Fig. 1

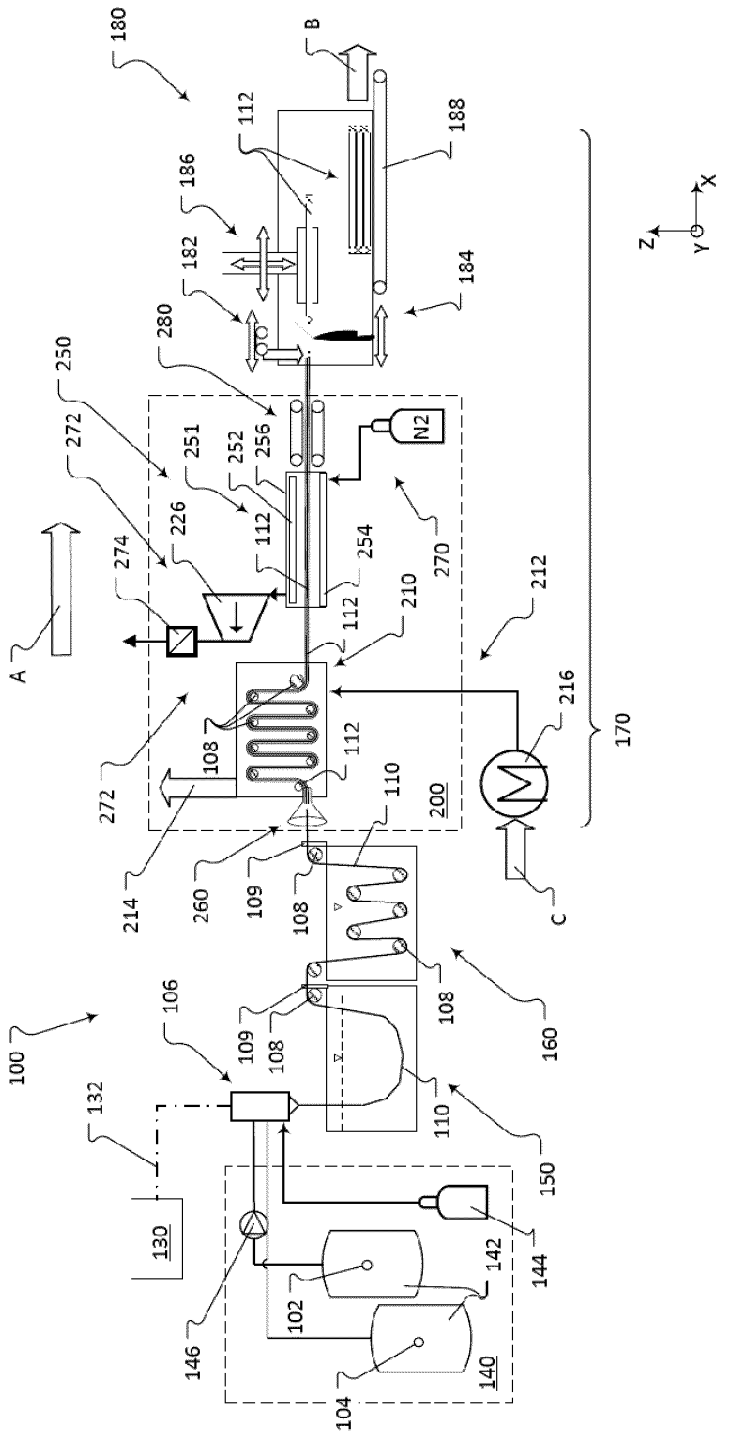

180
B
112
188
186
182
184
280
250
272
251
252
256
N2
226
112
254
270
274
A
112
210
212
216
170
108
112
272
110
200
214
260
109
108
C
108
160
100
106
109
108
110
132
150
130
142
144
102
146
140
104
X
Z
Y

Fig. 2

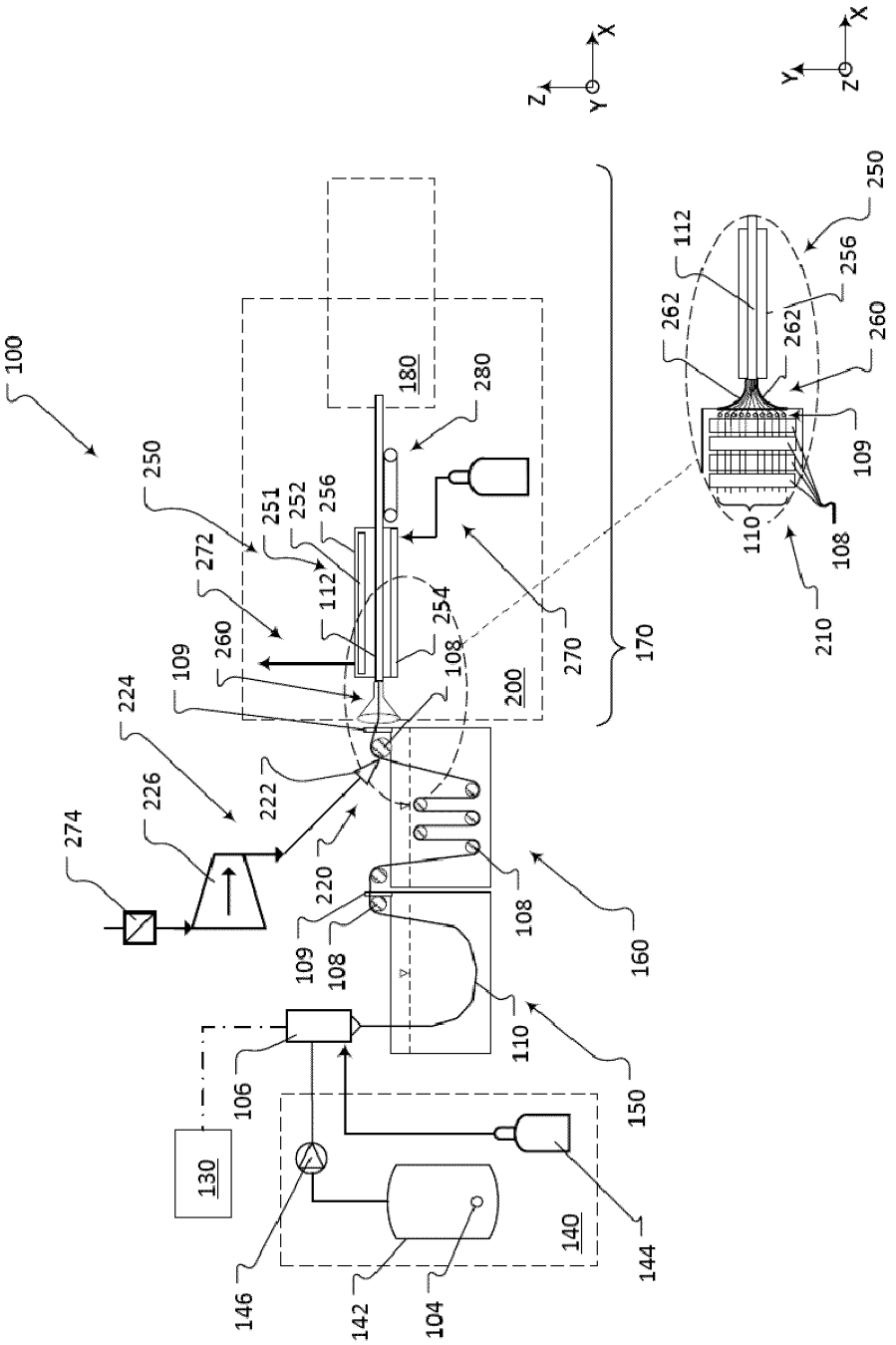

100
250
251
252
256
272
112
254
260
109
108
224
226
274
222
220
109
108
108
160
110
150
106
130
140
146
142
104
144
180
280
200
270
170
Z
X
Y
112
262
262
256
250
260
109
110
108
210

Fig. 3

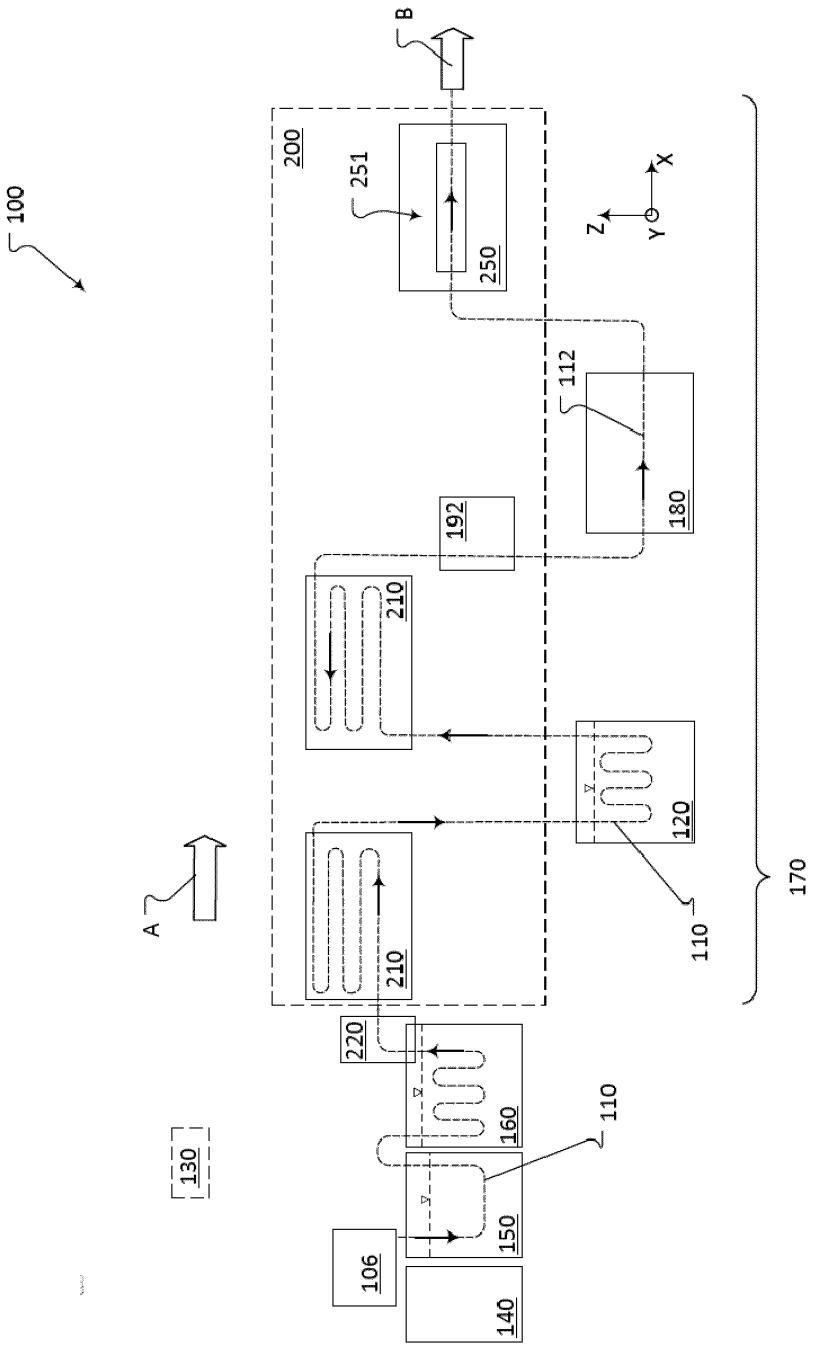

100
200
251
250
B
X
Z
Y
112
180
192
210
120
110
170
A
210
220
160
110
130
150
106
140

Fig. 4

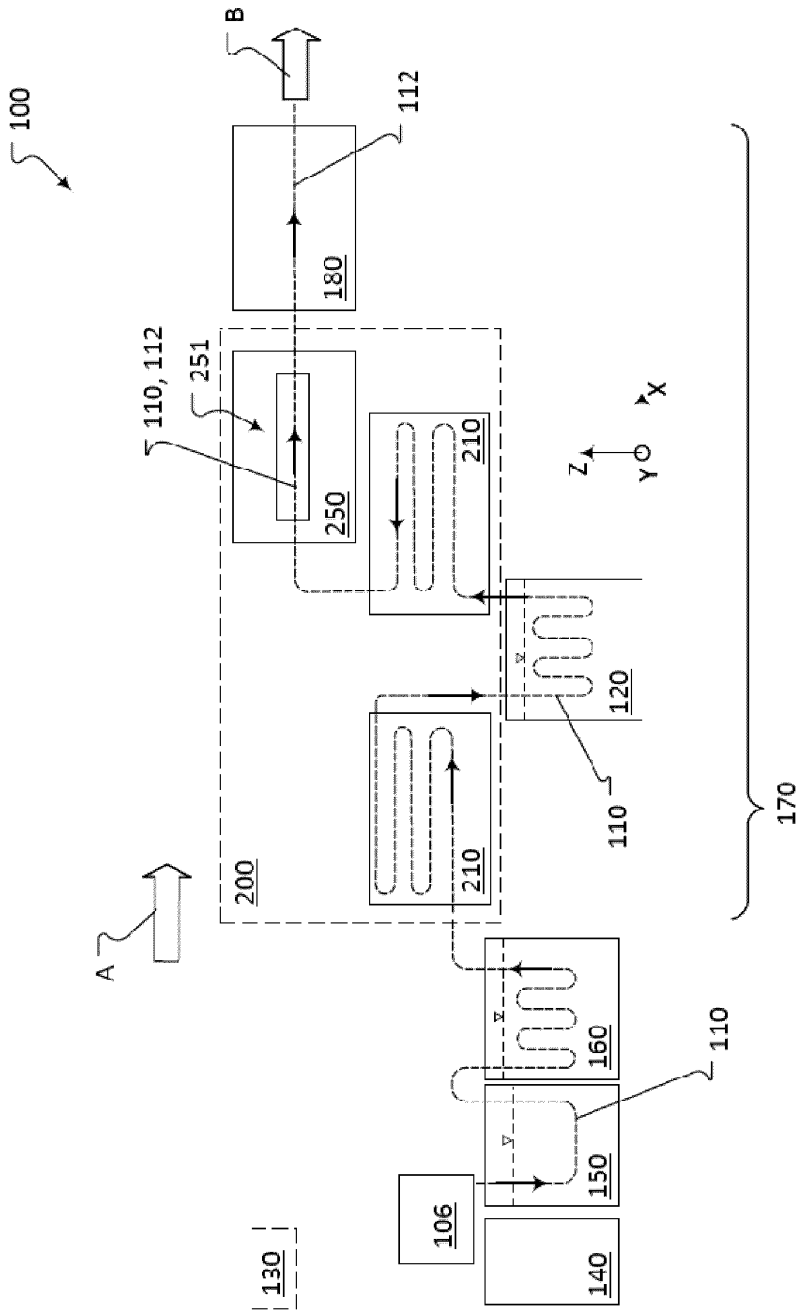

100
B
112
180
110, 112
251
250
210
X
Z
Y
120
110
170
200
210
A
160
110
150
106
140
130

Fig. 5

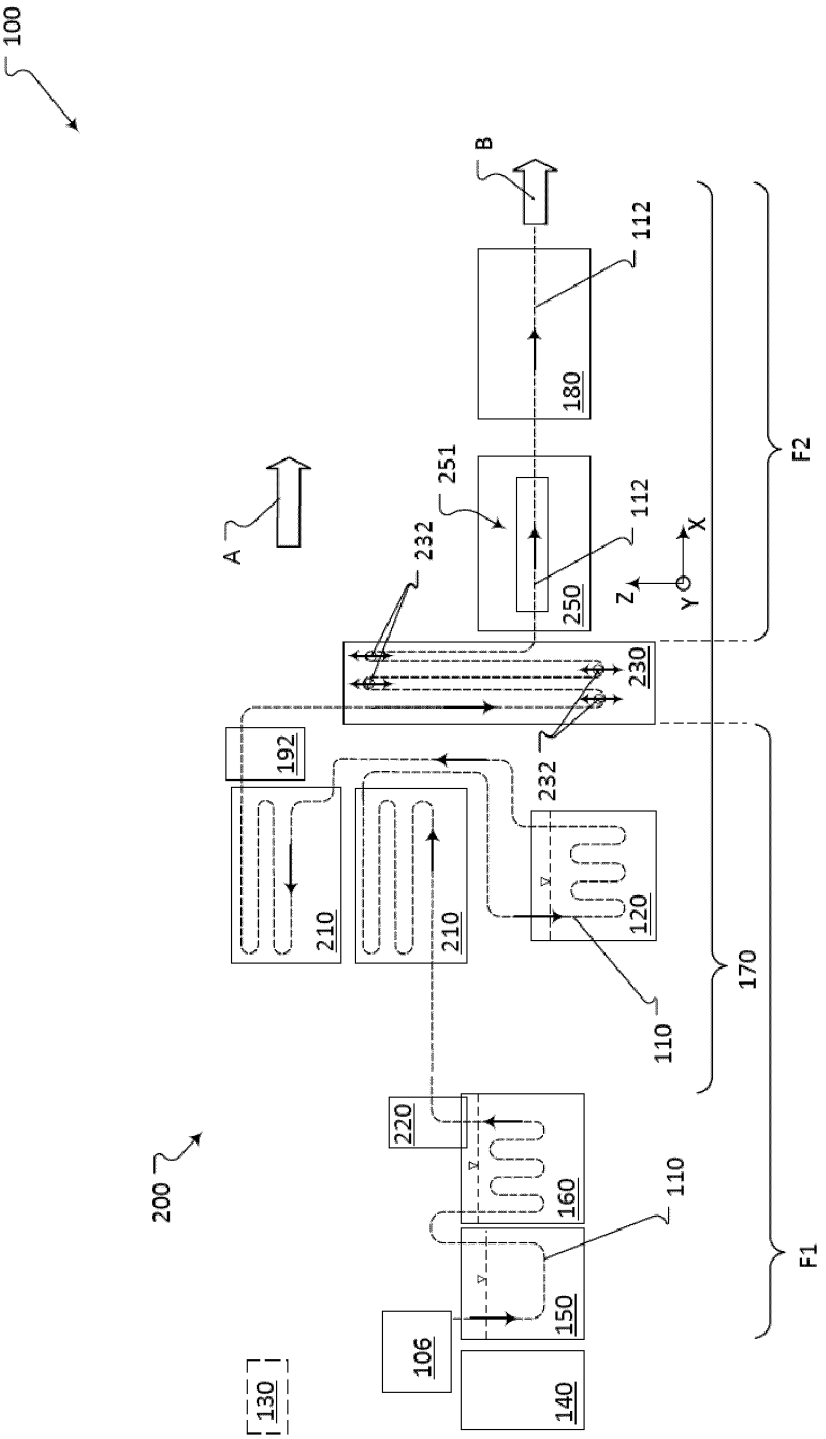

100
B
112
180
F2
251
A
232
112
250
X
Z
Y
230
192
232
210
210
120
110
170
220
160
110
200
150
106
140
130
F1

Fig. 6

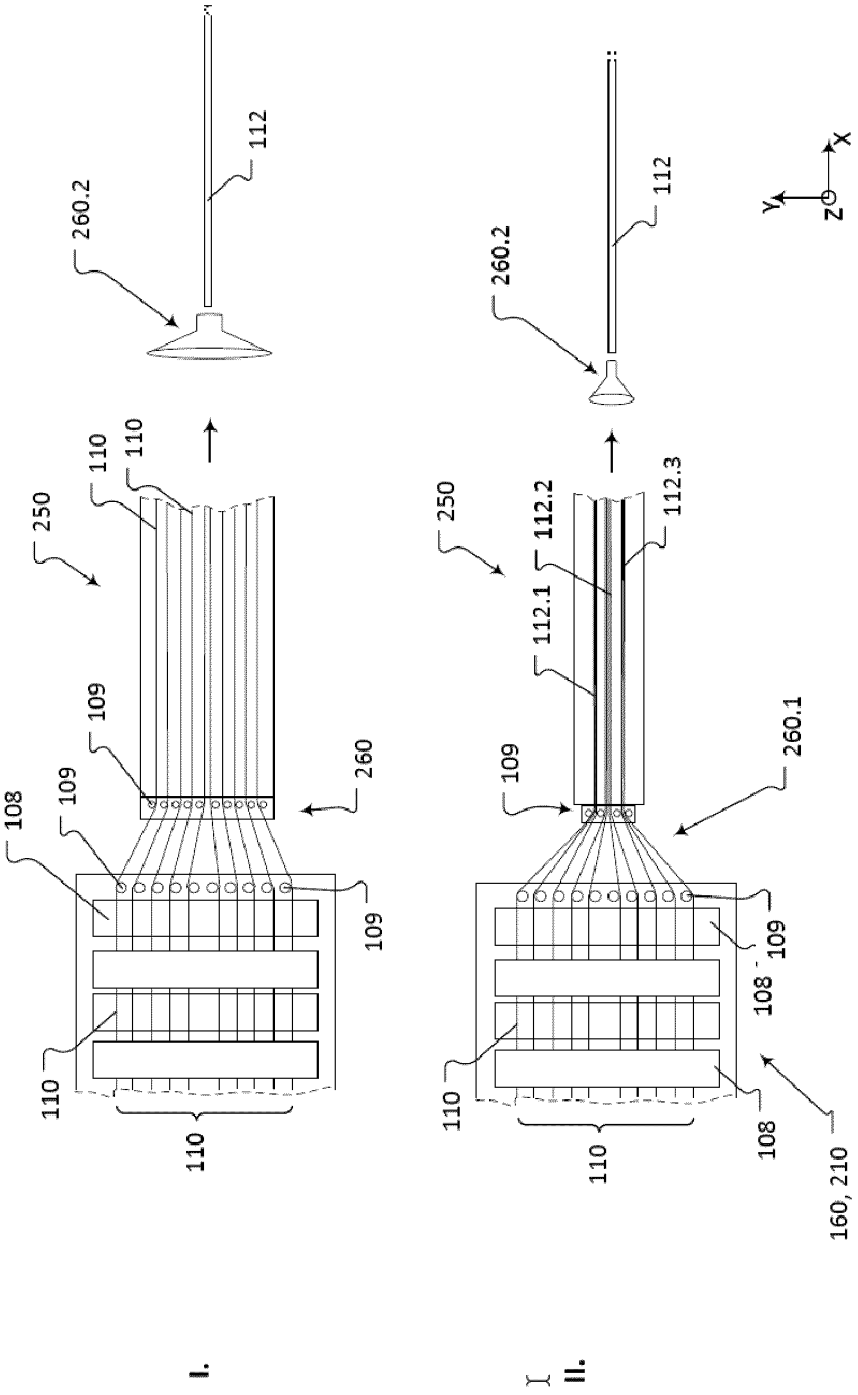

260.2
112
250
110
110
109
108
109
260
109
110
110
I.
260.2
112
250
112.2
112.3
112.1
109
260.1
109
108
110
110
108
160, 210
II.
X
Y
Z

Fig. 7

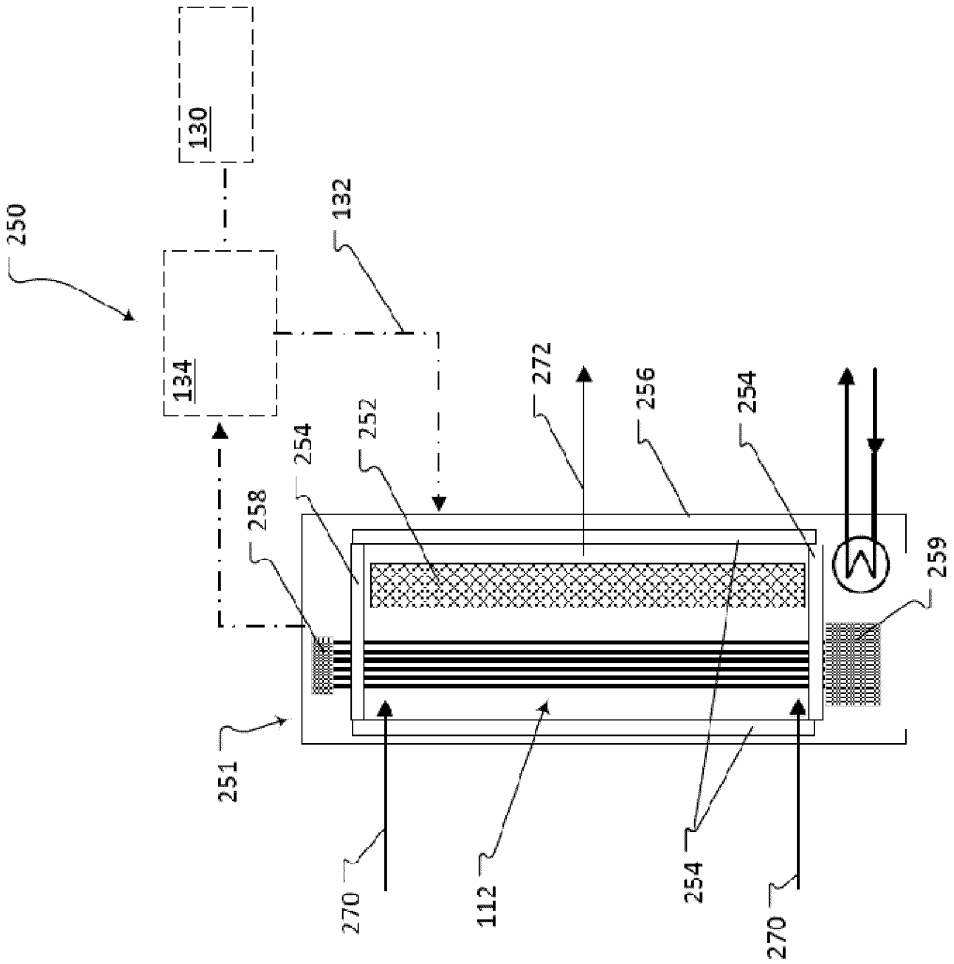


Fig. 8

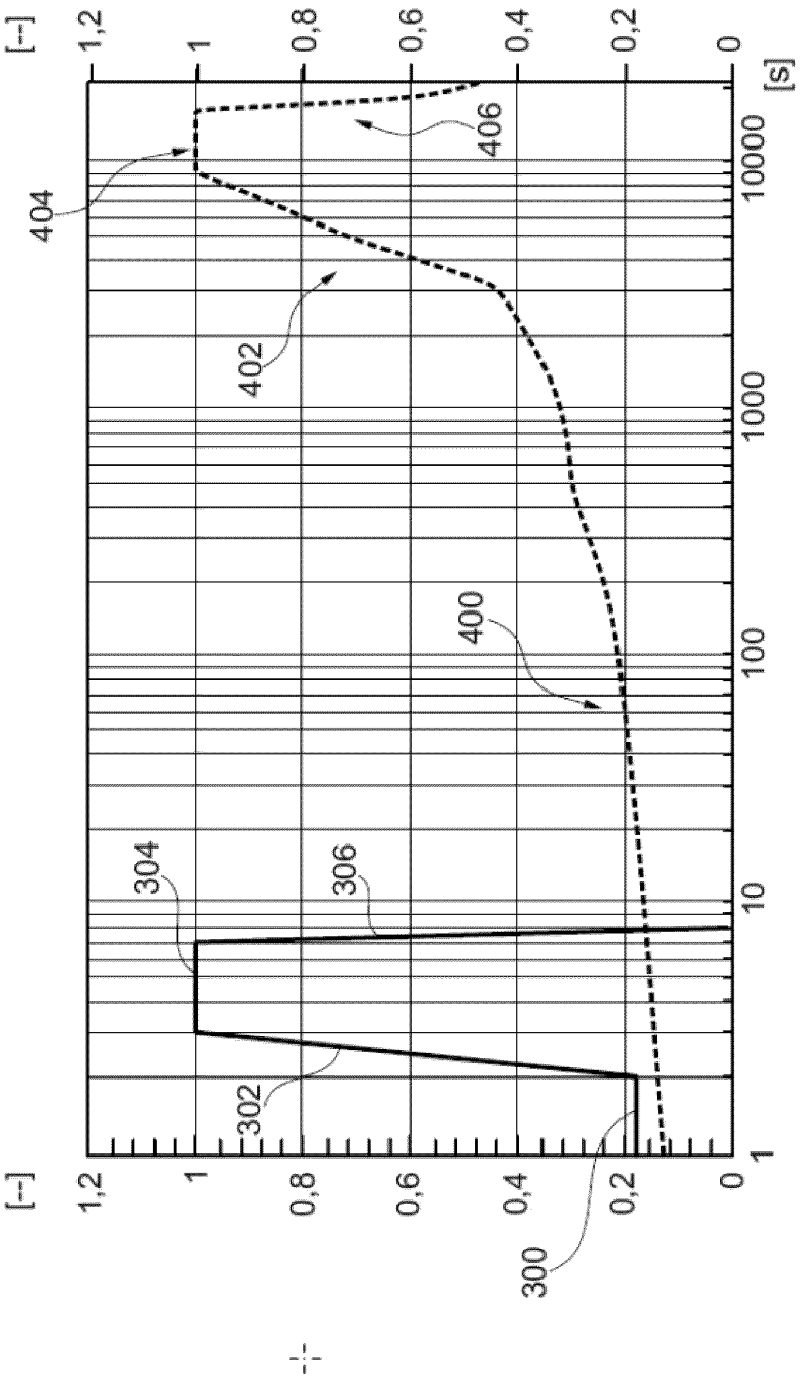

[--]
1,2
1
0,8
0,6
0,4
0,2
0
[s]
10000
1000
100
10
1
404
406
402
400
304
306
302
300

Fig. 9

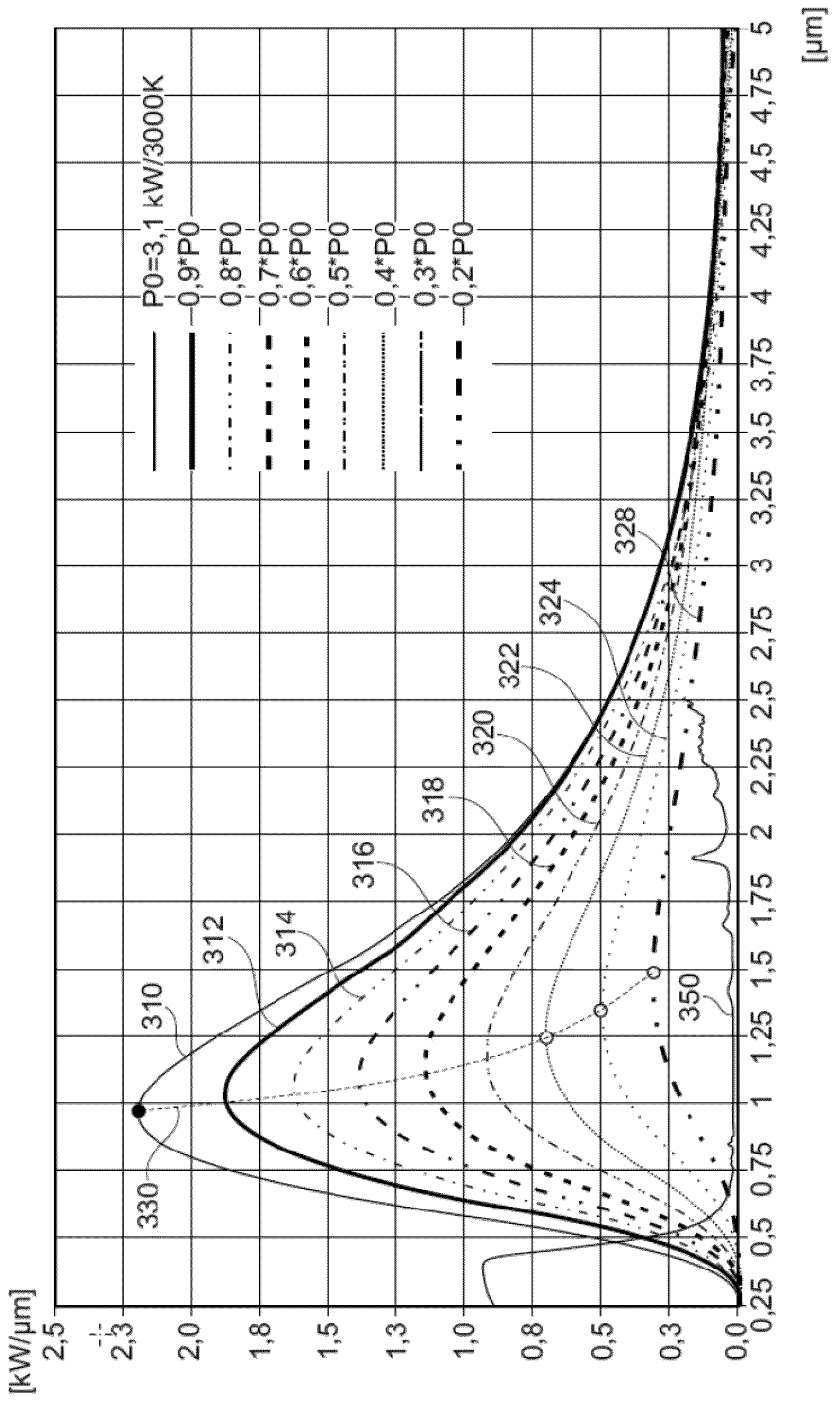

P0=3,1 kW/3000K
0,9*P0
0,8*P0
0,7*P0
0,6*P0
0,5*P0
0,4*P0
0,3*P0
0,2*P0
[kW/µm]
[µm]
310
312
314
316
318
320
322
324
328
330
350

Fig. 10

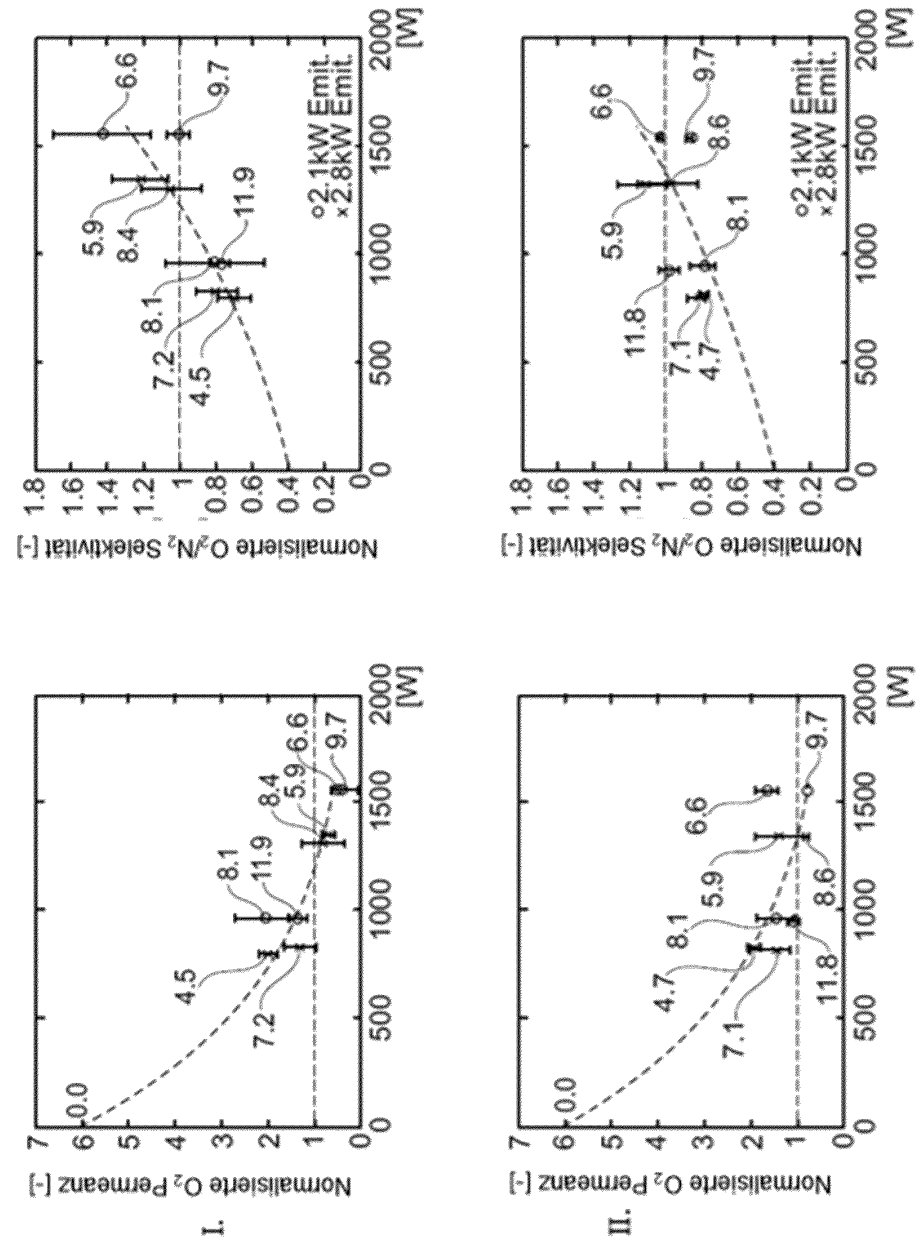

Normalisierte O2/N2 Selektivität [-]
Normalisierte O2 Permeanz [-]
[W]
2000
1500
1000
500
0
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
7
6
5
4
3
2
1
0.0
2.1kW Emit.
2.8kW Emit.
6.6
9.7
5.9
8.4
11.9
8.1
7.2
4.5
8.6
11.8
7.1
4.7
I.
II.

Fig. 11

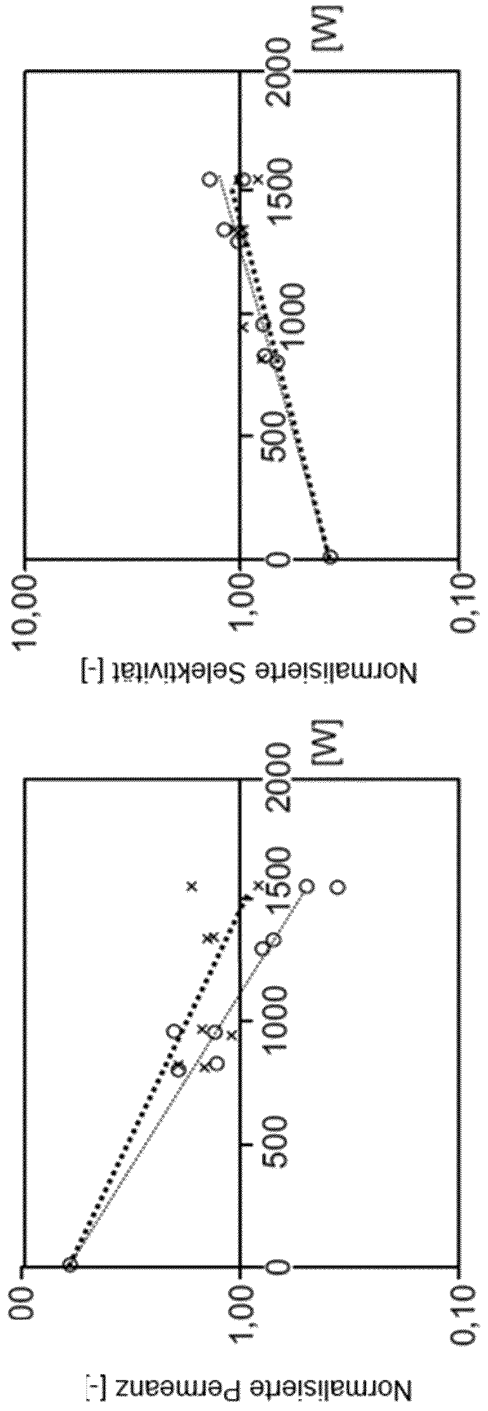
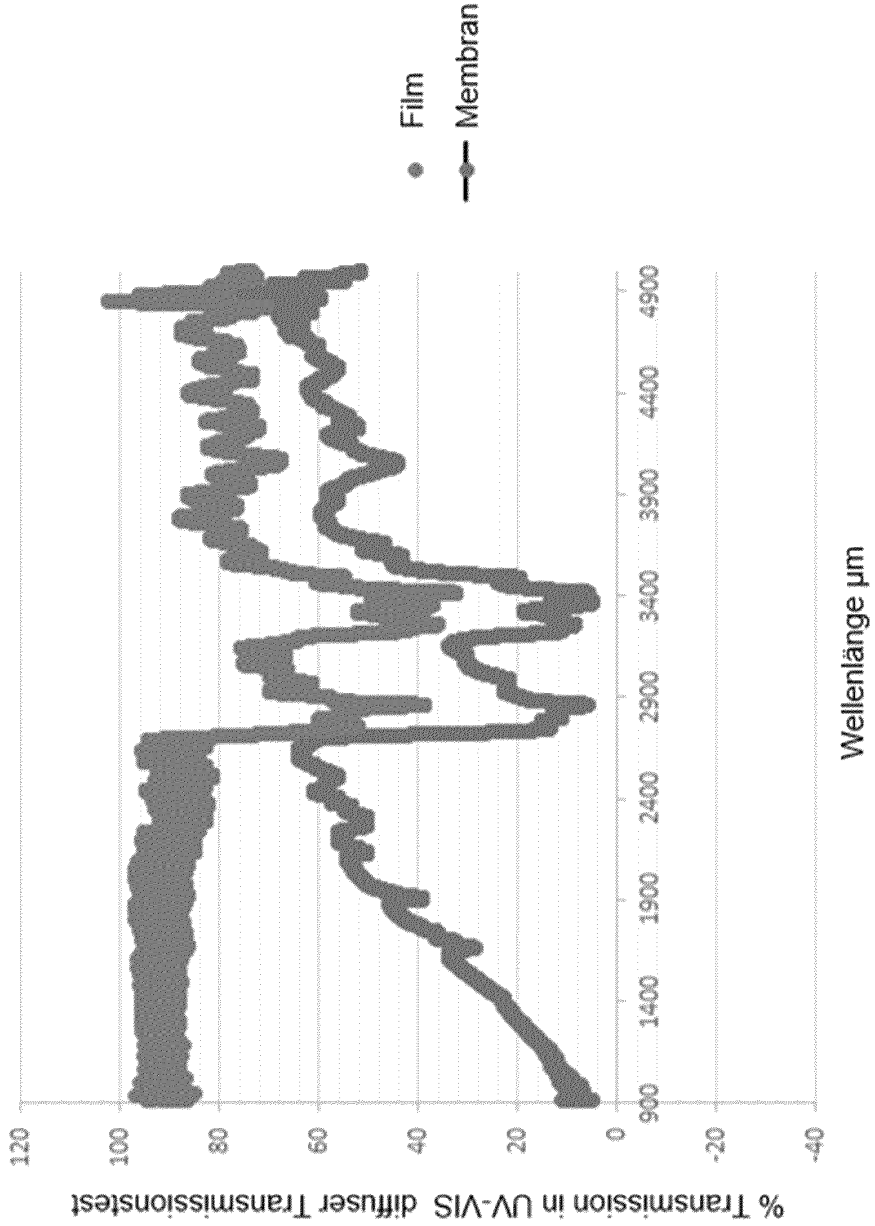

[W]
2000
1500
1000
500
0
10,00
1,00
0,10
Normalisierte Selektivität [-]
[W]
2000
1500
1000
500
0
00
1,00
0,10
Normalisierte Permeanz [-]

Fig. 12


Film
Membran
% Transmission in UV-VIS diffuser Transmissionstest
120
100
80
60
40
20
0
-20
-40
900
1400
1900
2400
2900
3400
3900
4400
4900
Wellenlänge µm