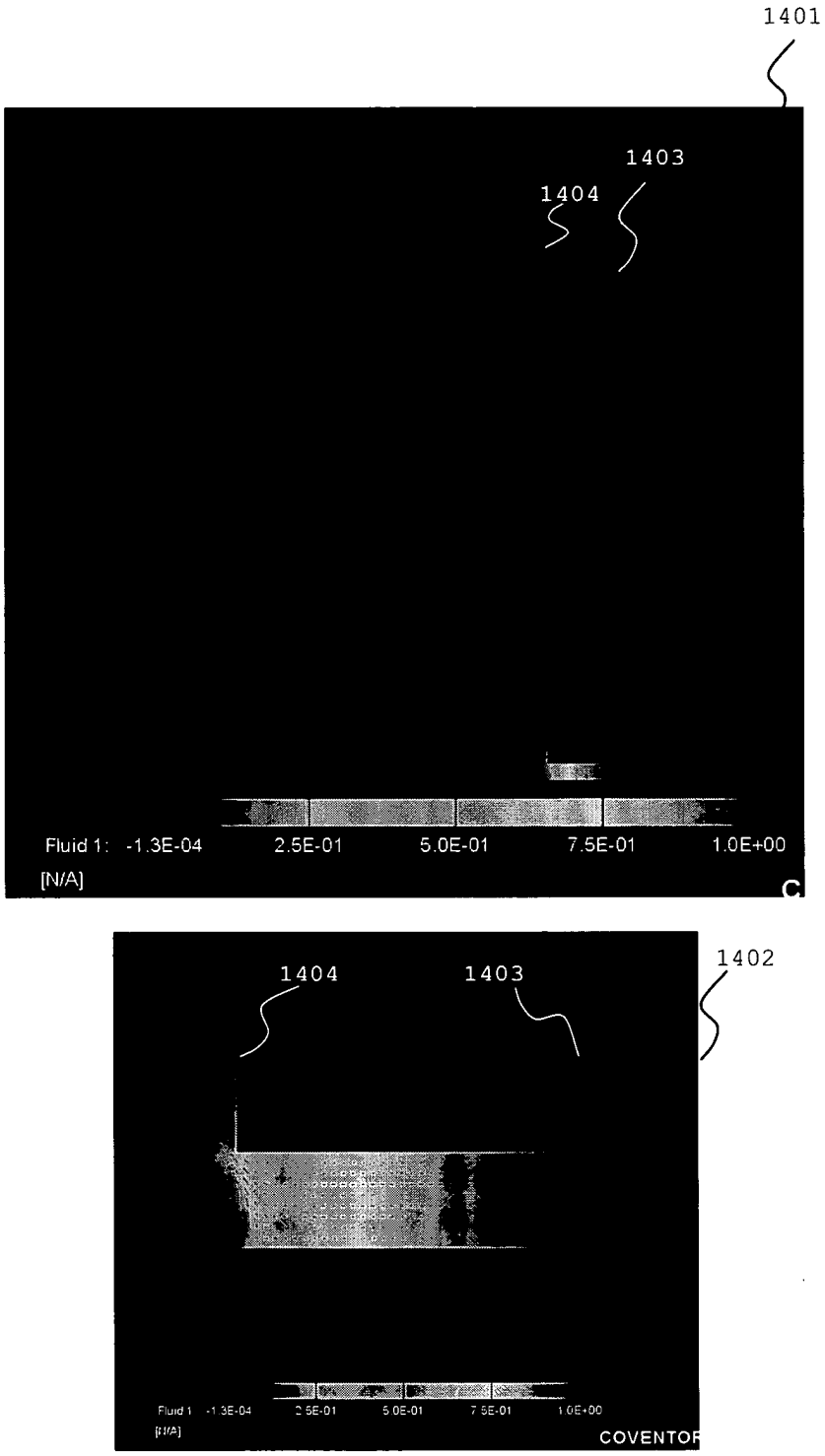

1401
1403
1404
Fluid 1: -1.3E-04
2.5E-01
5.0E-01
7.5E-01
1.0E+00
[N/A]
1402
1404
1403
COVENTOR

FIG. 15

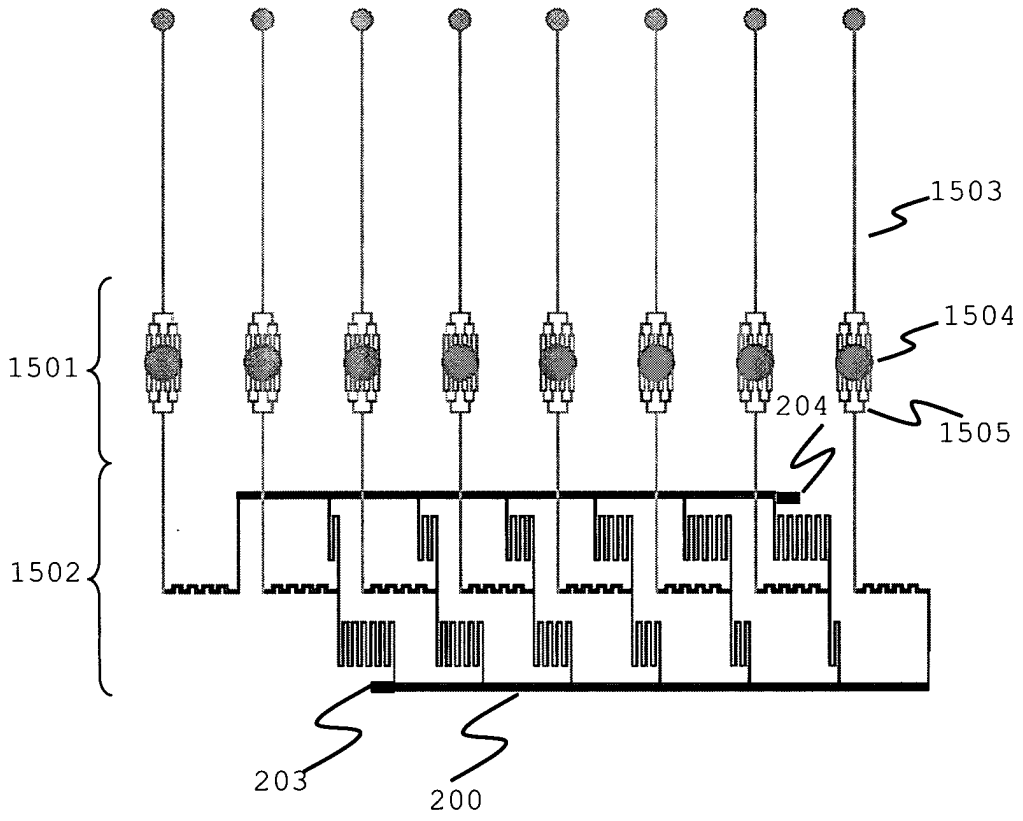


FIG. 16A

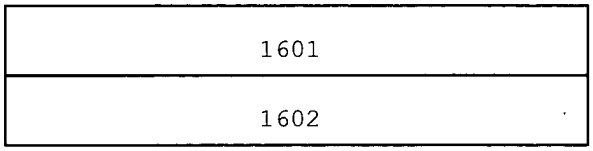


FIG. 16B

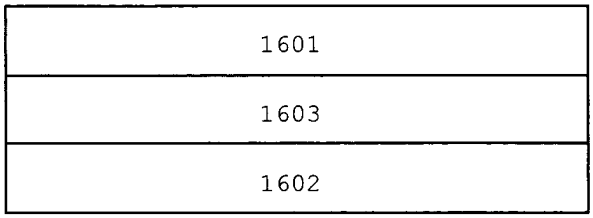


FIG. 17

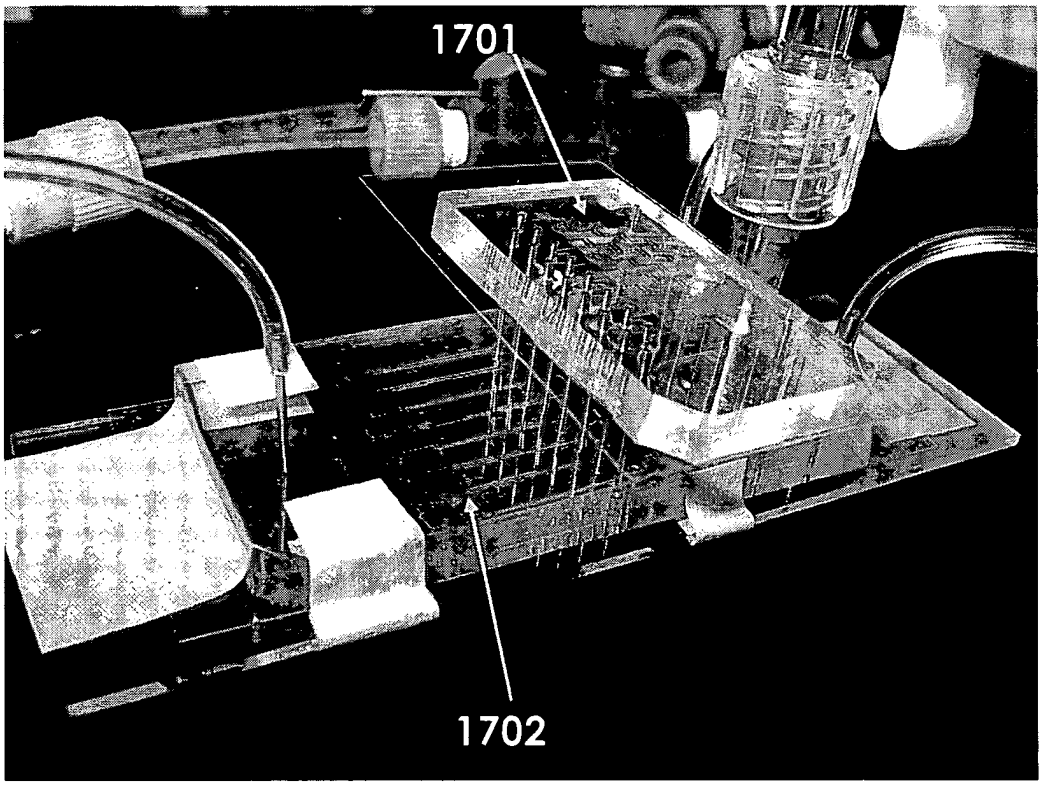


FIG. 18

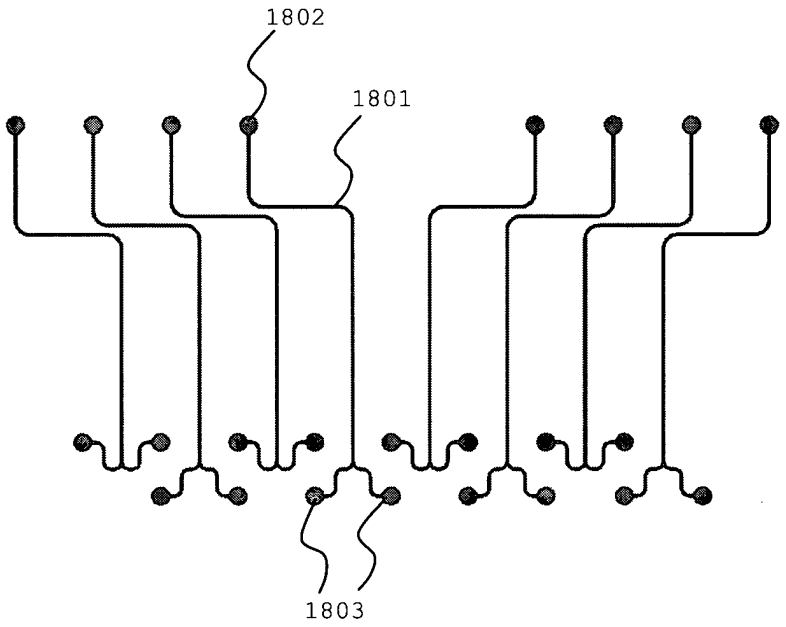


FIG. 19

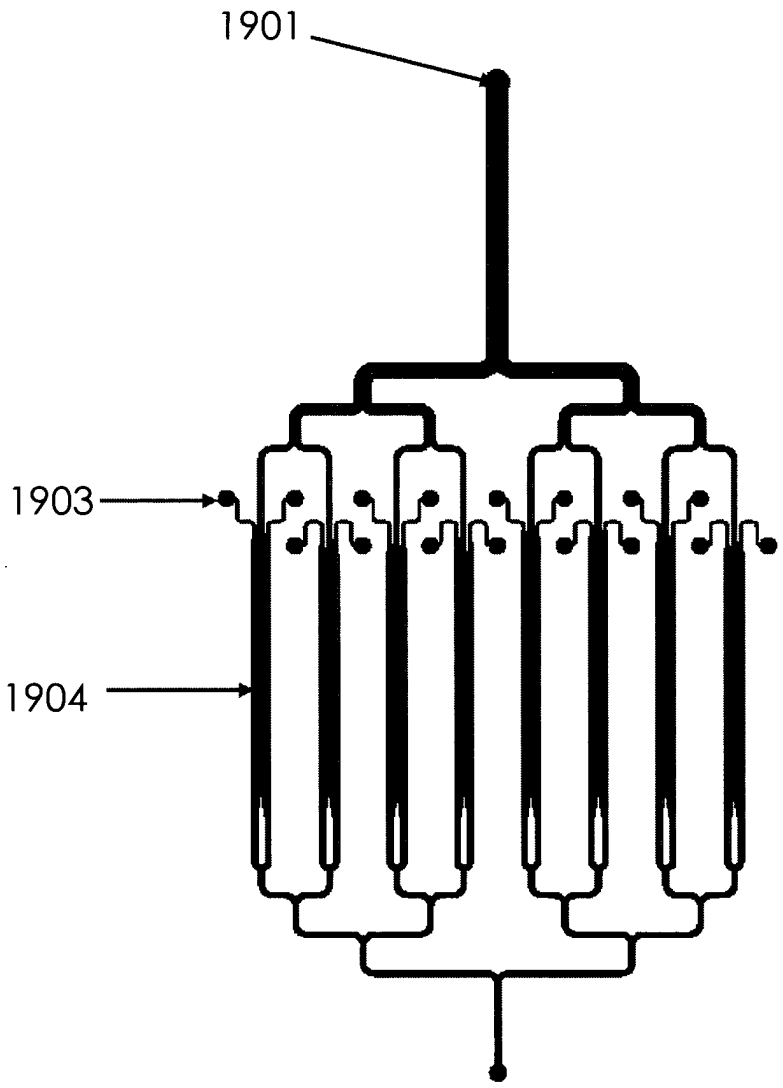


FIG. 20

