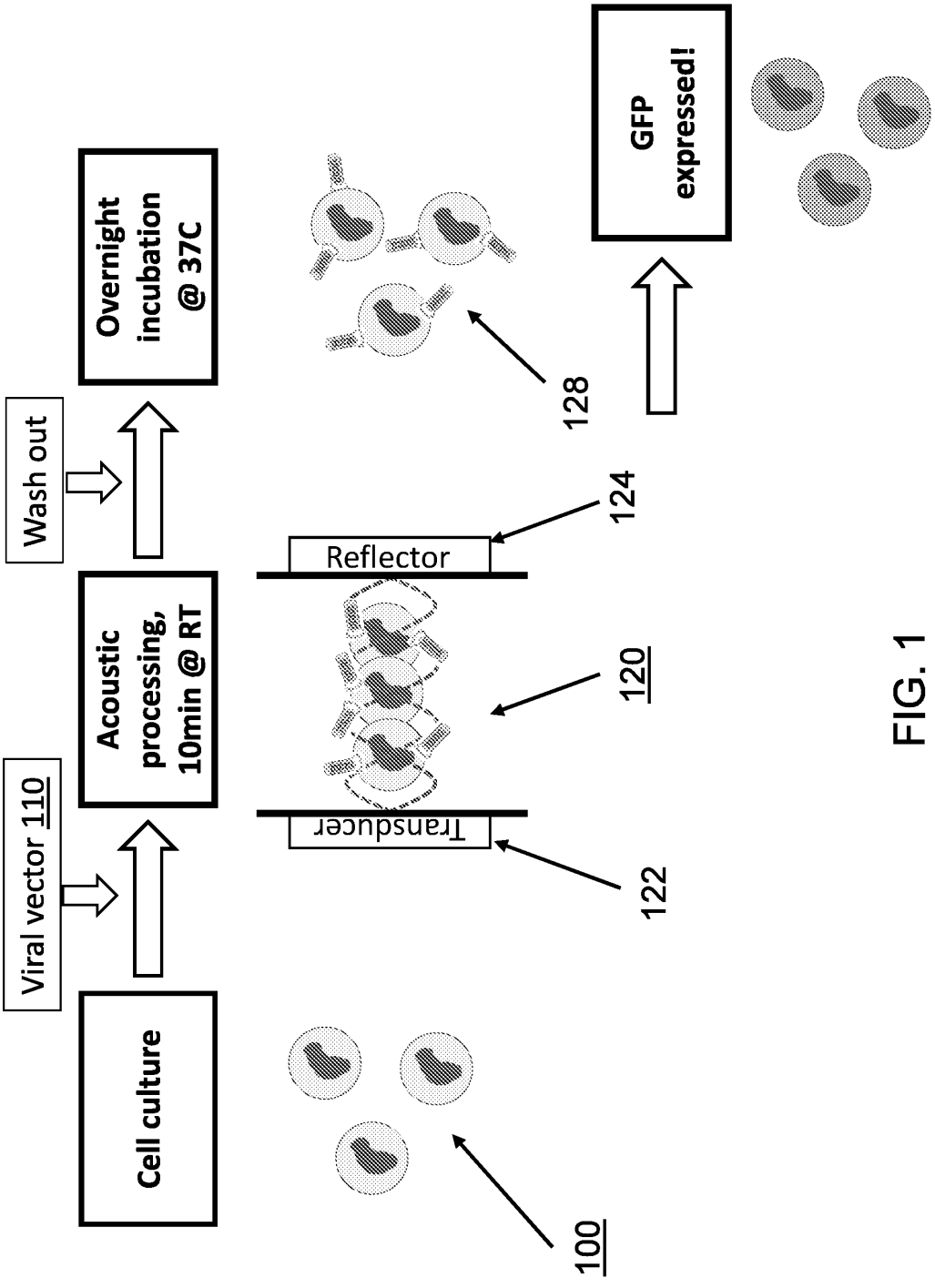
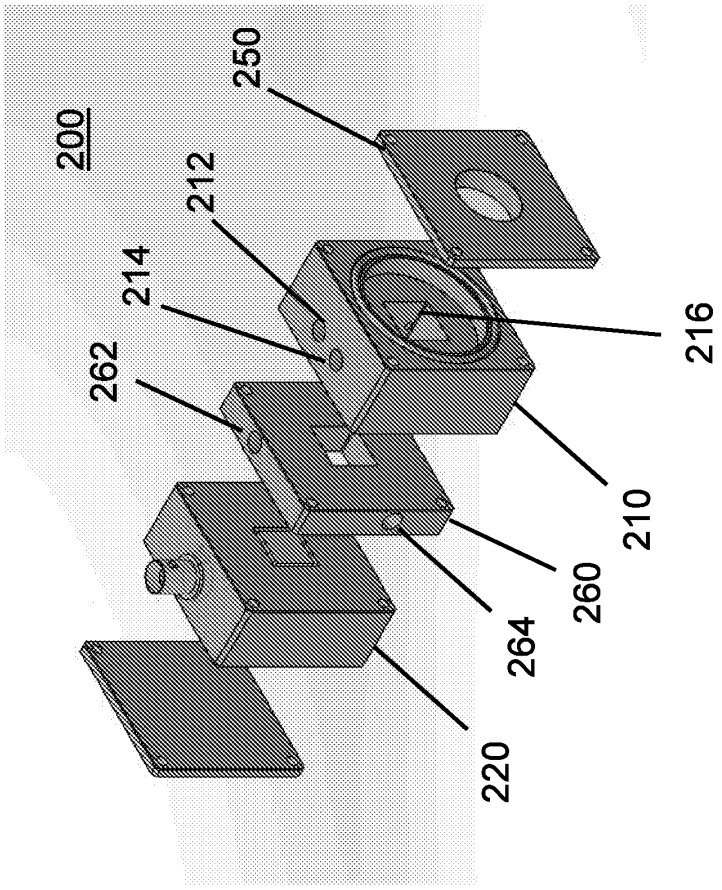

Cell culture
Viral vector 110
Acoustic processing, 10min @ RT
Wash out
Overnight incubation @ 37C
GFP expressed!
Reflector
Transducer
100
120
122
124
128

FIG. 1

FIG. 2A



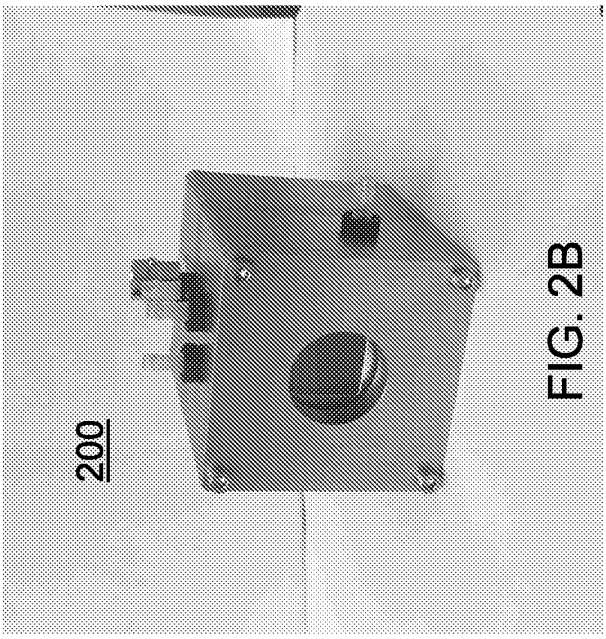


FIG. 2B

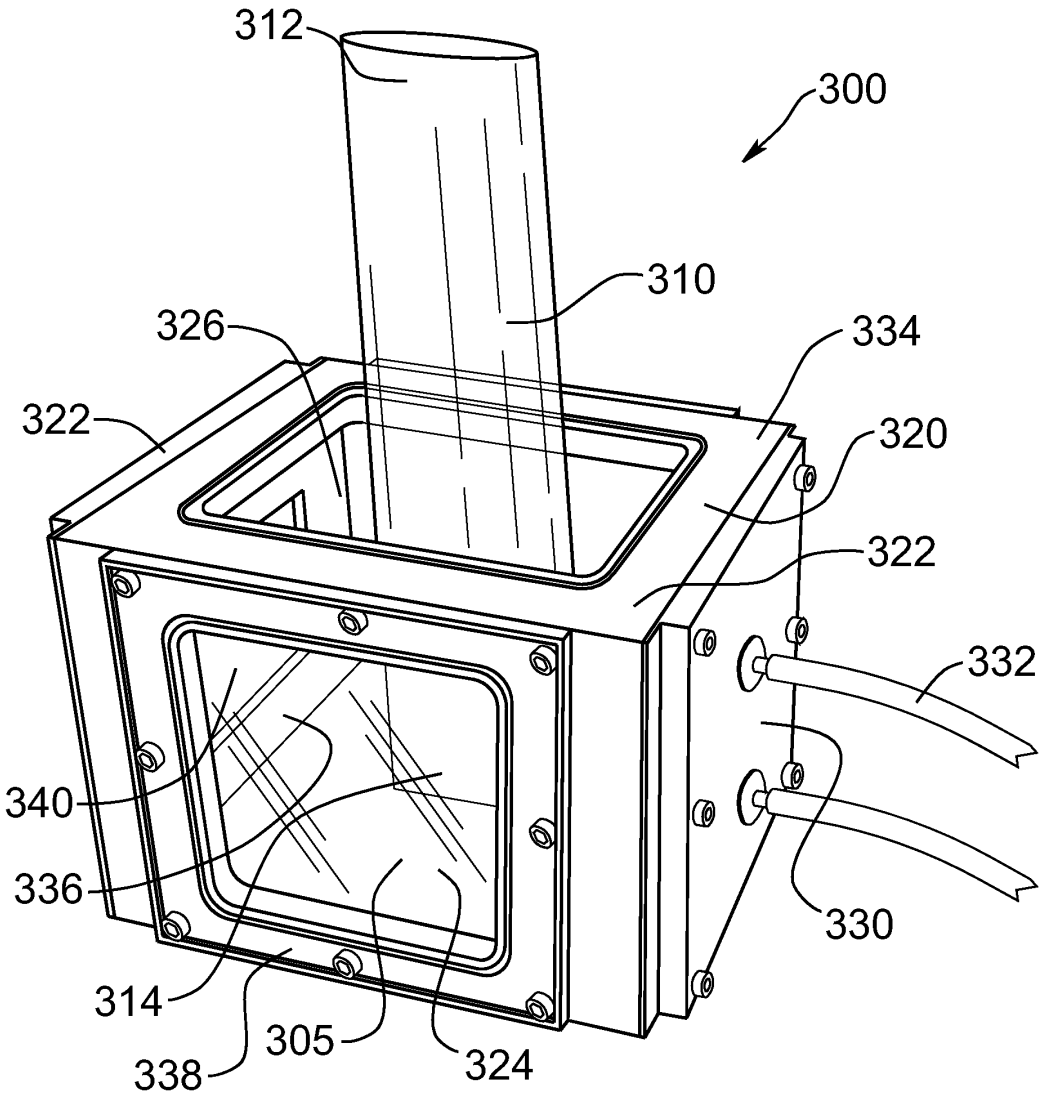


FIG. 3

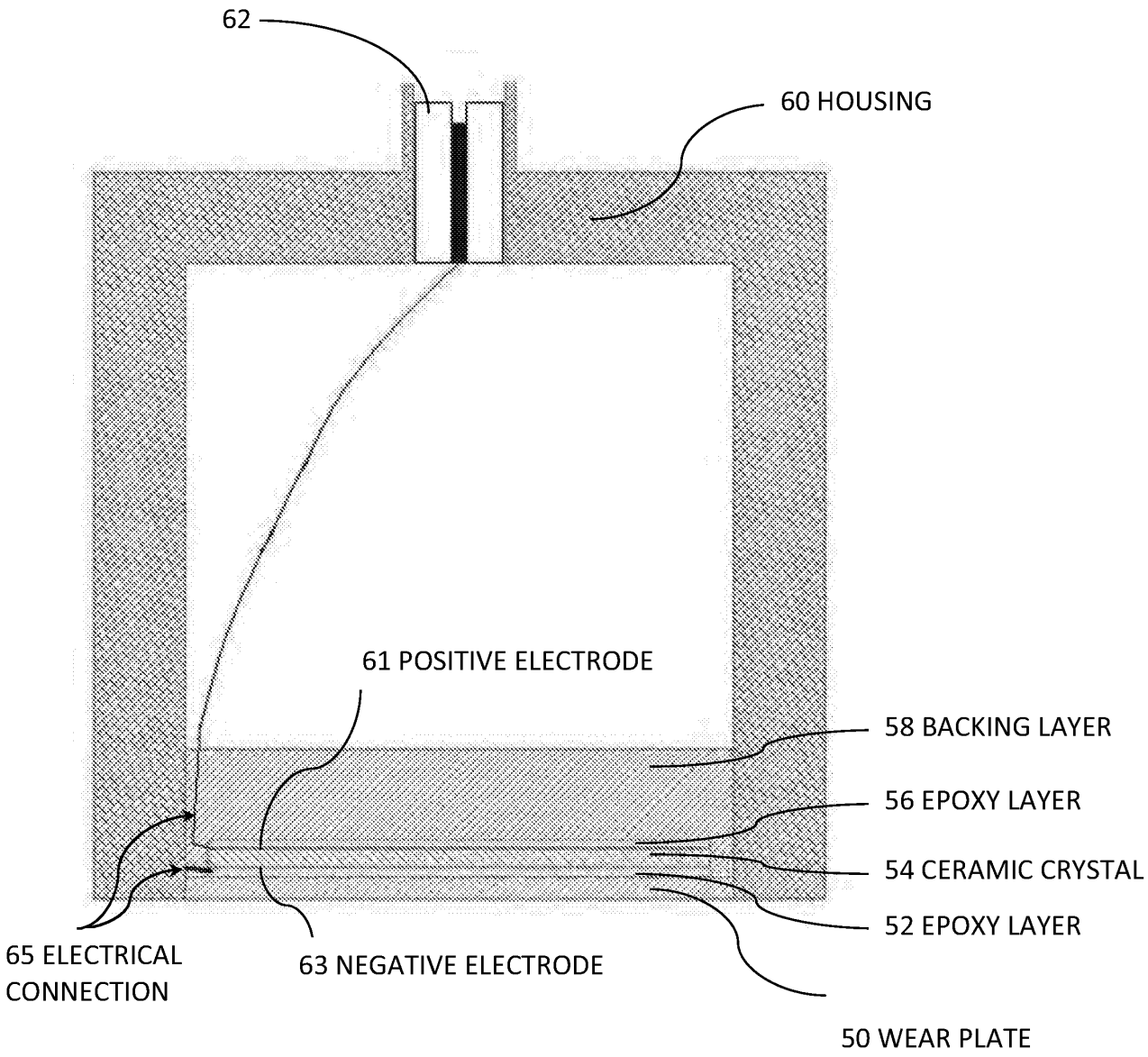

62
60 HOUSING
61 POSITIVE ELECTRODE
58 BACKING LAYER
56 EPOXY LAYER
54 CERAMIC CRYSTAL
52 EPOXY LAYER
65 ELECTRICAL CONNECTION
63 NEGATIVE ELECTRODE
50 WEAR PLATE

FIG. 4

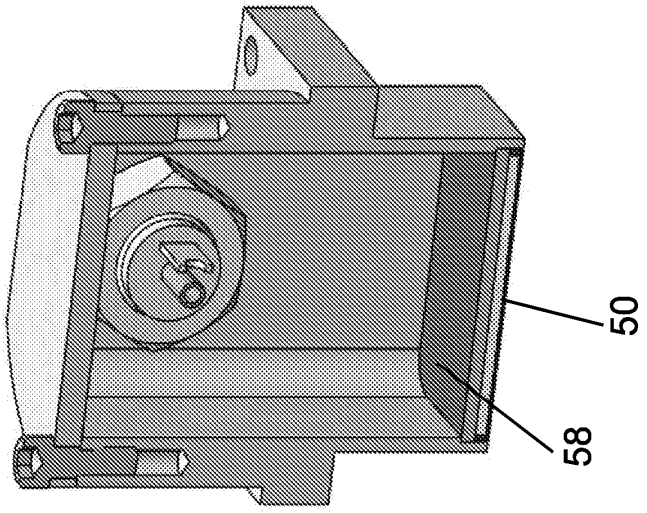


FIG. 6

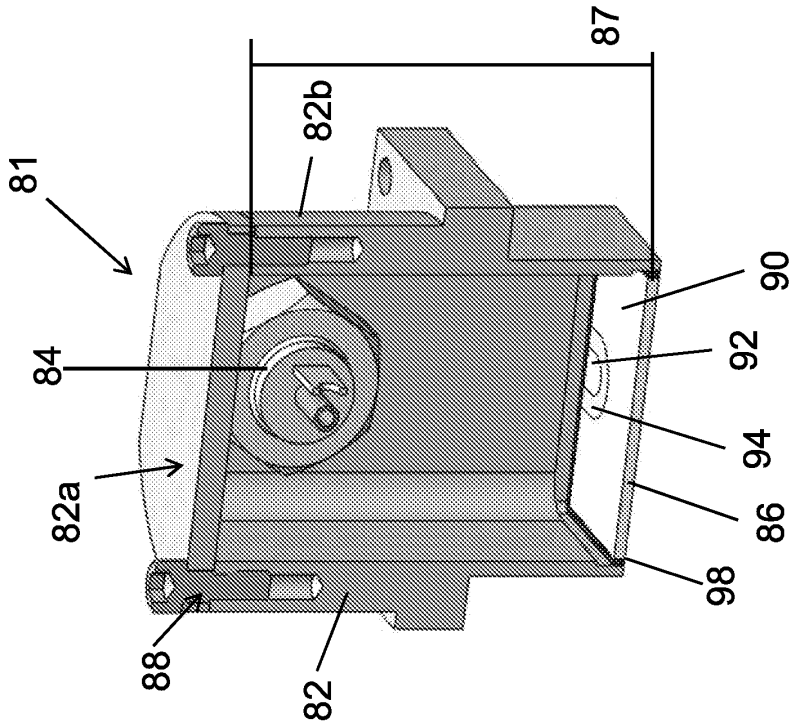


FIG. 5

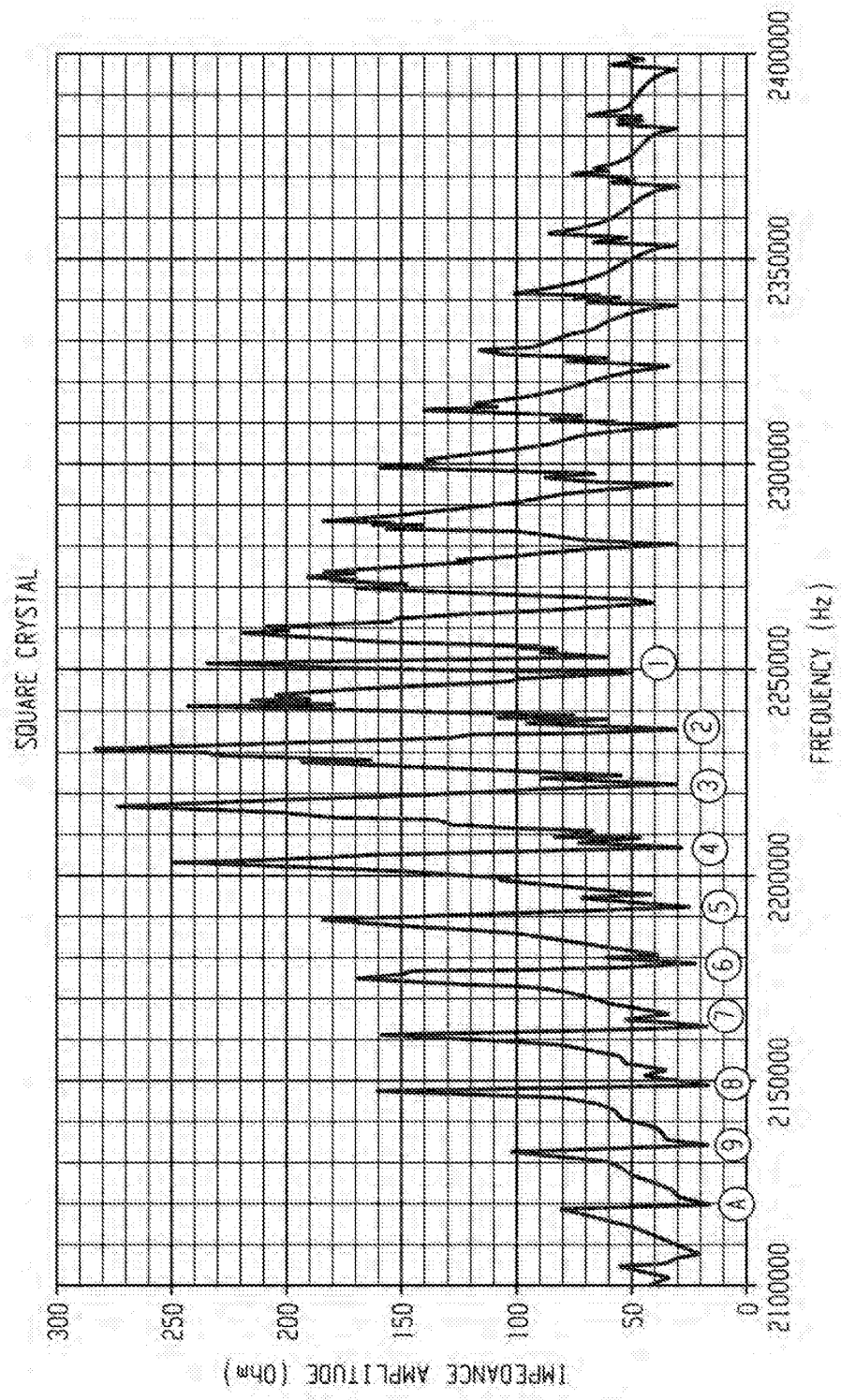

SQUARE CRYSTAL
IMPEDANCE AMPLITUDE (Ohm)
FREQUENCY (Hz)
300
250
200
150
100
50
0
2100000
2150000
2200000
2250000
2300000
2350000
2400000
1
2
3
4
5
6
7
8
9
A

FIG. 7

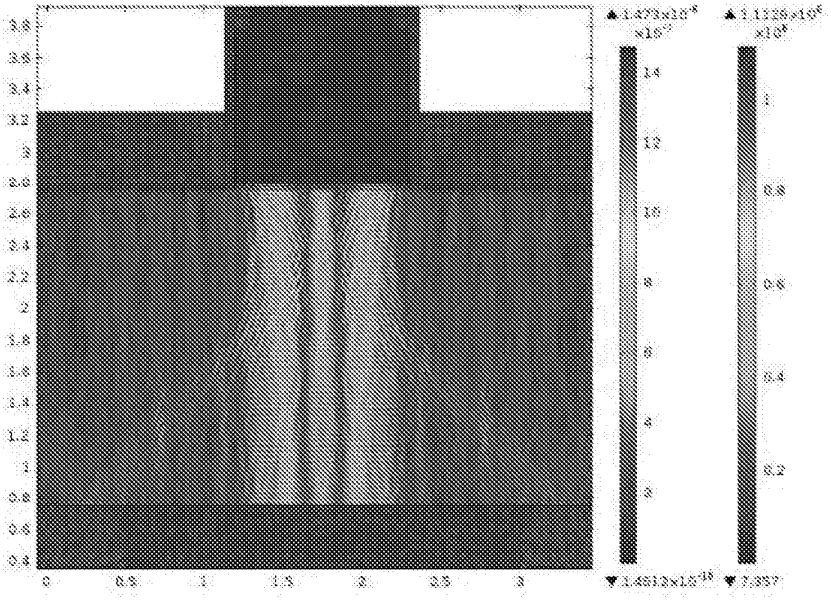


FIG. 9

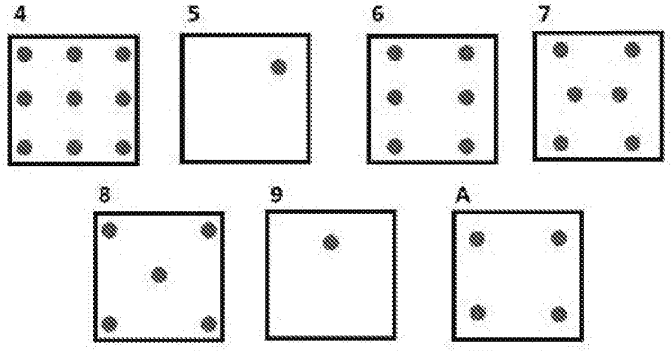


FIG. 8

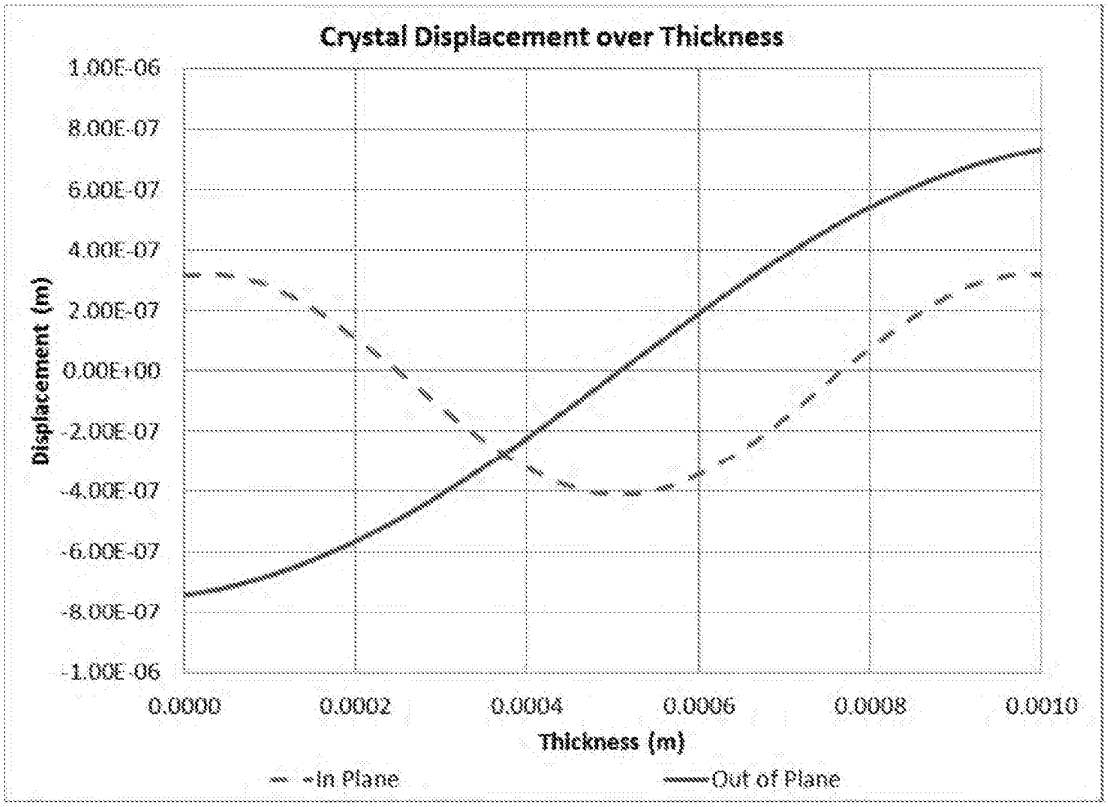

Crystal Displacement over Thickness
1.00E-06
8.00E-07
6.00E-07
4.00E-07
2.00E-07
0.00E+00
-2.00E-07
-4.00E-07
-6.00E-07
-8.00E-07
-1.00E-06
Displacement (m)
0.0000
0.0002
0.0004
0.0006
0.0008
0.0010
Thickness (m)
In Plane
Out of Plane

FIG. 10

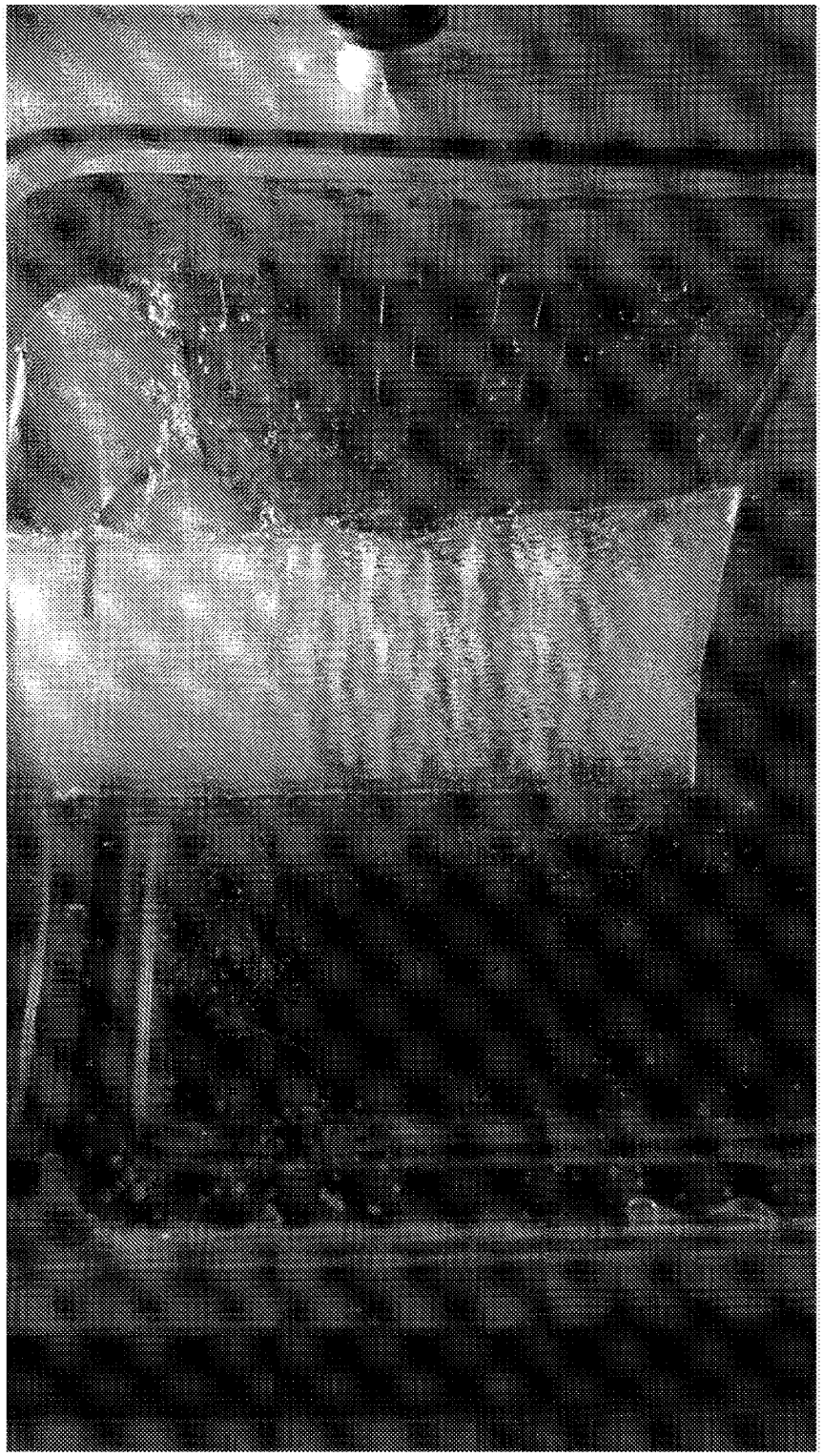


FIG. 11

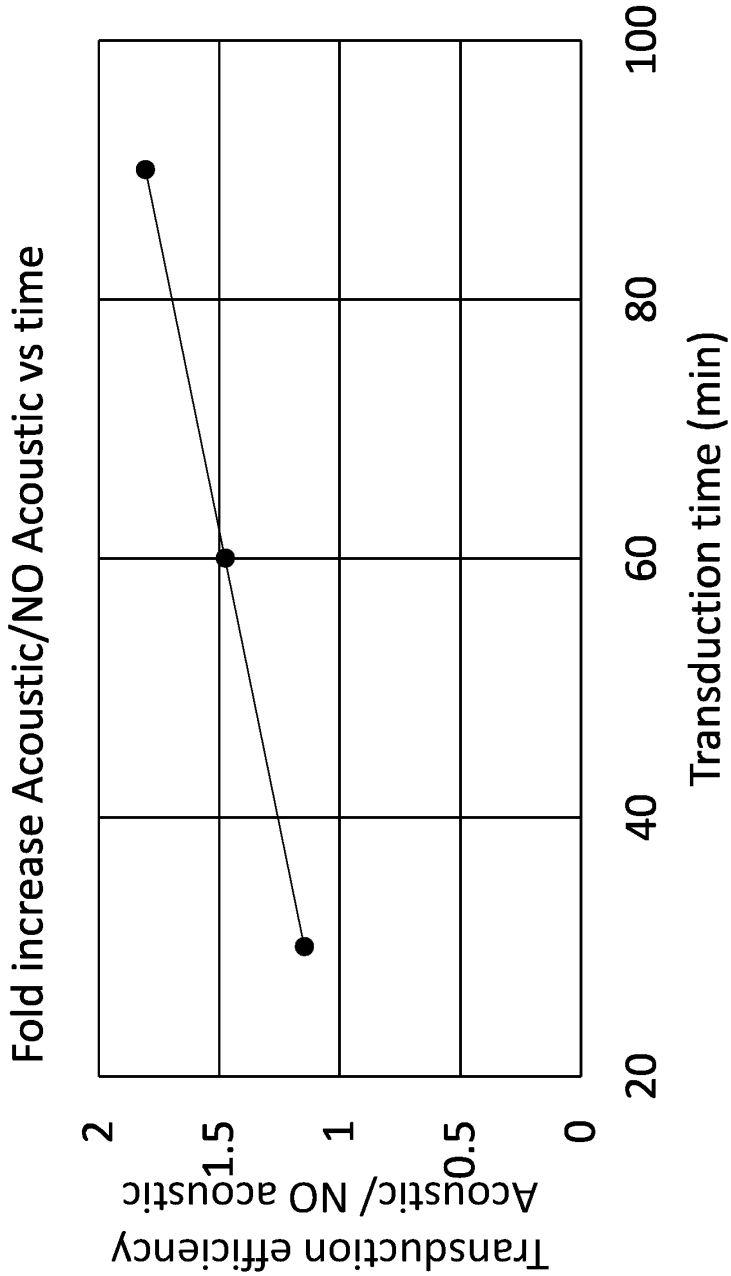

Fold increase Acoustic/NO Acoustic vs time
Transduction efficiency
Acoustic/ NO acoustic
0
0.5
1
1.5
2
20
40
60
80
100
Transduction time (min)

FIG. 12