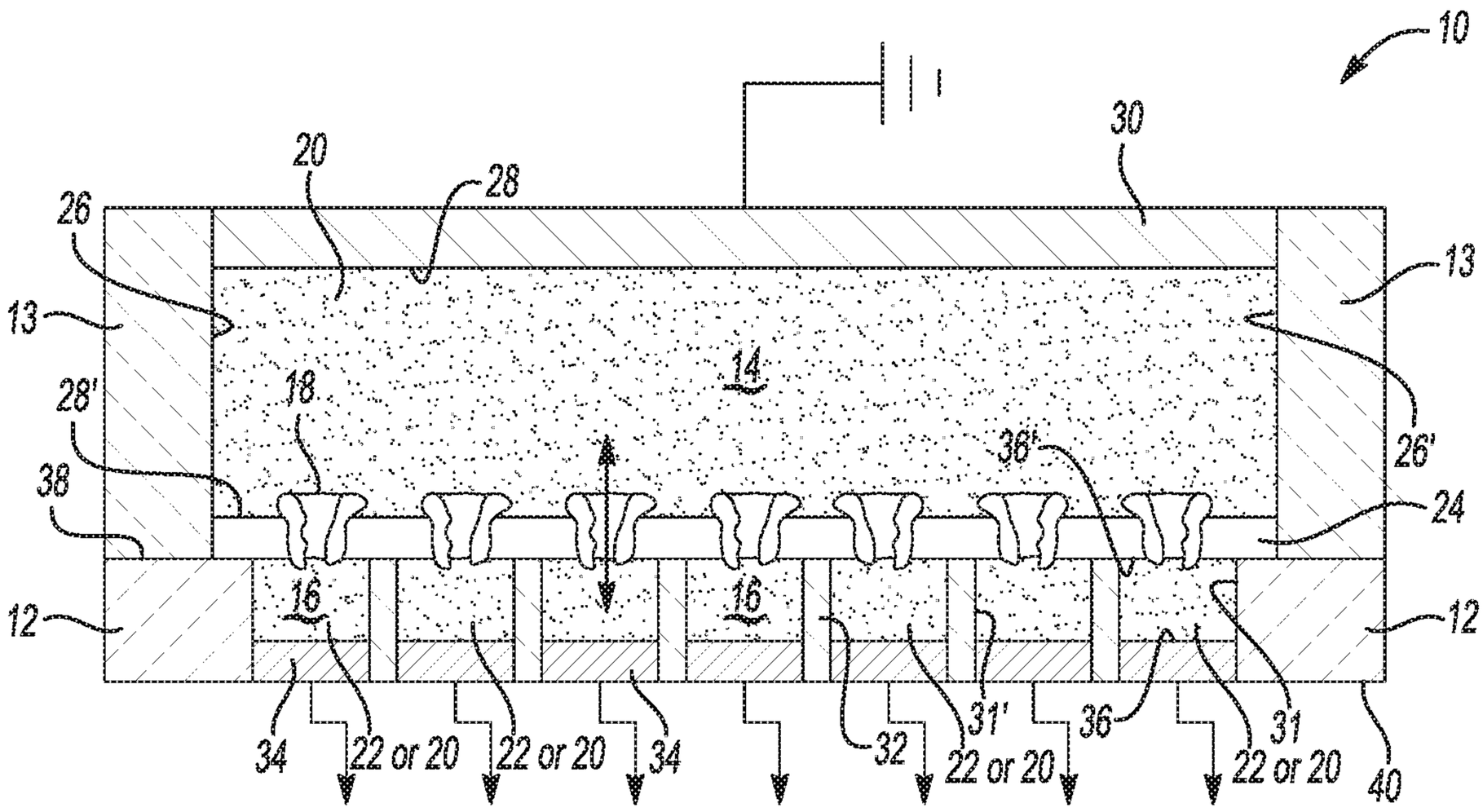
10
20
28
30
26
13
14
28'
18
26'
36'
38
24
16
16
12
12
34
22 or 20
22 or 20
34
32
31'
22 or 20
36
31
22 or 20
40

Fig-1

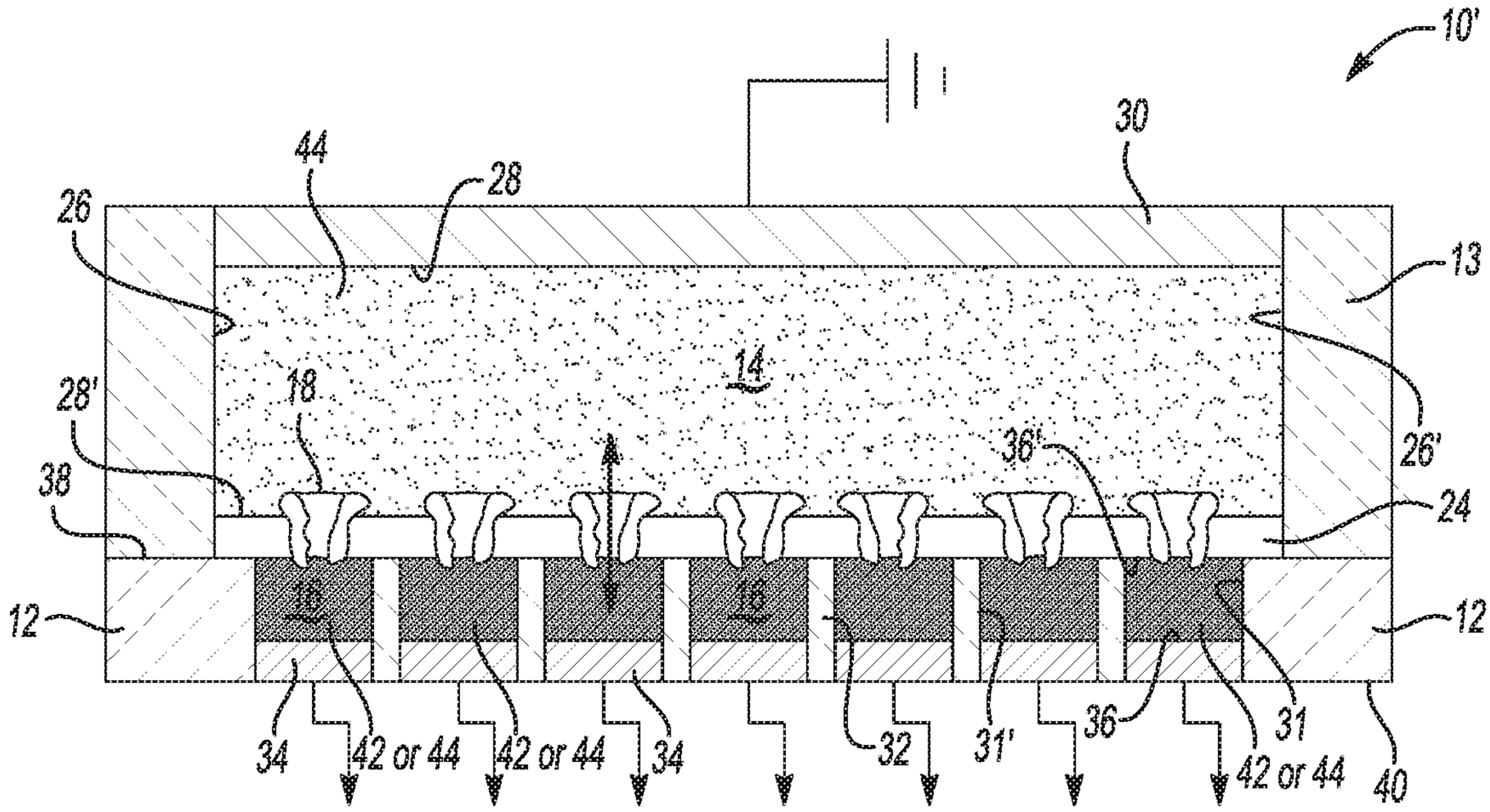
10'
30
44
28
26
13
14
28'
18
26'
36'
38
24
16
16
12
12
34
42 or 44
42 or 44
34
32
31'
36
31
42 or 44
40

Fig-2

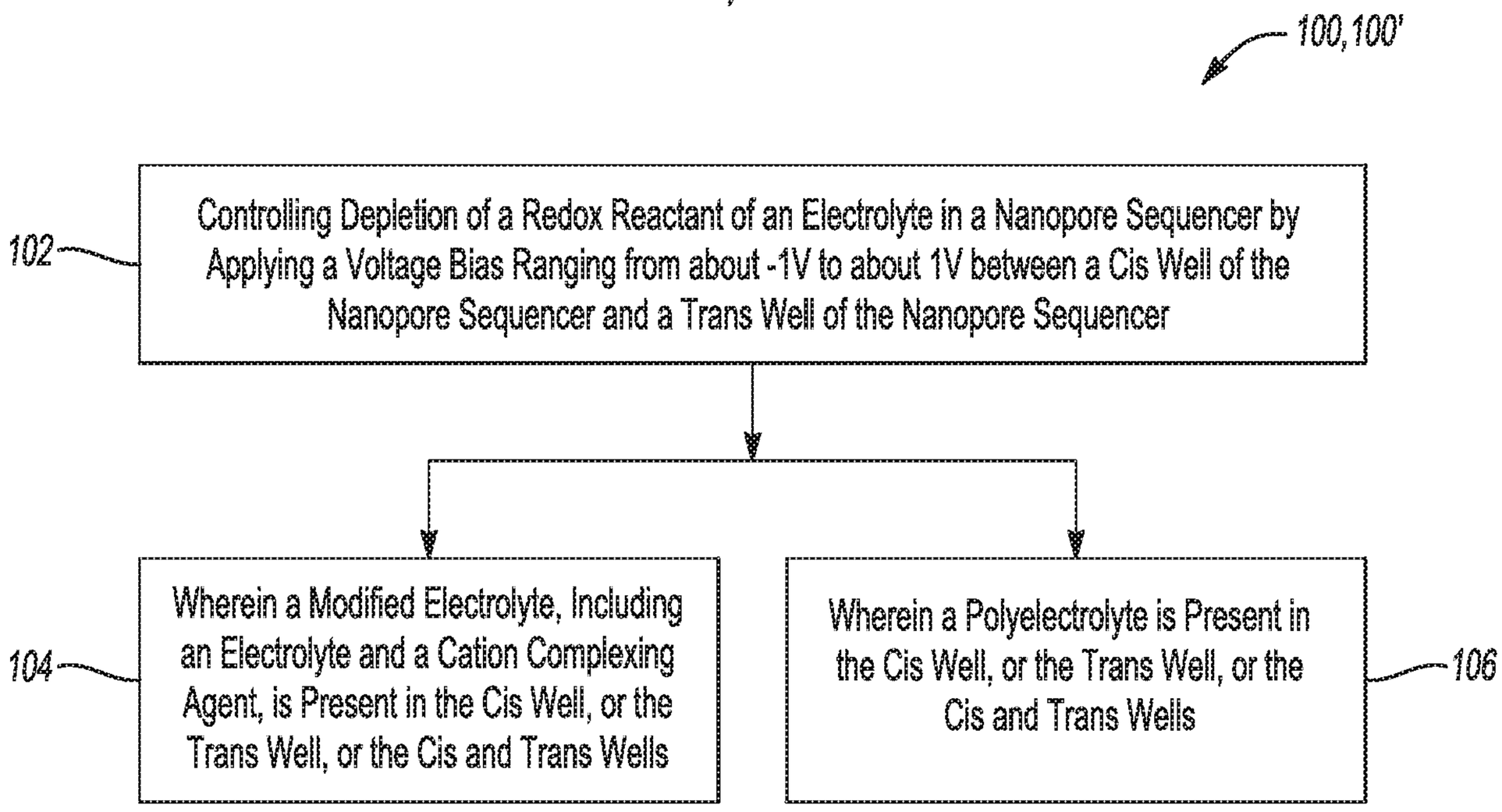
100,100'
Controlling Depletion of a Redox Reactant of an Electrolyte in a Nanopore Sequencer by Applying a Voltage Bias Ranging from about -1V to about 1V between a Cis Well of the Nanopore Sequencer and a Trans Well of the Nanopore Sequencer
102
Wherein a Modified Electrolyte, Including an Electrolyte and a Cation Complexing Agent, is Present in the Cis Well, or the Trans Well, or the Cis and Trans Wells
104
Wherein a Polyelectrolyte is Present in the Cis Well, or the Trans Well, or the Cis and Trans Wells
106

Fig-3

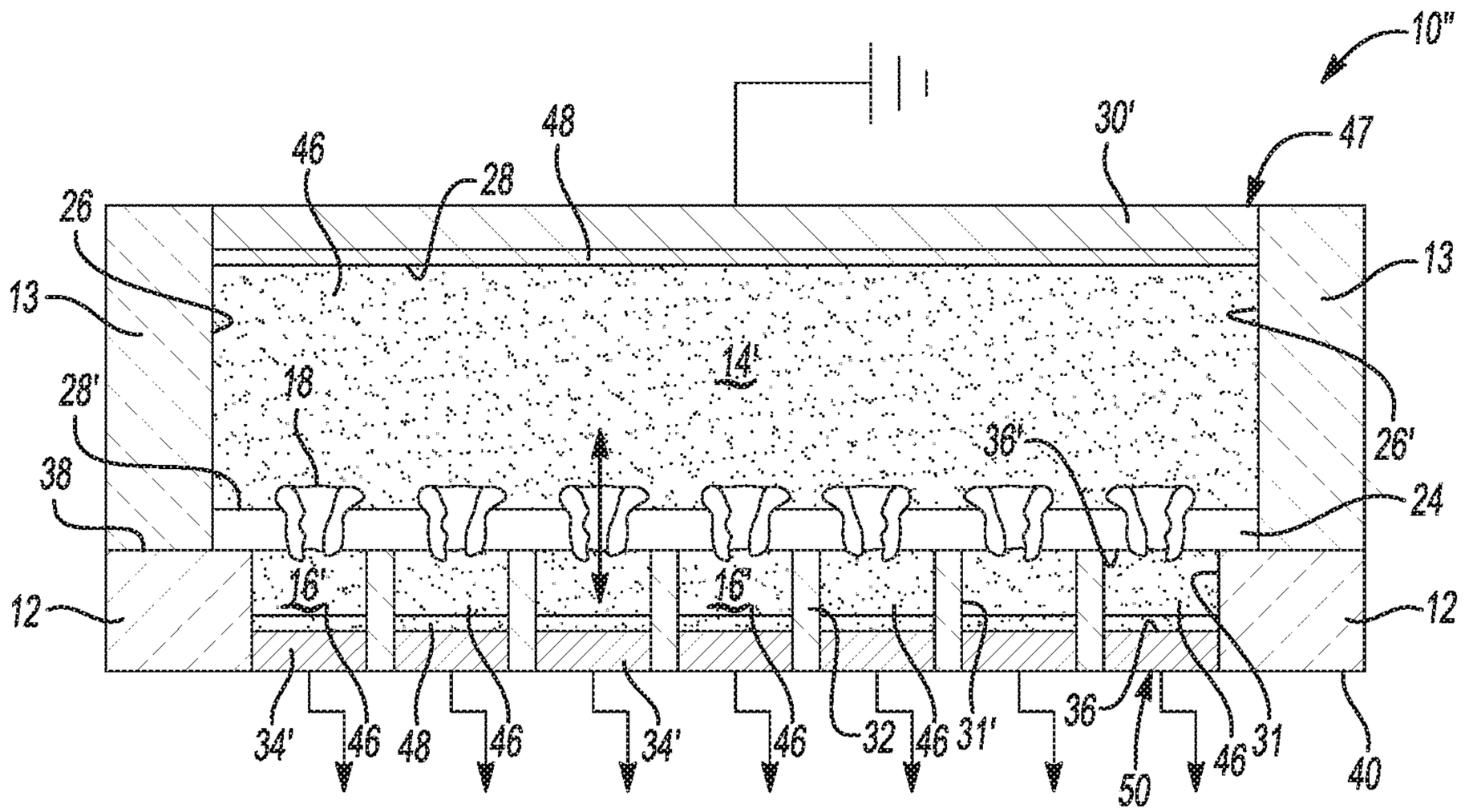
10"
46
48
28
30'
47
26
13
13
14'
18
28'
36'
26'
38
24
16'
16'
12
12
34'
46
48
46
34'
46
32
46
31'
36
50
46
31
40

Fig-4

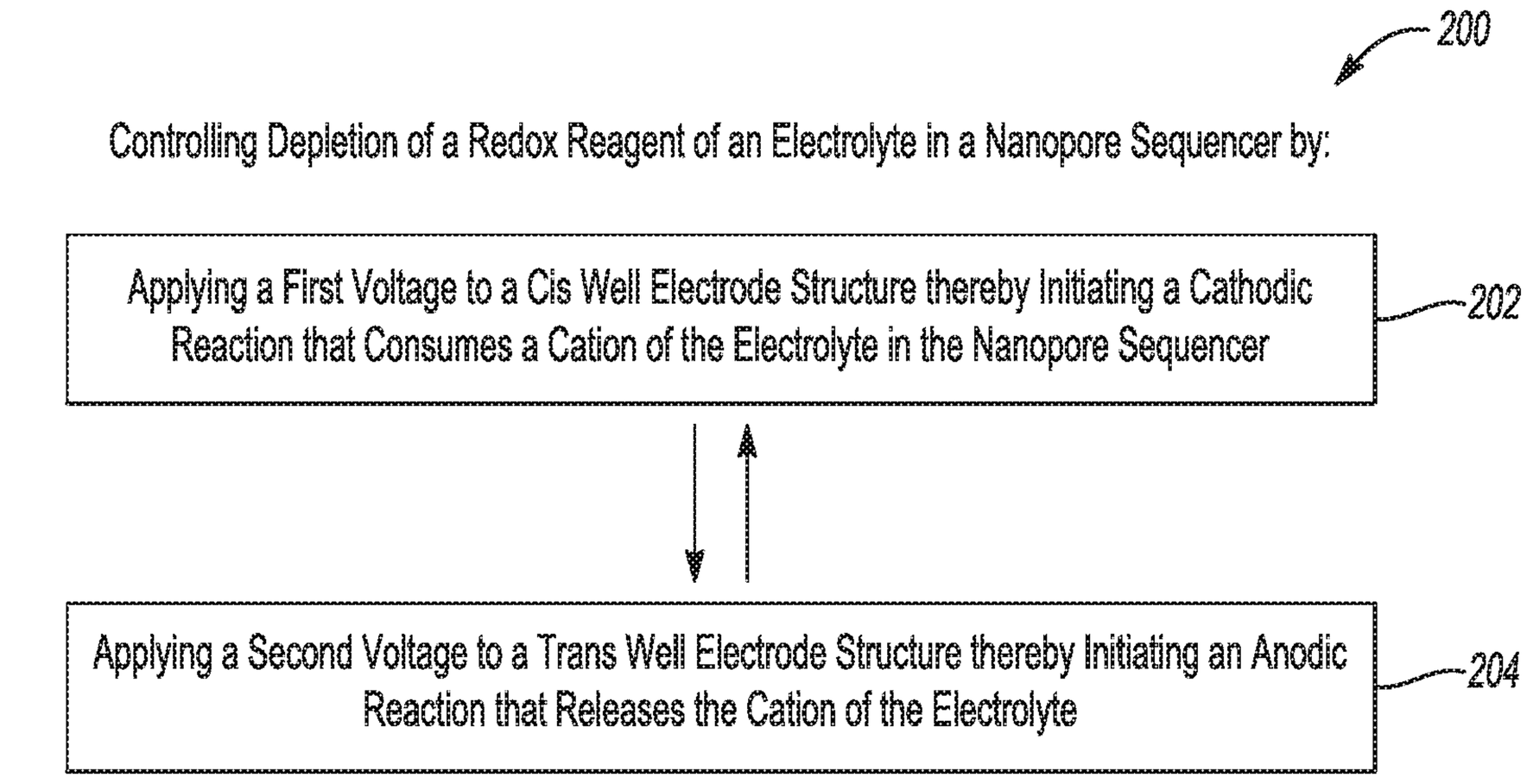
200
Controlling Depletion of a Redox Reagent of an Electrolyte in a Nanopore Sequencer by:
Applying a First Voltage to a Cis Well Electrode Structure thereby Initiating a Cathodic Reaction that Consumes a Cation of the Electrolyte in the Nanopore Sequencer
202
Applying a Second Voltage to a Trans Well Electrode Structure thereby Initiating an Anodic Reaction that Releases the Cation of the Electrolyte
204

Fig-5

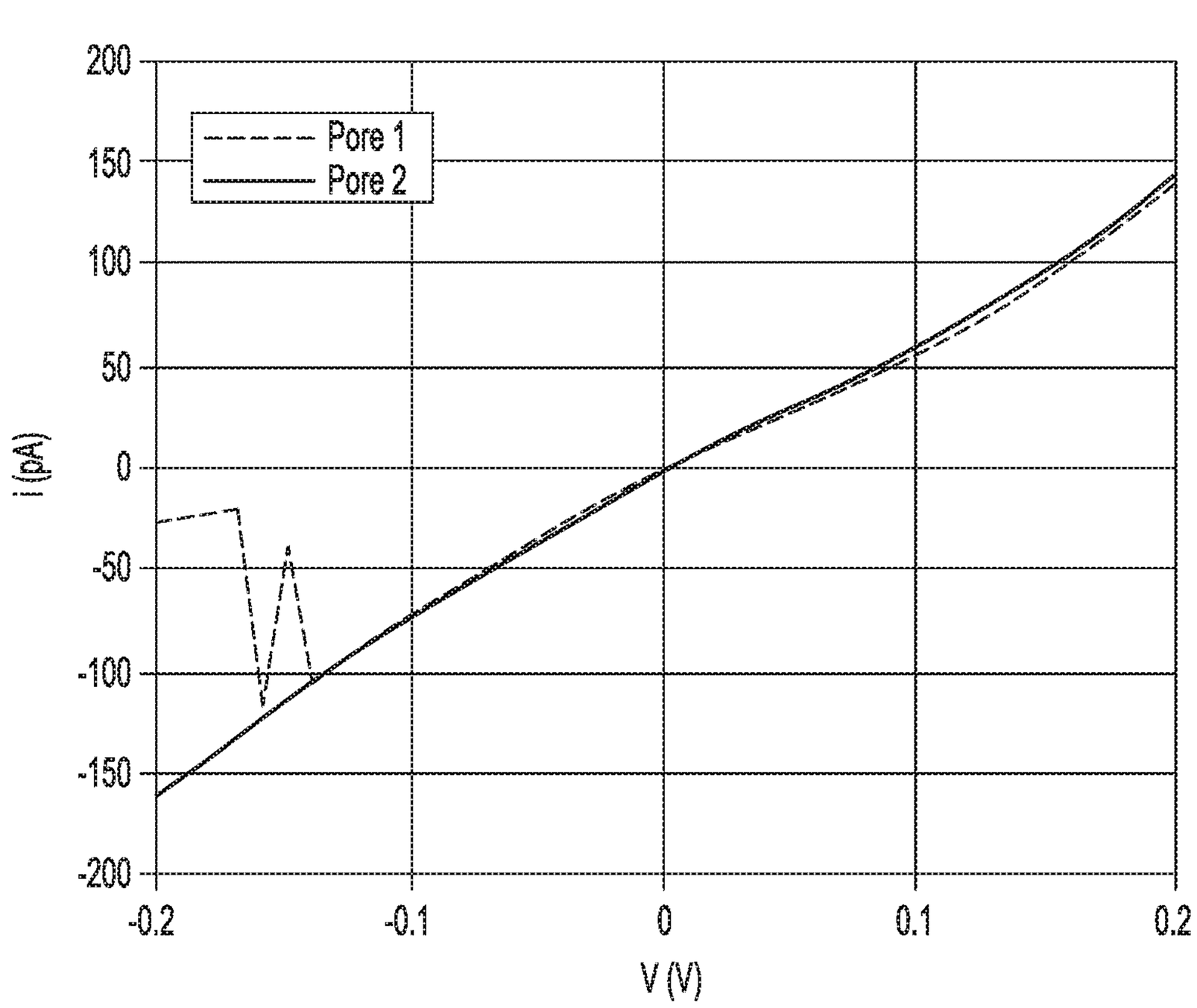
Pore 1
Pore 2
i (pA)
200
150
100
50
0
-50
-100
-150
-200
-0.2
-0.1
0
0.1
0.2
V (V)

Fig-6A

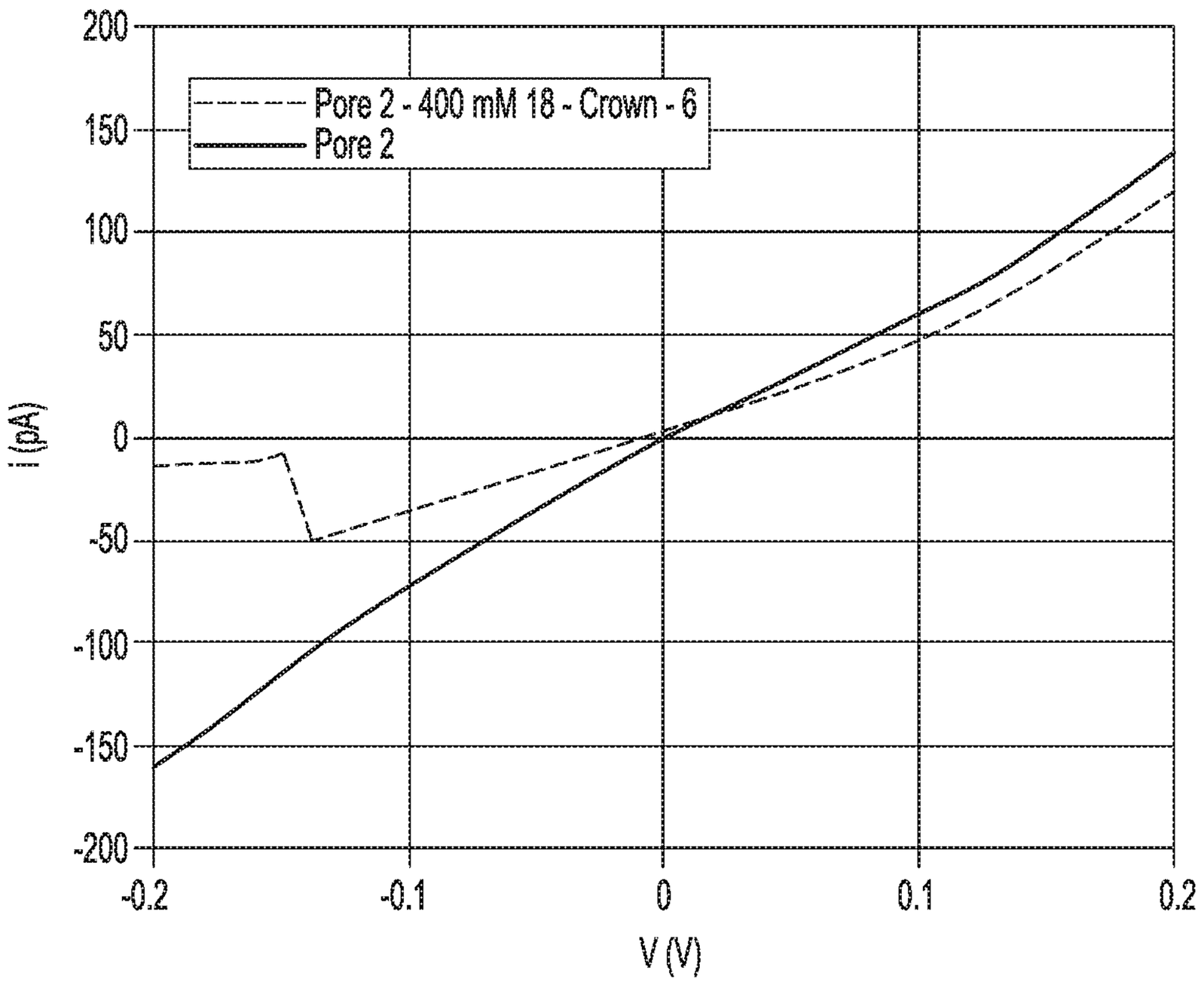
Pore 2 - 400 mM 18 - Crown - 6
Pore 2
200
150
100
50
0
-50
-100
-150
-200
i (pA)
-0.2
-0.1
0
0.1
0.2
V (V)

Fig-6B

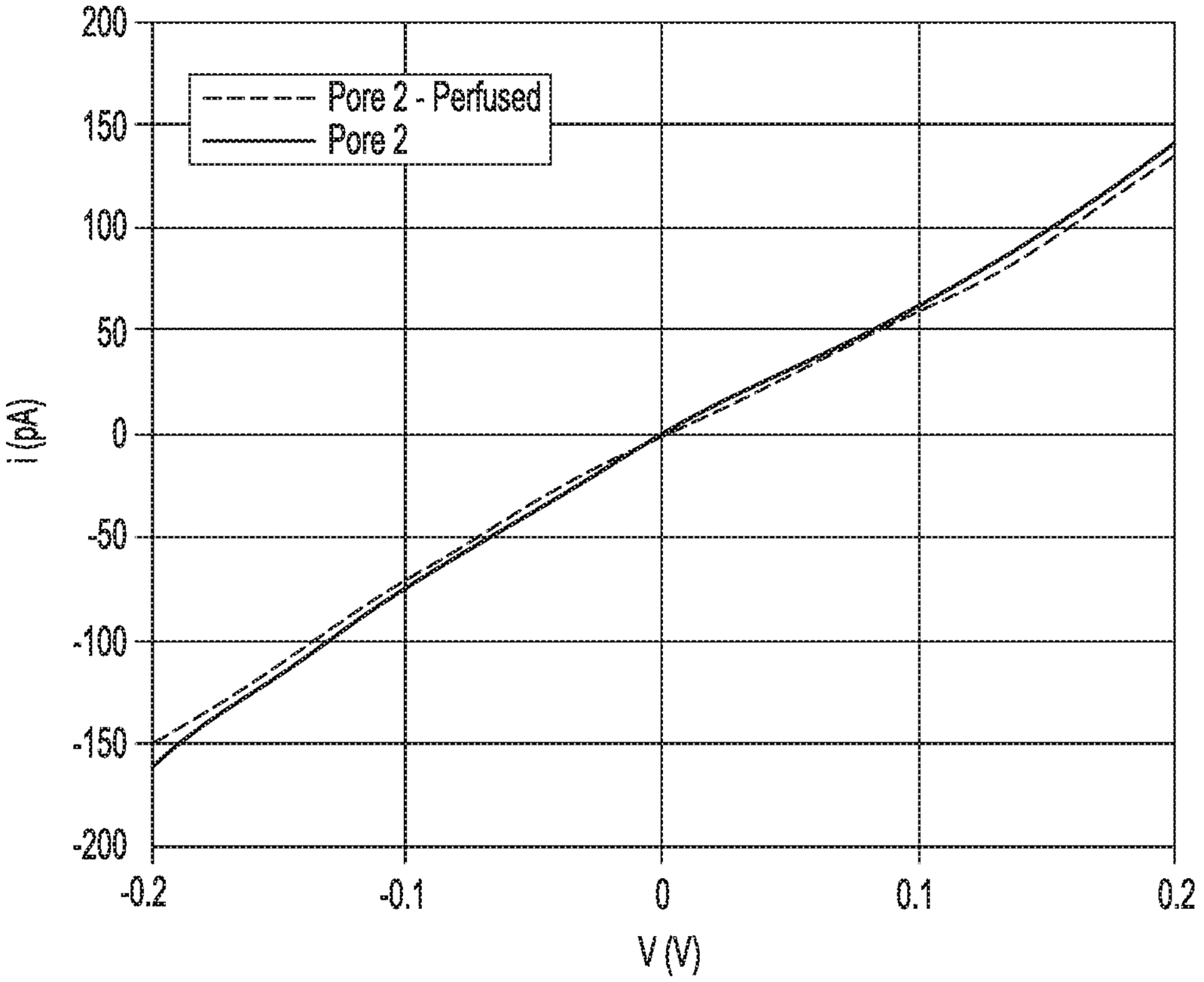
Pore 2 - Perfused
Pore 2
200
150
100
50
0
-50
-100
-150
-200
i (pA)
-0.2
-0.1
0
0.1
0.2
V (V)

Fig-6C

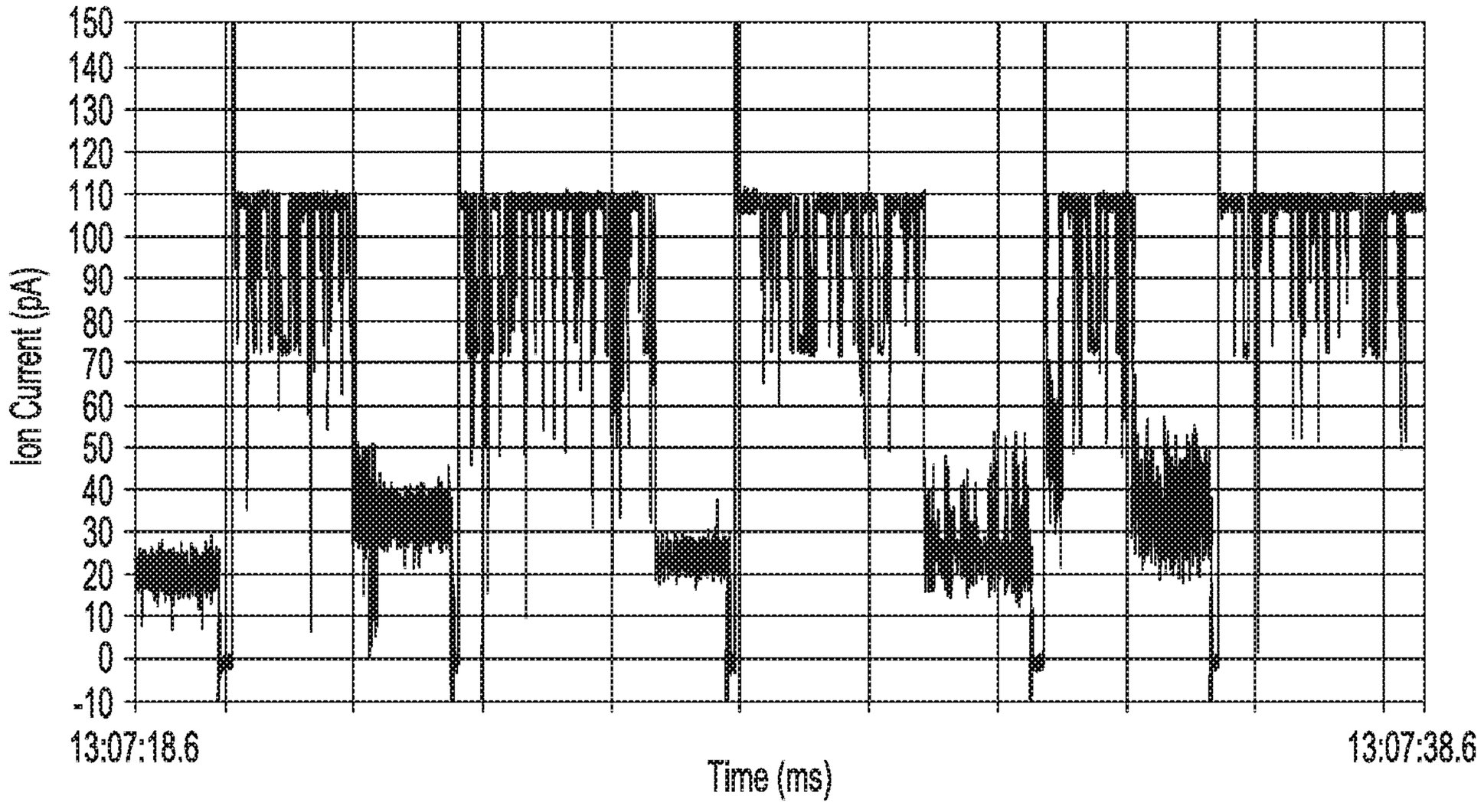
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
Ion Current (pA)
13:07:18.6
13:07:38.6
Time (ms)

Fig-7A

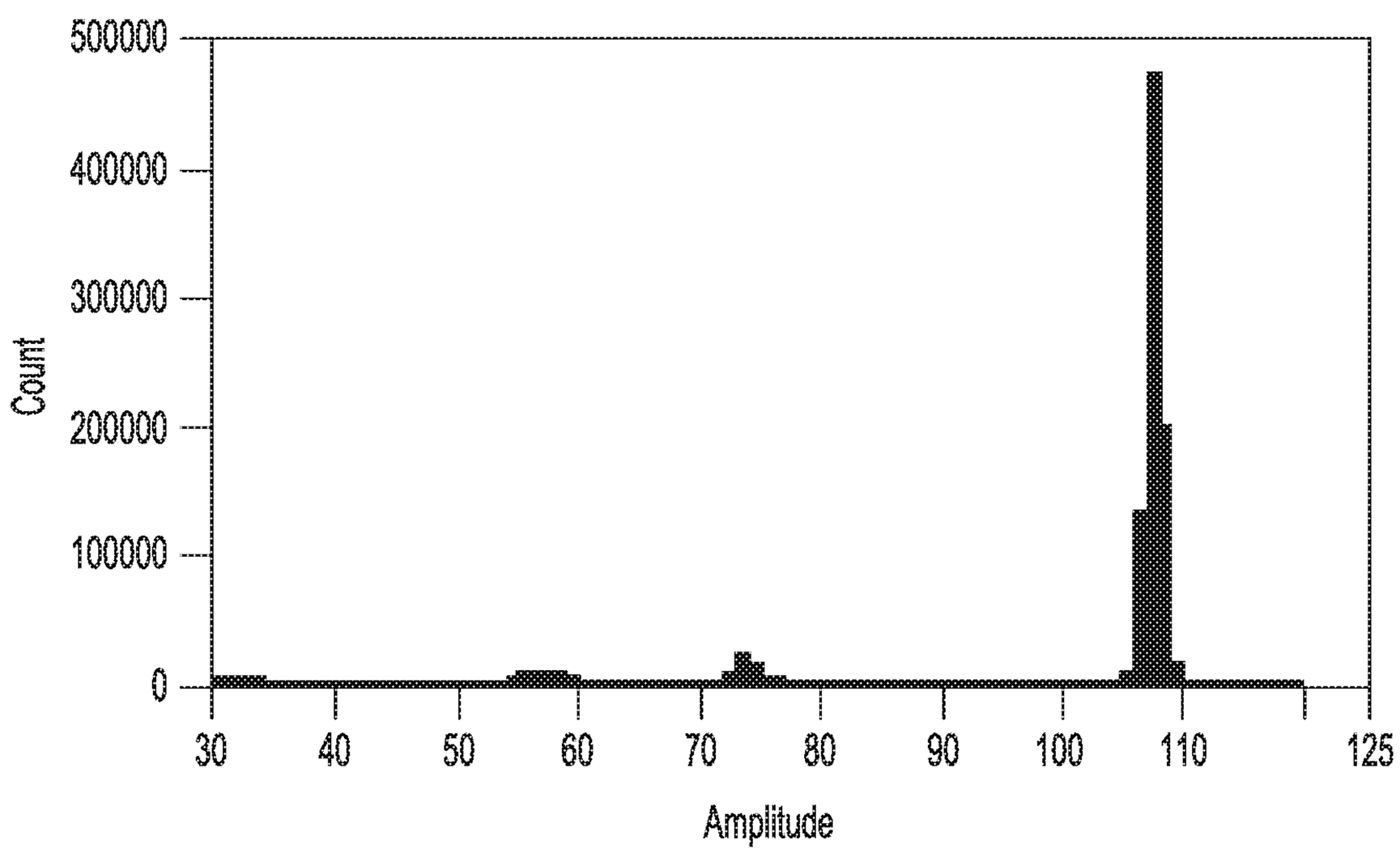
500000
400000
300000
200000
100000
0
Count
30
40
50
60
70
80
90
100
110
125
Amplitude

Fig-7B

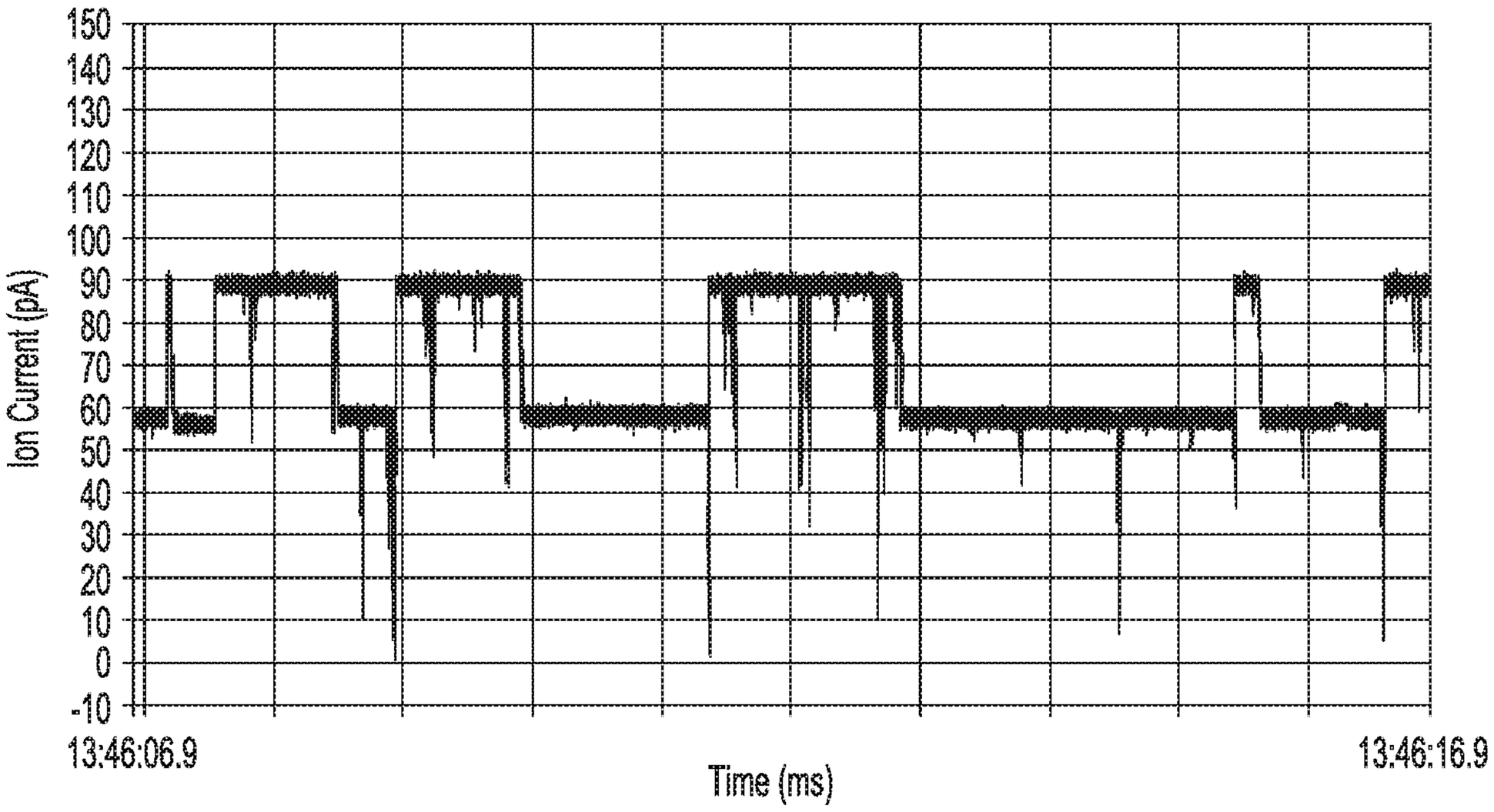
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
Ion Current (pA)
13:46:06.9
13:46:16.9
Time (ms)

Fig-8A

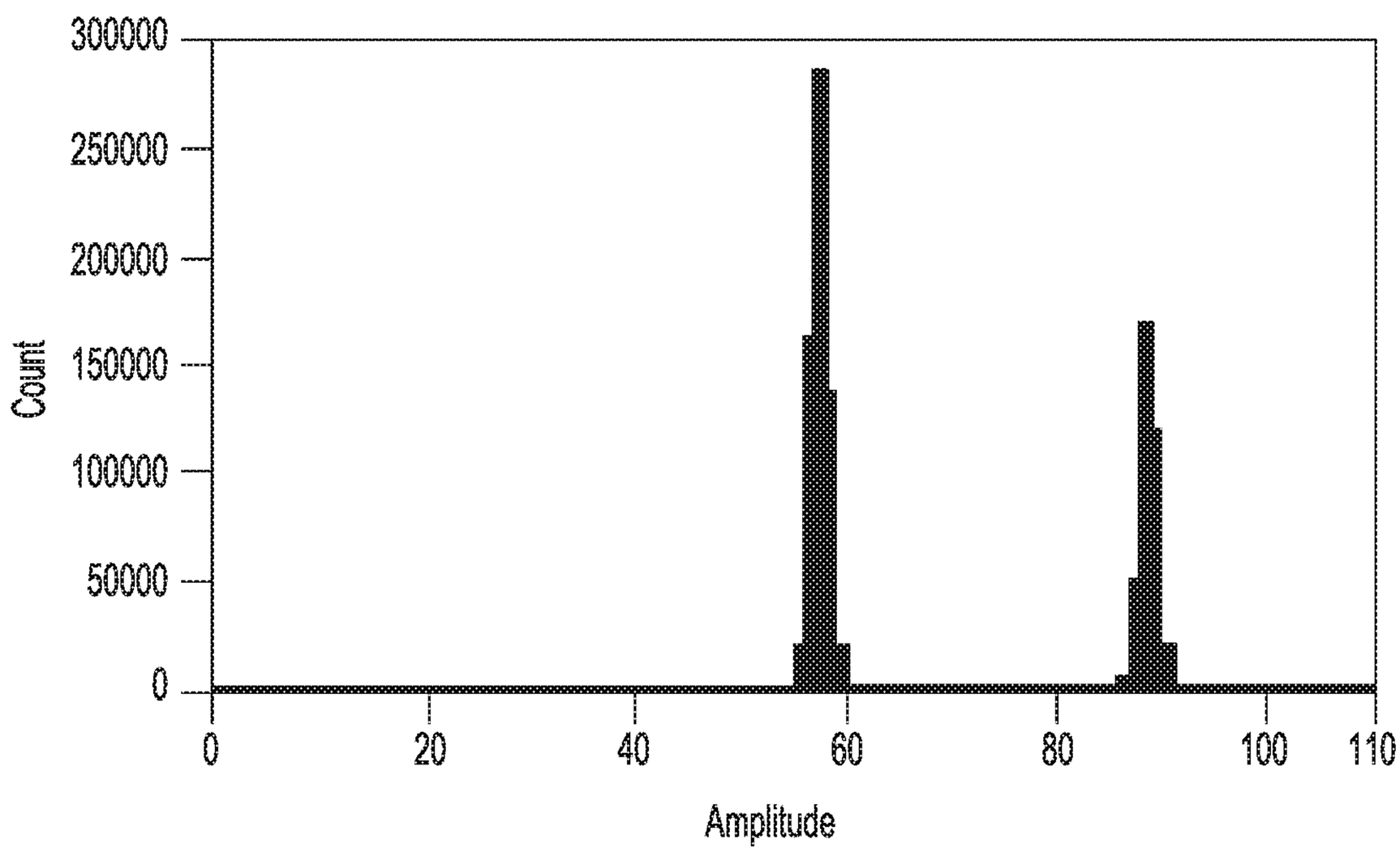
300000
250000
200000
150000
100000
50000
0
Count
0
20
40
60
80
100
110
Amplitude

Fig-8B