Fig. 1

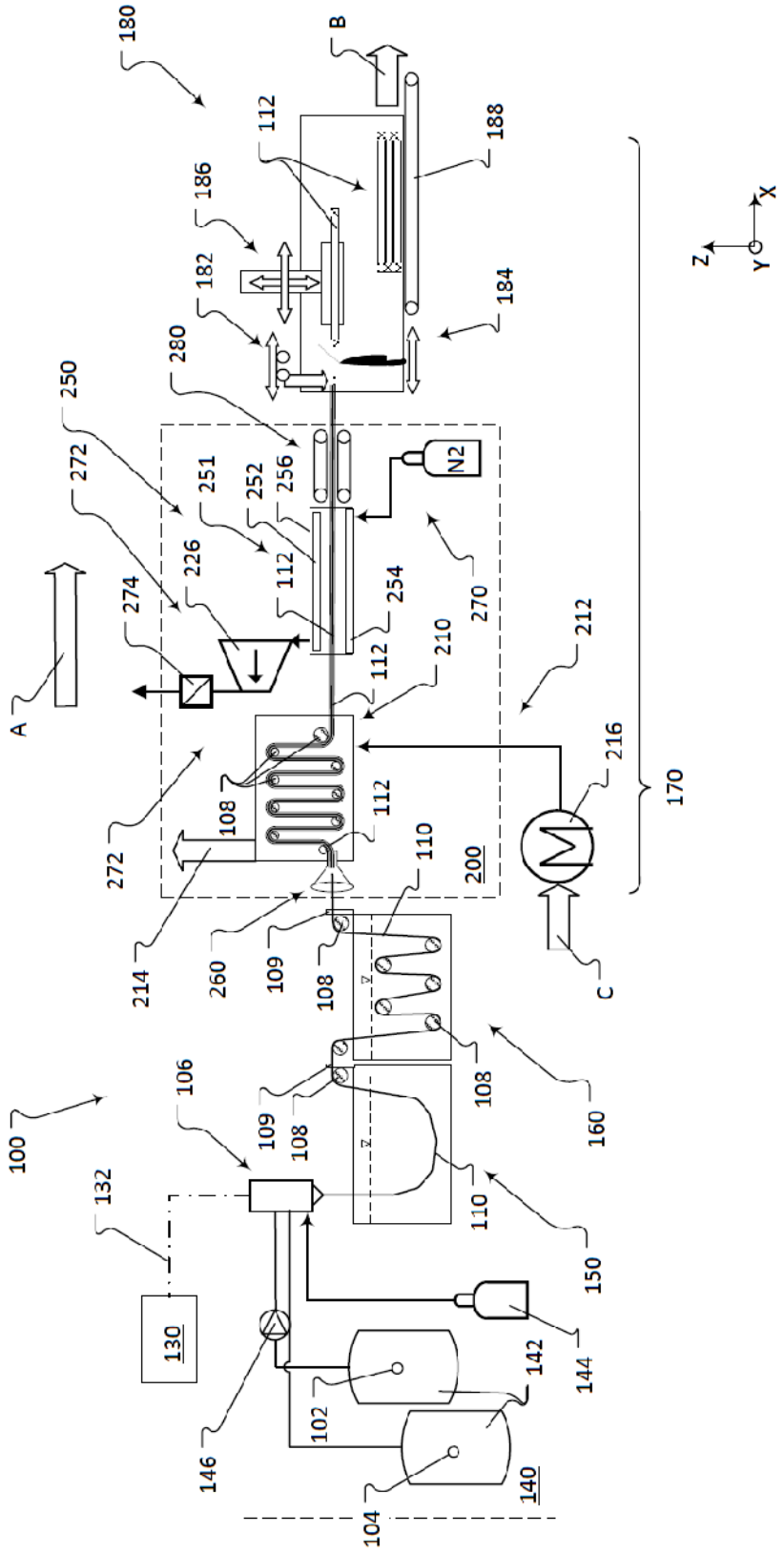

180
B
112
188
186
182
184
280
250
272
251
252
256
N2
226
112
254
270
274
A
112
210
212
216
170
108
112
272
110
200
214
260
109
108
C
108
160
100
106
109
108
132
110
150
130
144
142
102
146
140
104
Z
X
Y

Fig. 2

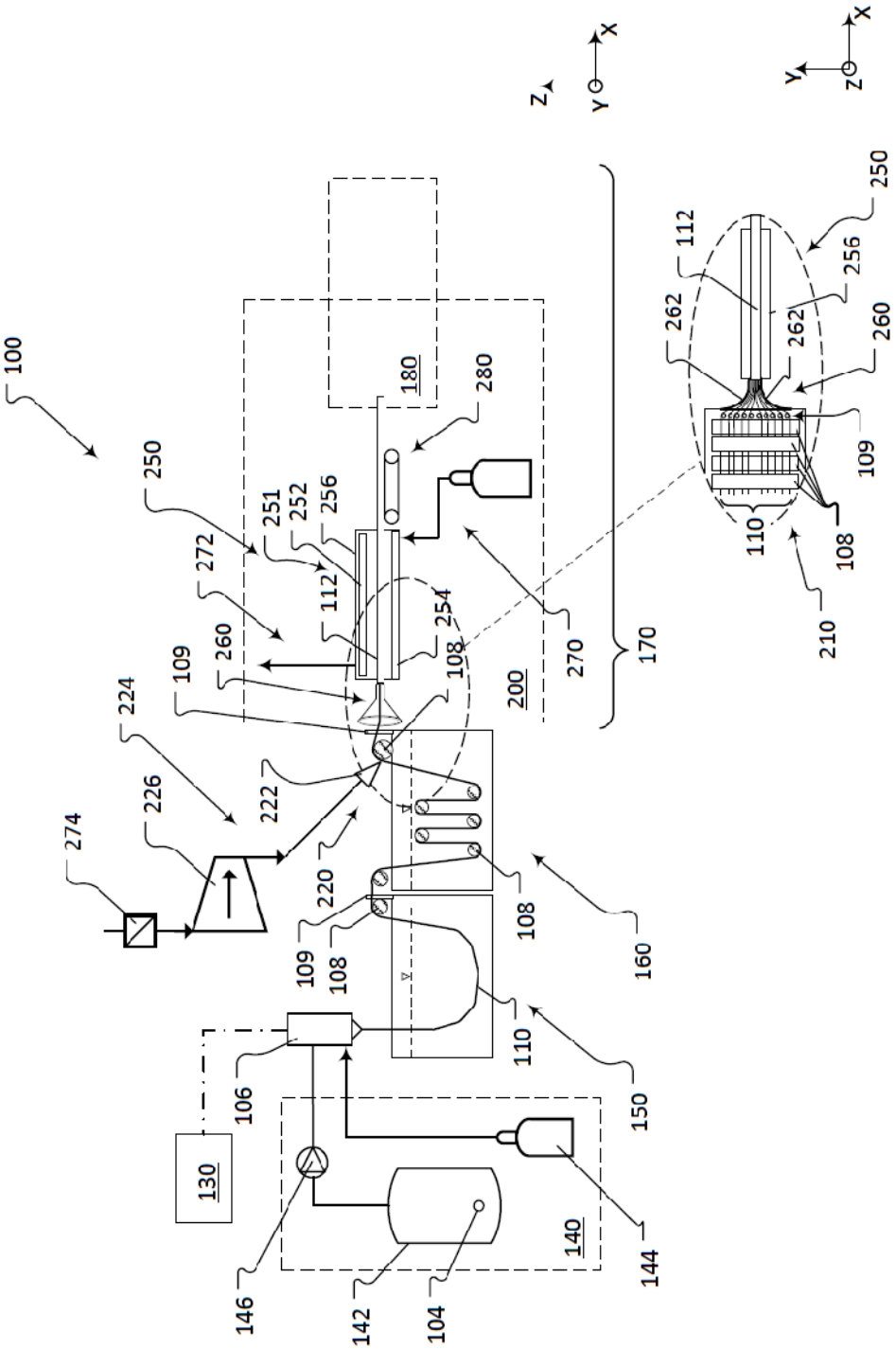

100
250
251
252
256
272
112
254
260
109
108
224
226
274
222
220
180
280
200
270
170
160
110
150
106
130
140
144
146
142
104
Z
Y
X
262
210

Fig. 3

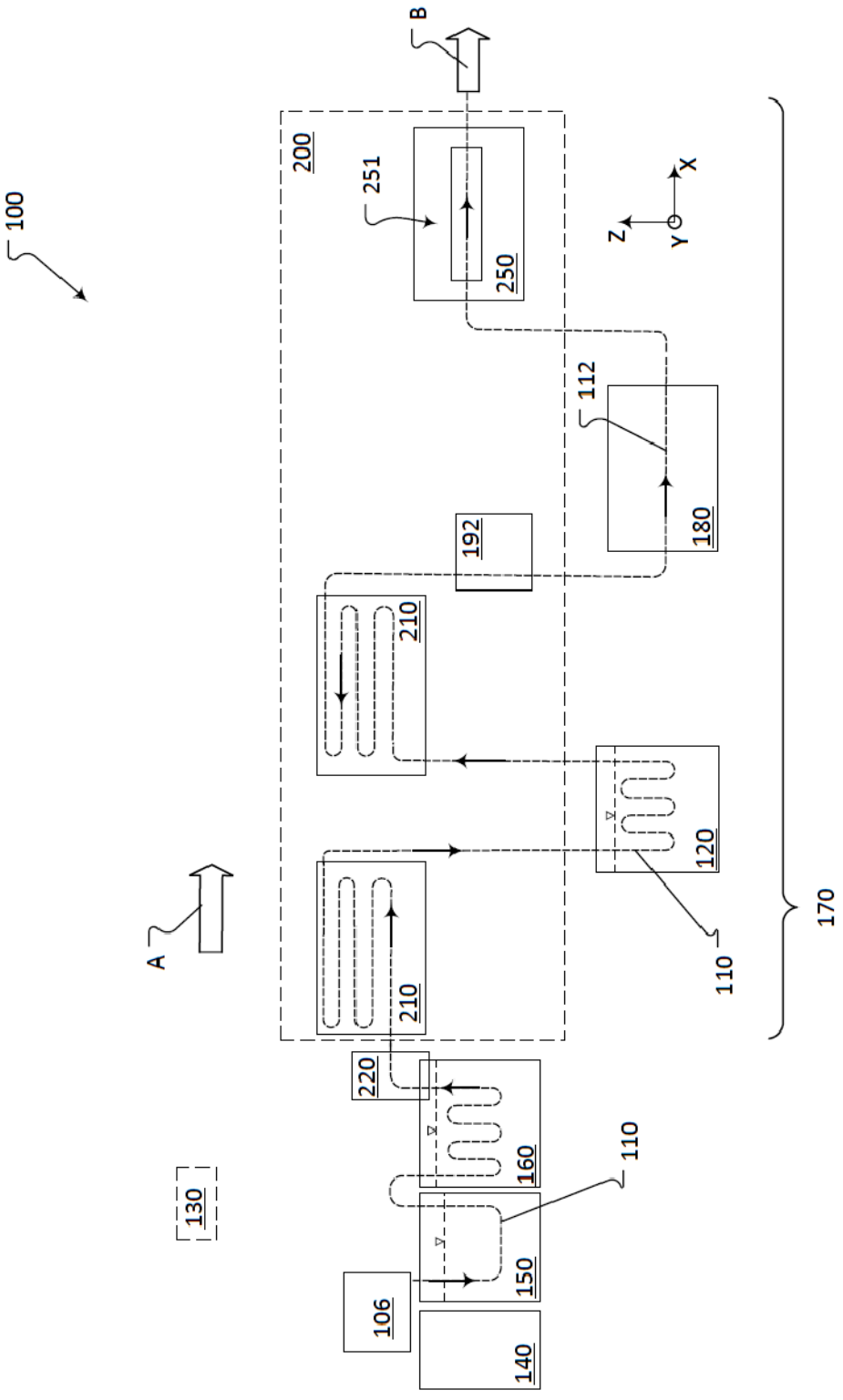

100
200
251
250
B
X
Z
Y
112
180
192
210
120
110
170
A
210
220
160
110
130
150
106
140

Fig. 4

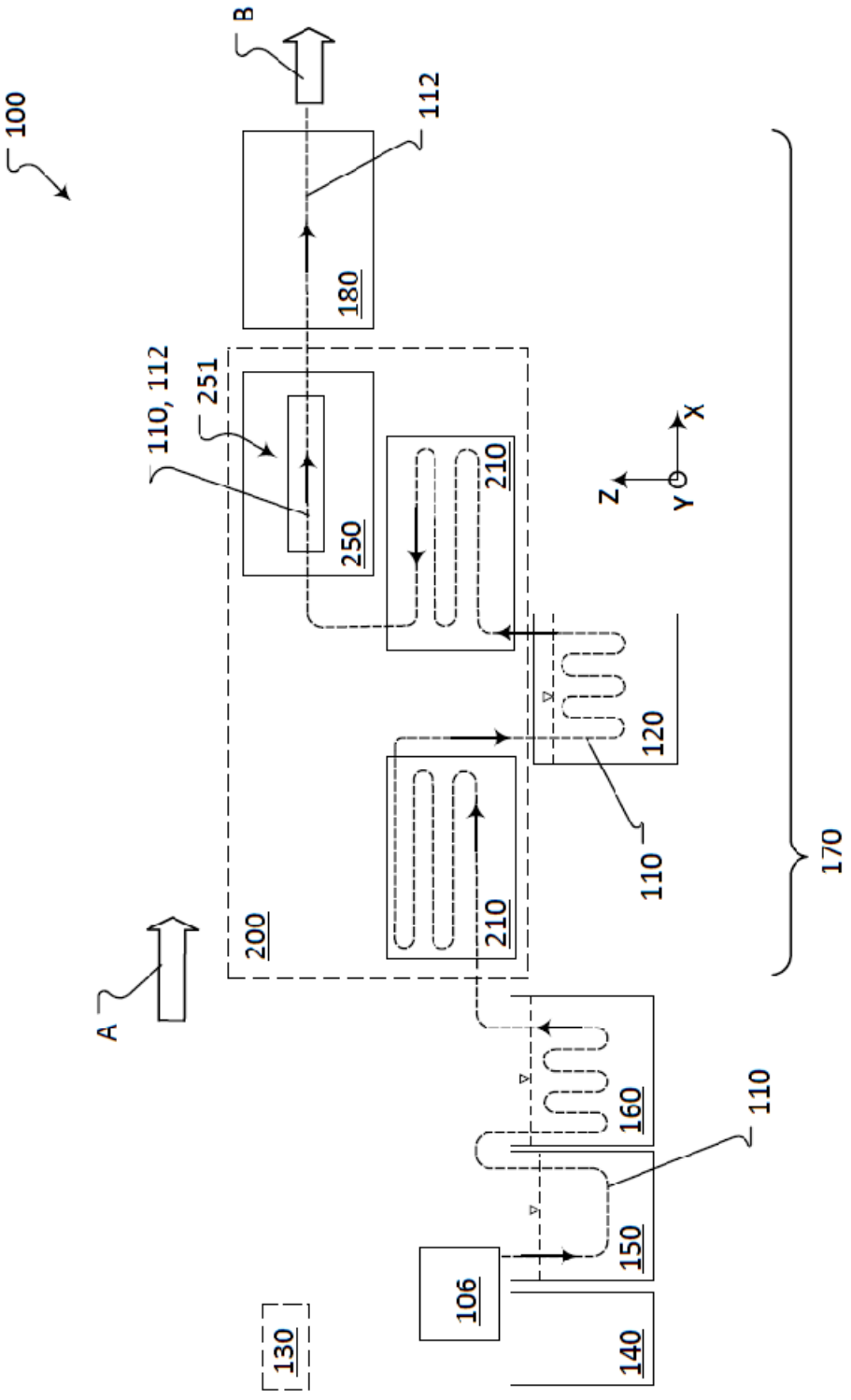

100
B
112
180
110, 112
251
250
210
X
Z
Y
120
110
170
210
200
A
160
110
150
106
140
130

Fig. 5

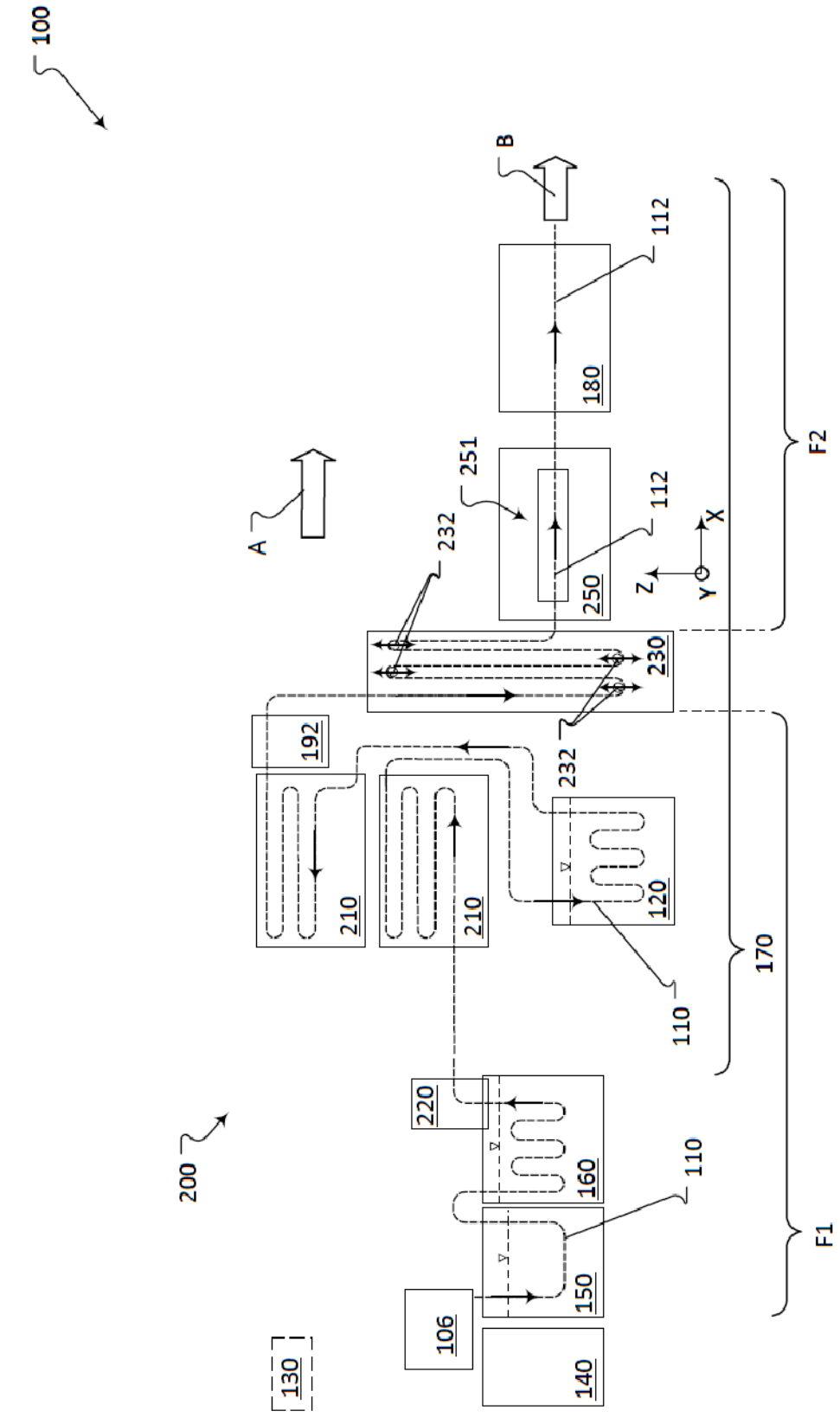

100
200
A
B
X
Y
Z
F1
F2
106
110
112
120
130
140
150
160
170
180
192
210
220
230
232
250
251

Fig. 6

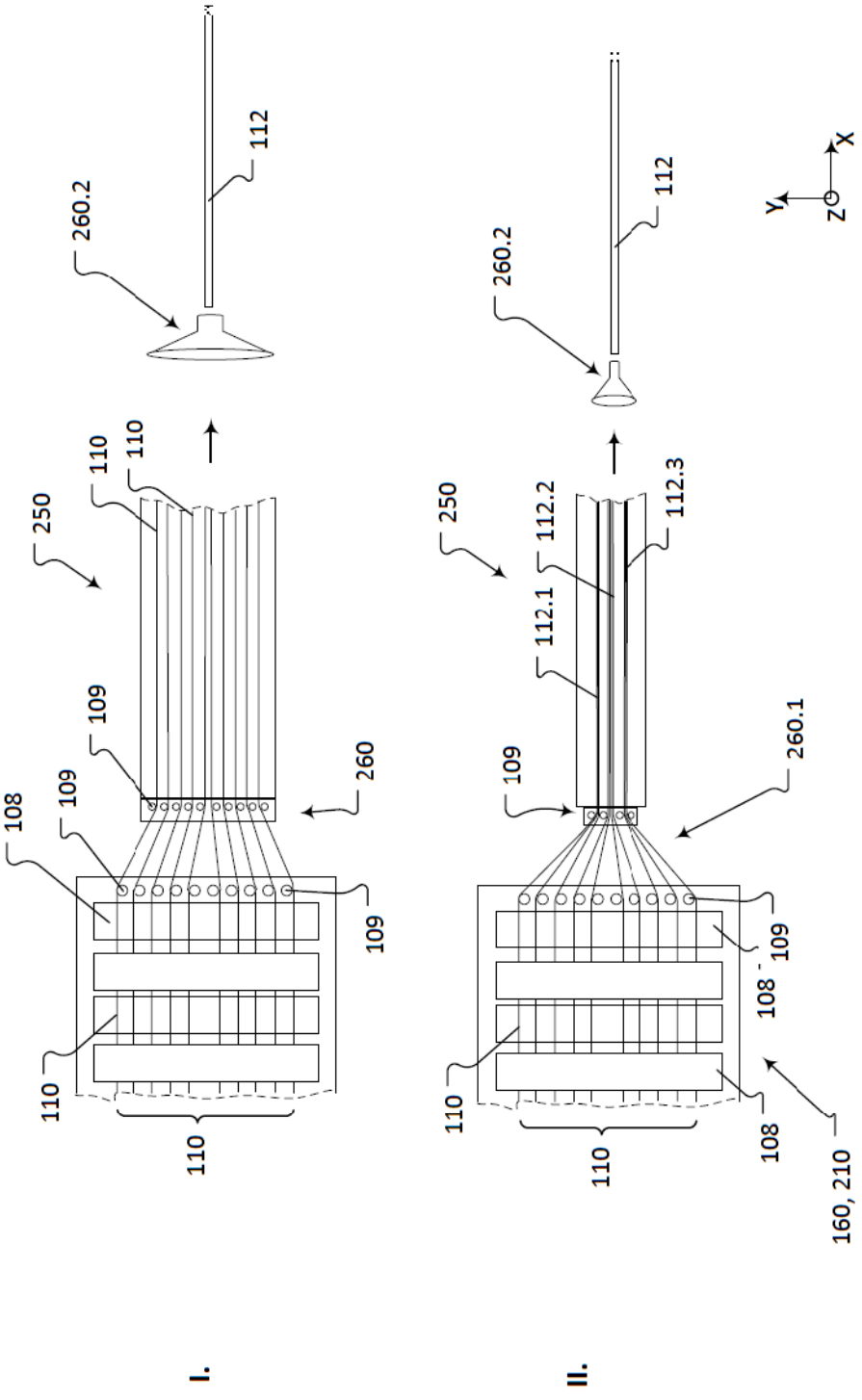

260.2
112
250
110
110
109
109
108
260
109
110
110
I.
260.2
112
250
112.2
112.3
112.1
109
260.1
109
108
110
110
108
160, 210
II.
Y
X
Z

Fig. 7

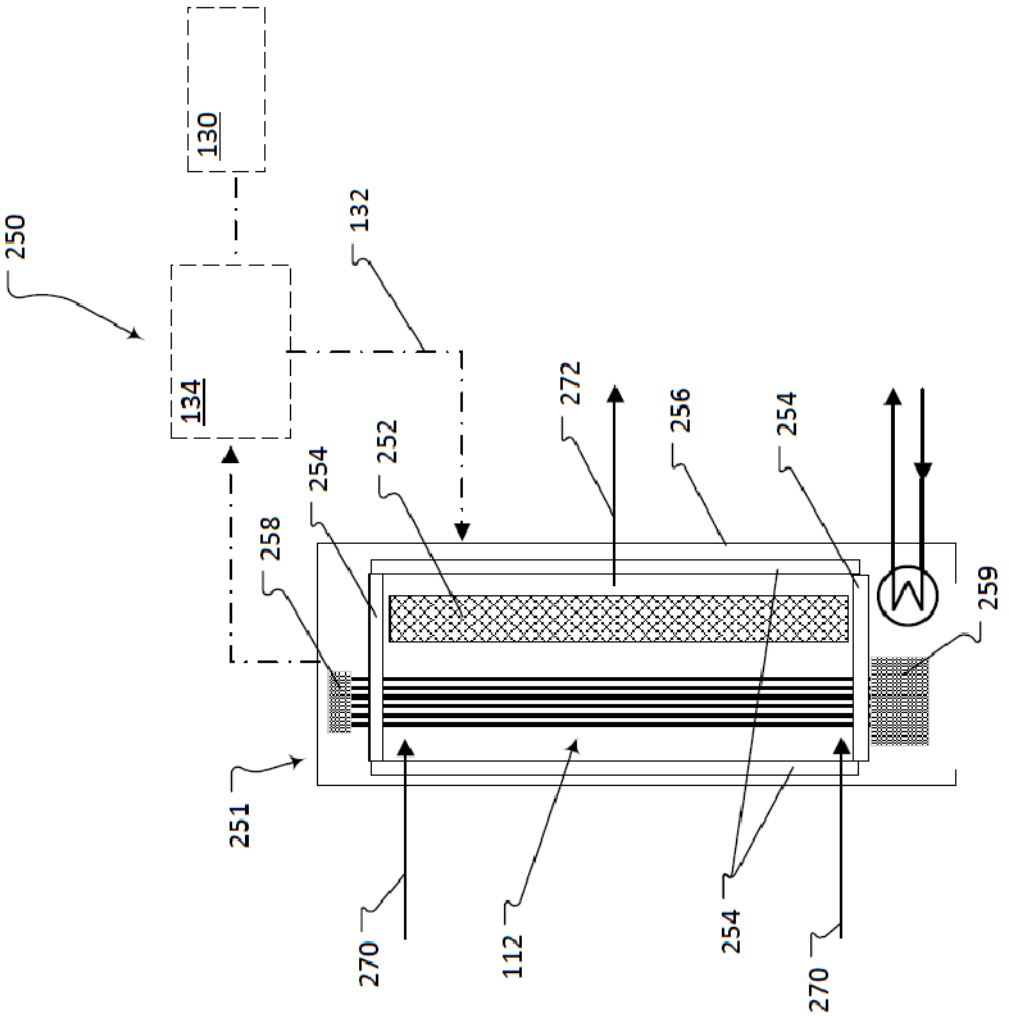


Fig. 8

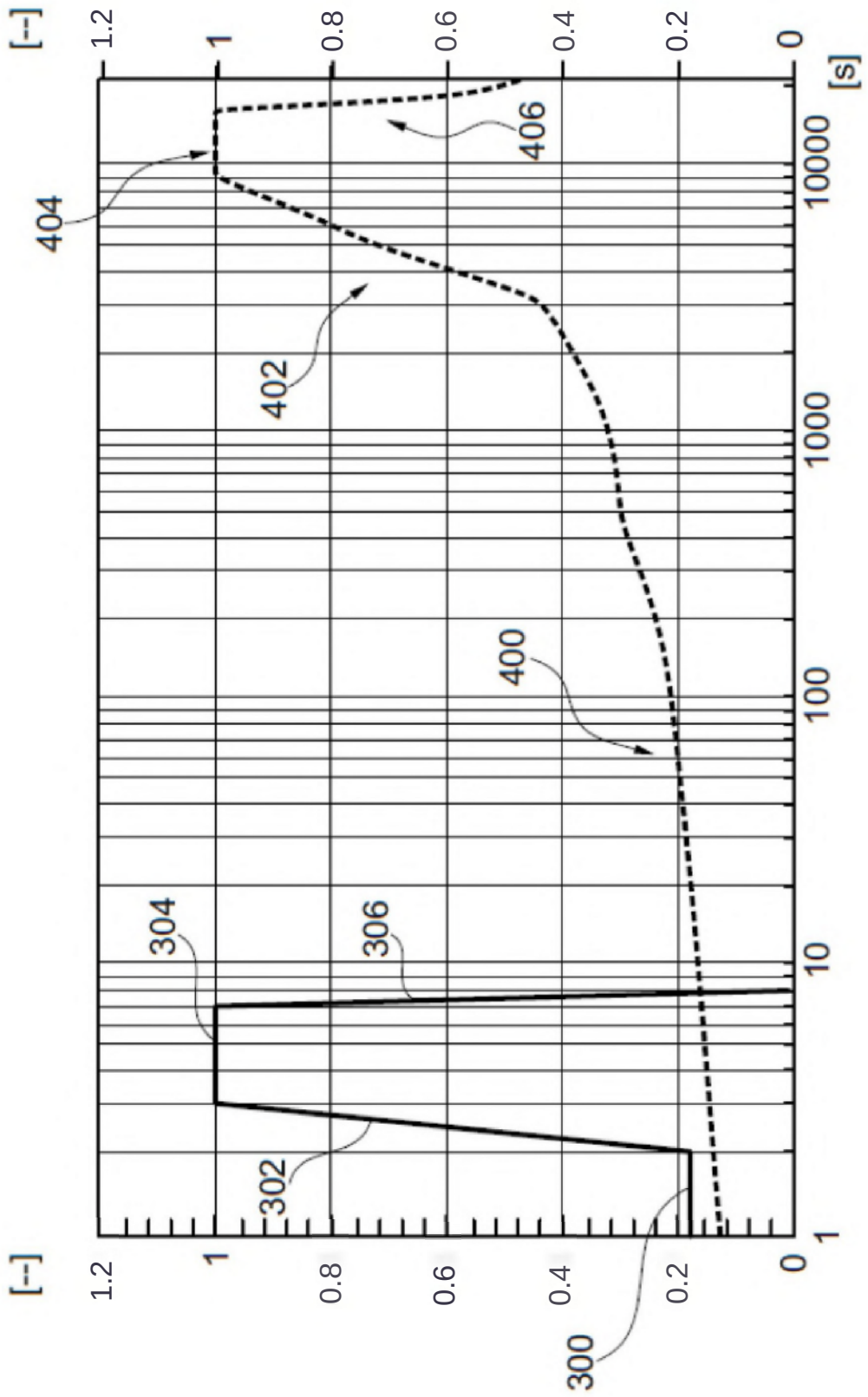

[--]
1.2
1
0.8
0.6
0.4
0.2
0
[s]
10000
1000
100
10
1
404
406
402
400
304
306
302
300

Fig. 9

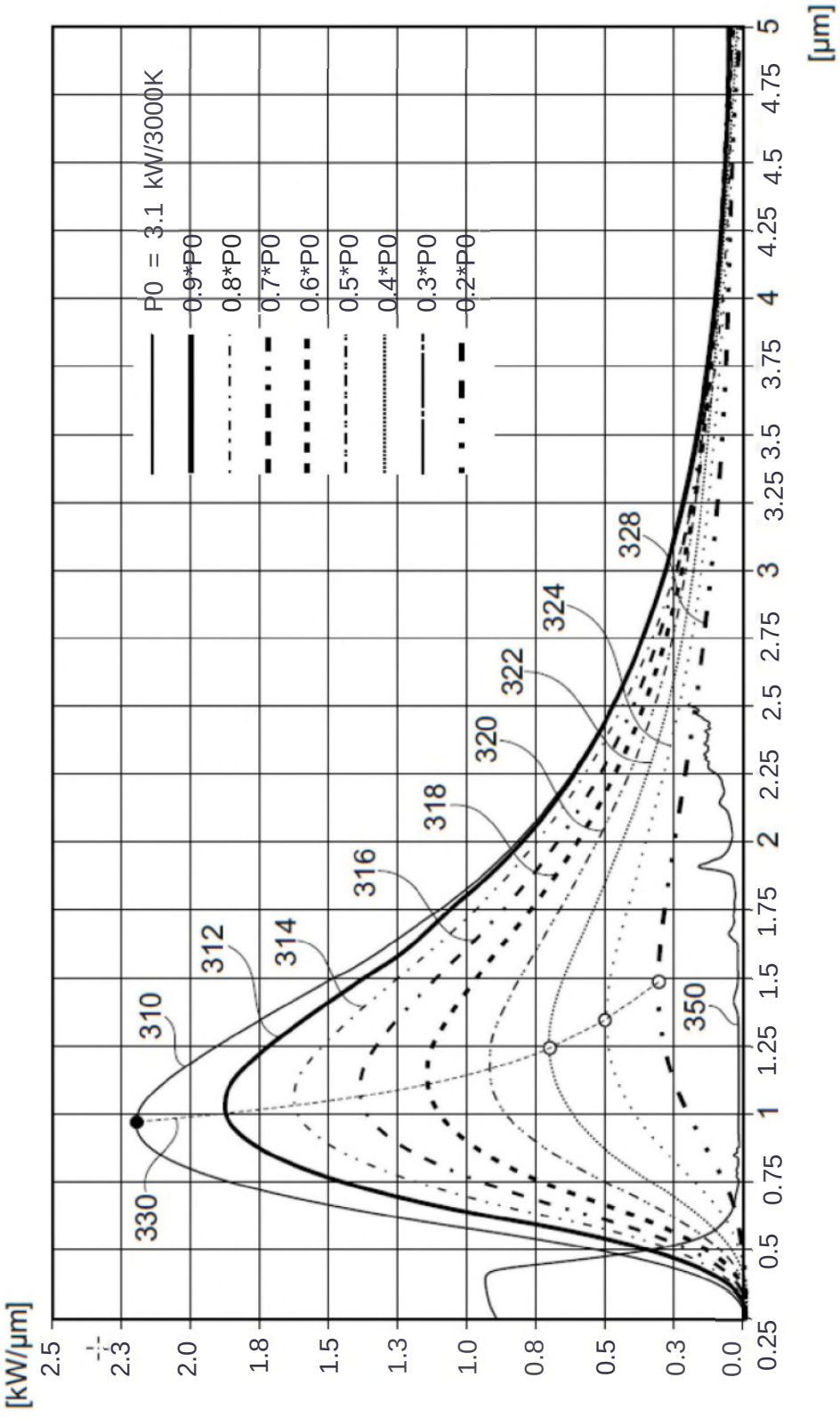

[kW/µm]
[µm]
P0 = 3.1 kW/3000K
0.9*P0
0.8*P0
0.7*P0
0.6*P0
0.5*P0
0.4*P0
0.3*P0
0.2*P0
310
312
314
316
318
320
322
324
328
330
350

Fig. 10

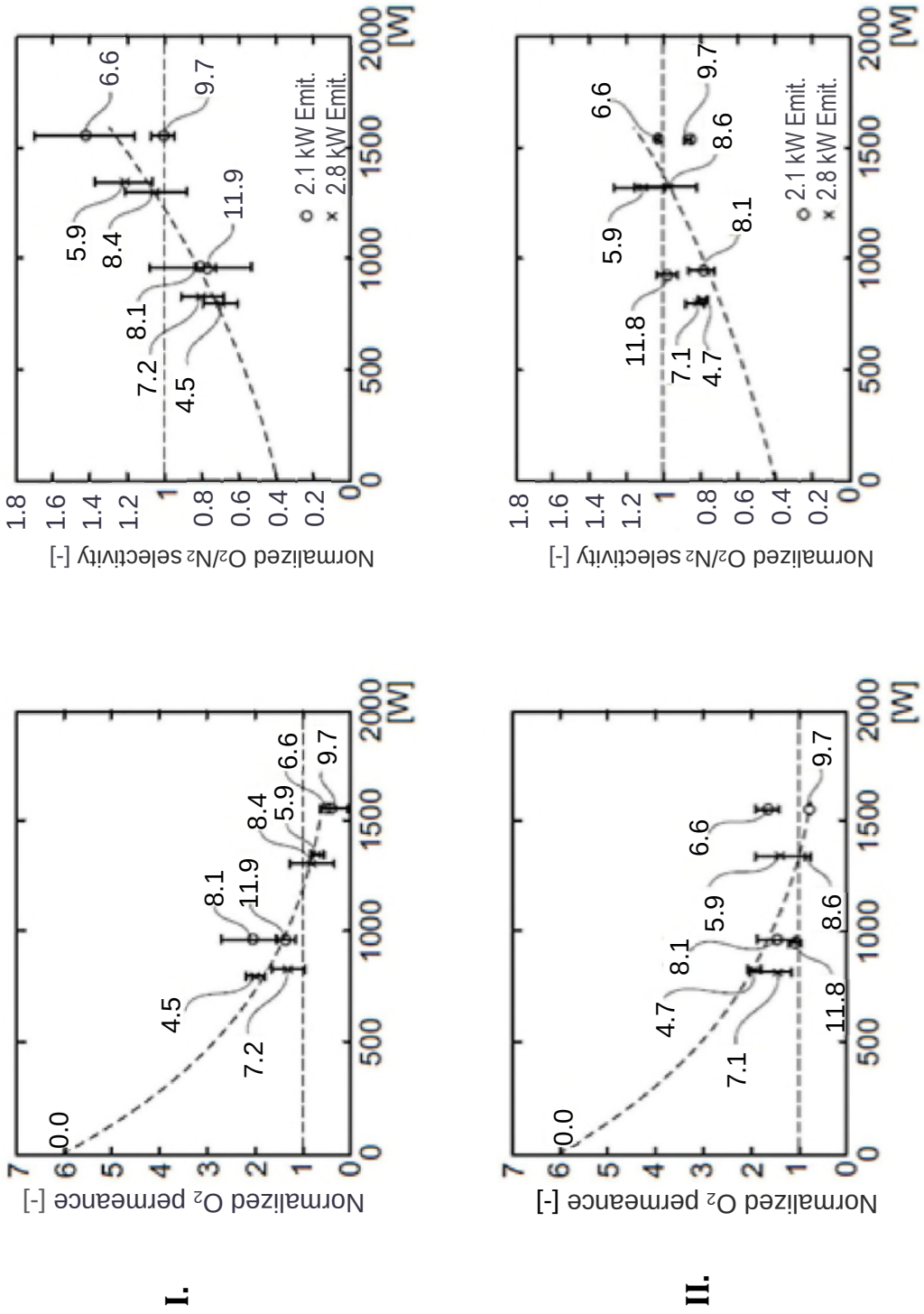

I.
II.
Normalized O2 permeance [-]
Normalized O2/N2 selectivity [-]
[W]
2.1 kW Emit.
2.8 kW Emit.
0.0
4.5
7.2
8.1
11.9
8.4
5.9
6.6
9.7
4.7
7.1
11.8
8.6

Fig. 11

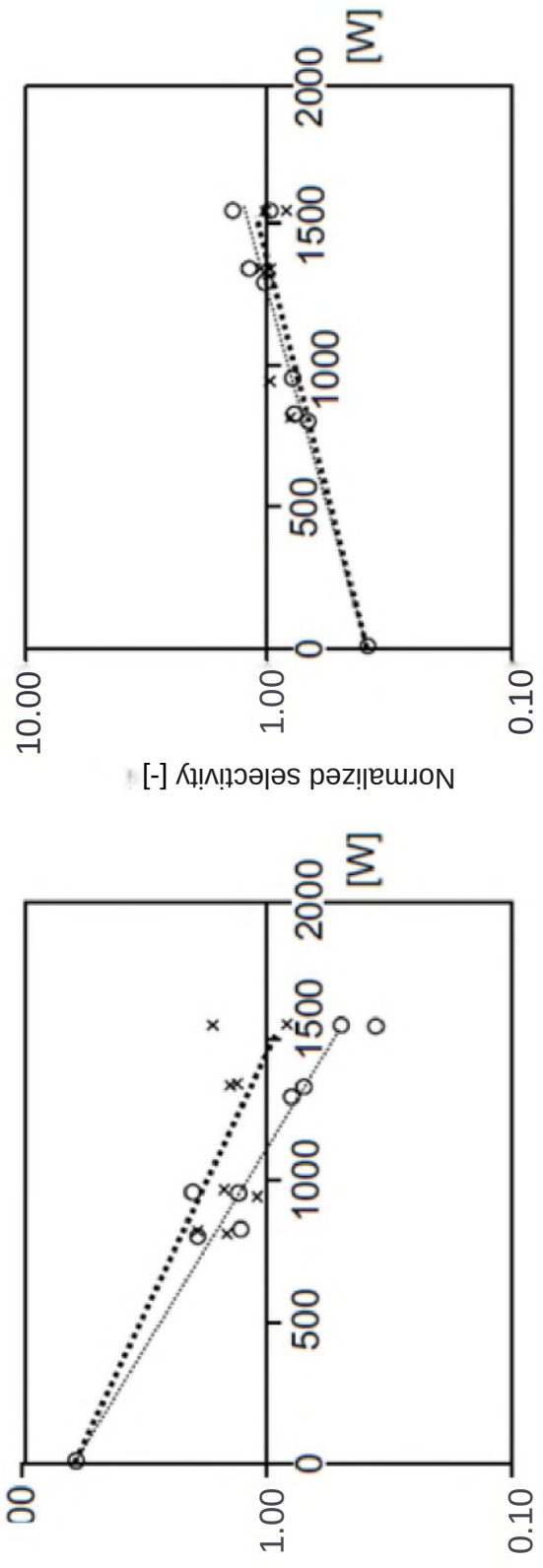
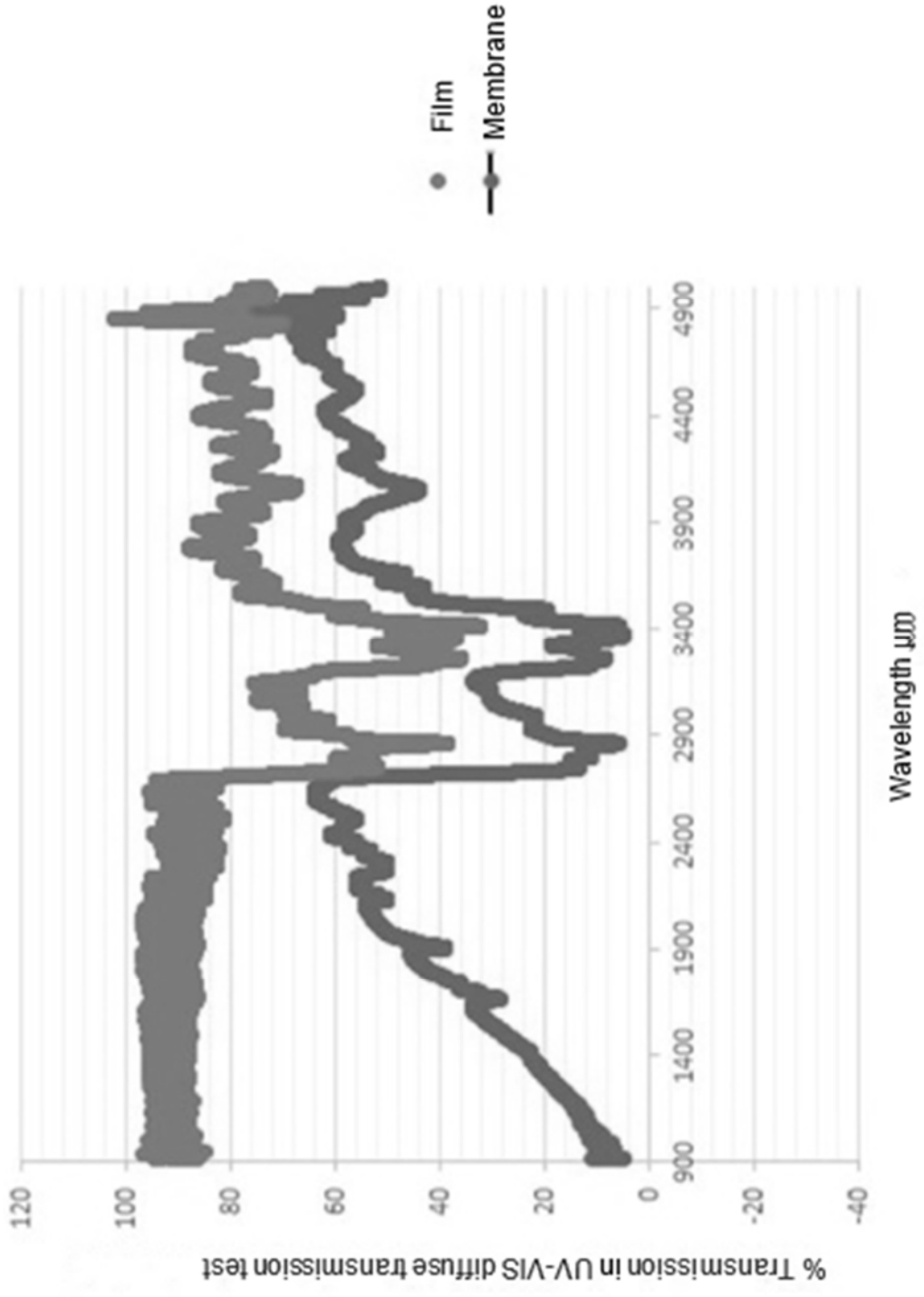

Normalized selectivity [-]
10.00
1.00
0.10
0
500
1000
1500
2000
[W]
Normalized permeance [-]
00
1.00
0.10
0
500
1000
1500
2000
[W]

Fig. 12


Film
Membrane
% Transmission in UV-VIS diffuse transmission test
120
100
80
60
40
20
0
-20
-40
900
1400
1900
2400
2900
3400
3900
4400
4900
Wavelength µm