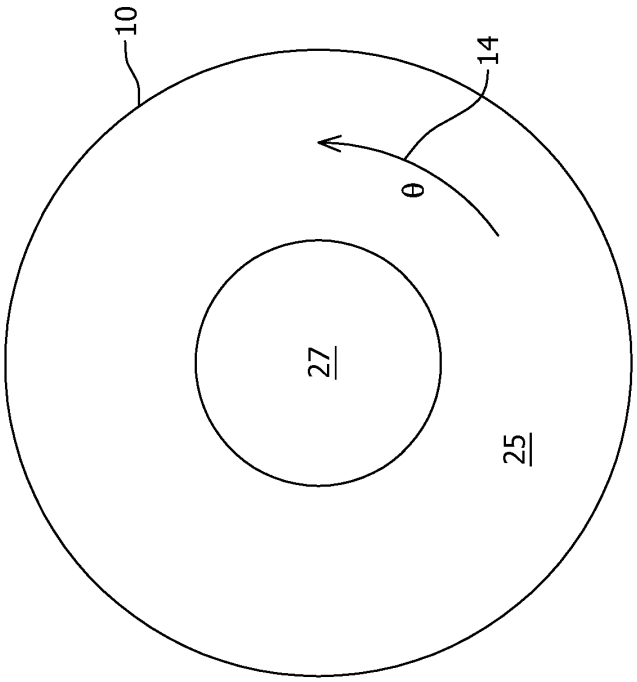


FIG. 1

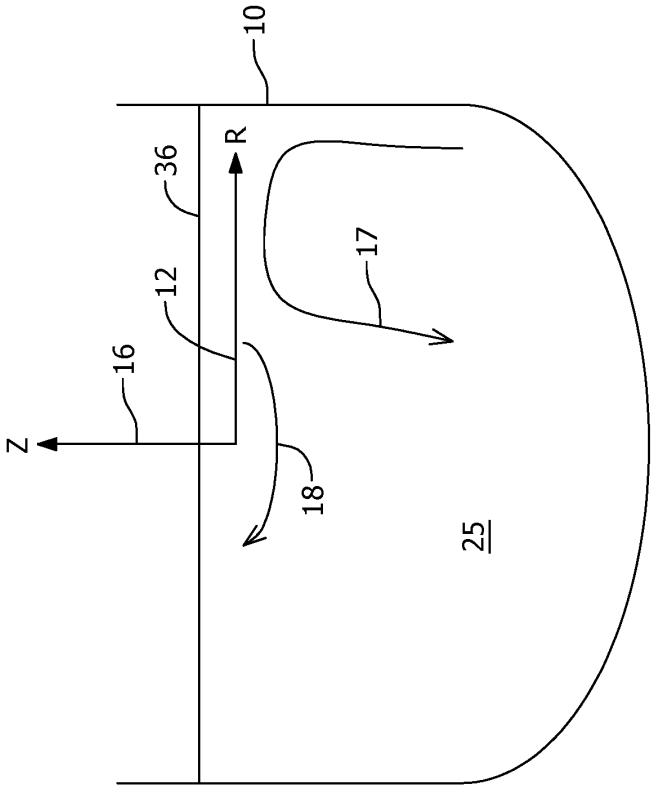


FIG. 2

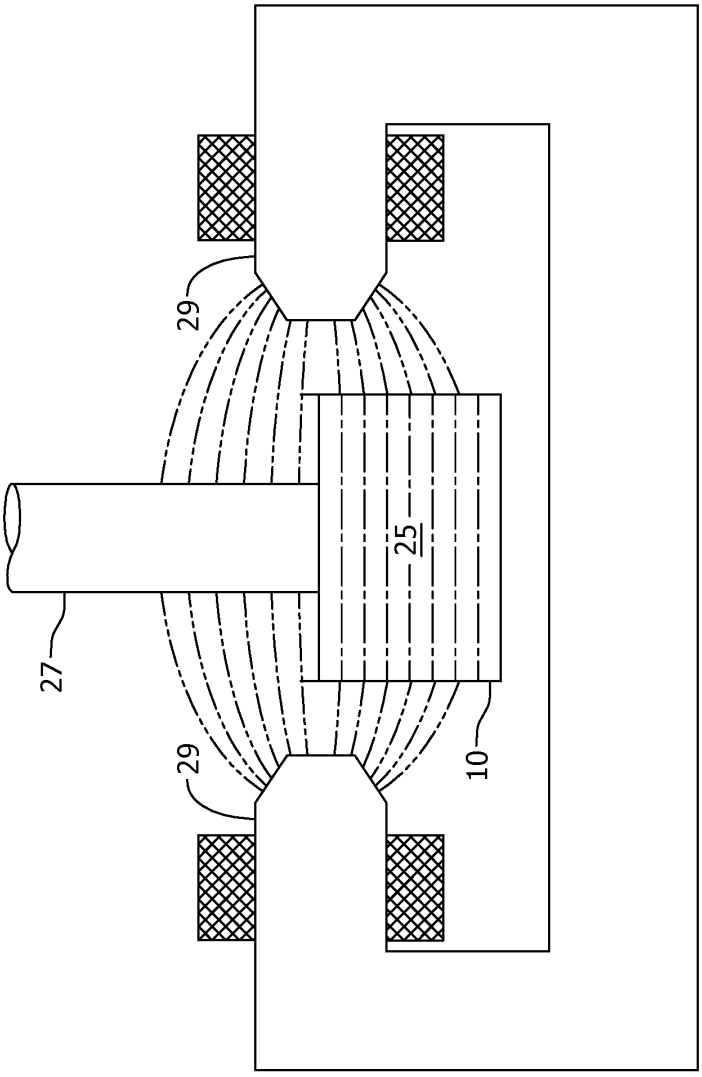


FIG. 3

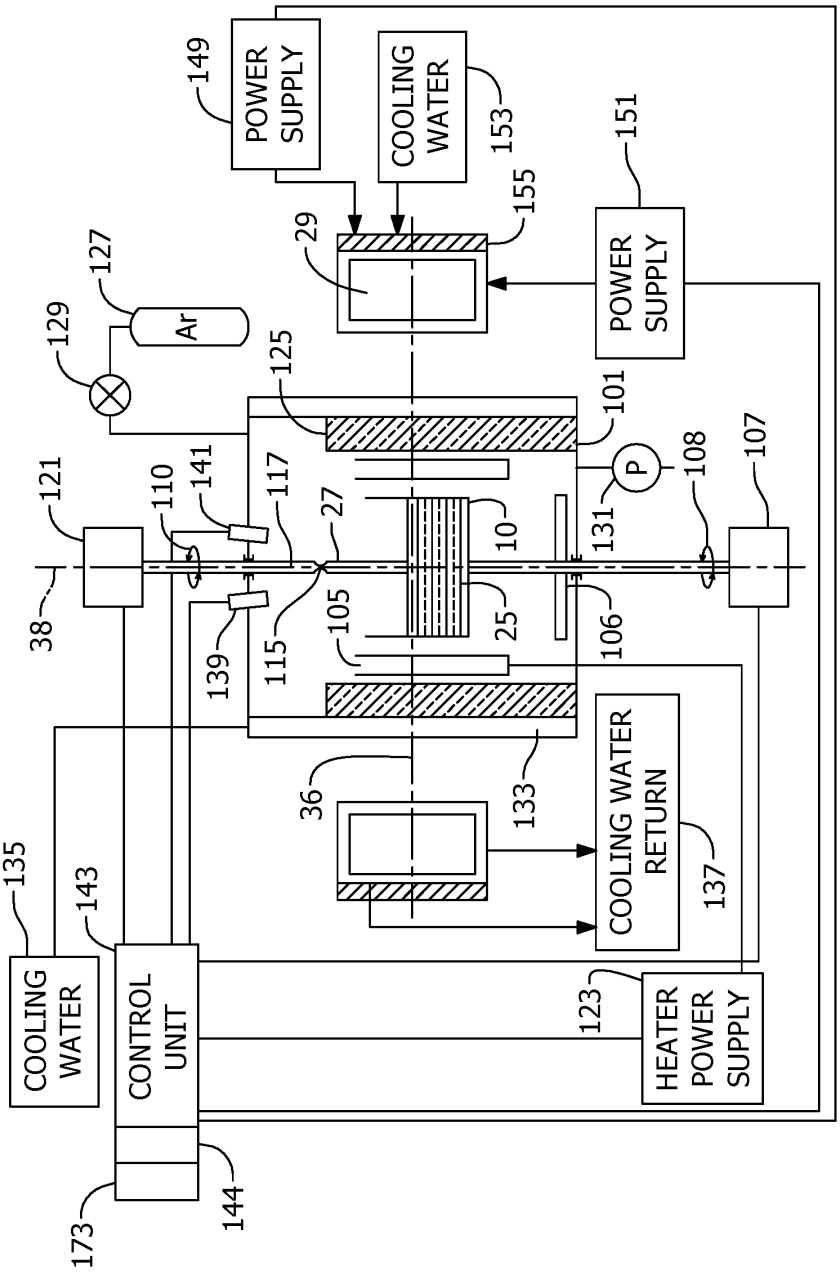

100
149
POWER SUPPLY
COOLING WATER
153
151
155
29
127
Ar
129
125
101
121
110
141
117
27
10
131
108
107
38
139
115
105
25
106
36
133
COOLING WATER RETURN
137
135
143
COOLING WATER
CONTROL UNIT
123
HEATER POWER SUPPLY
173
144

FIG. 4

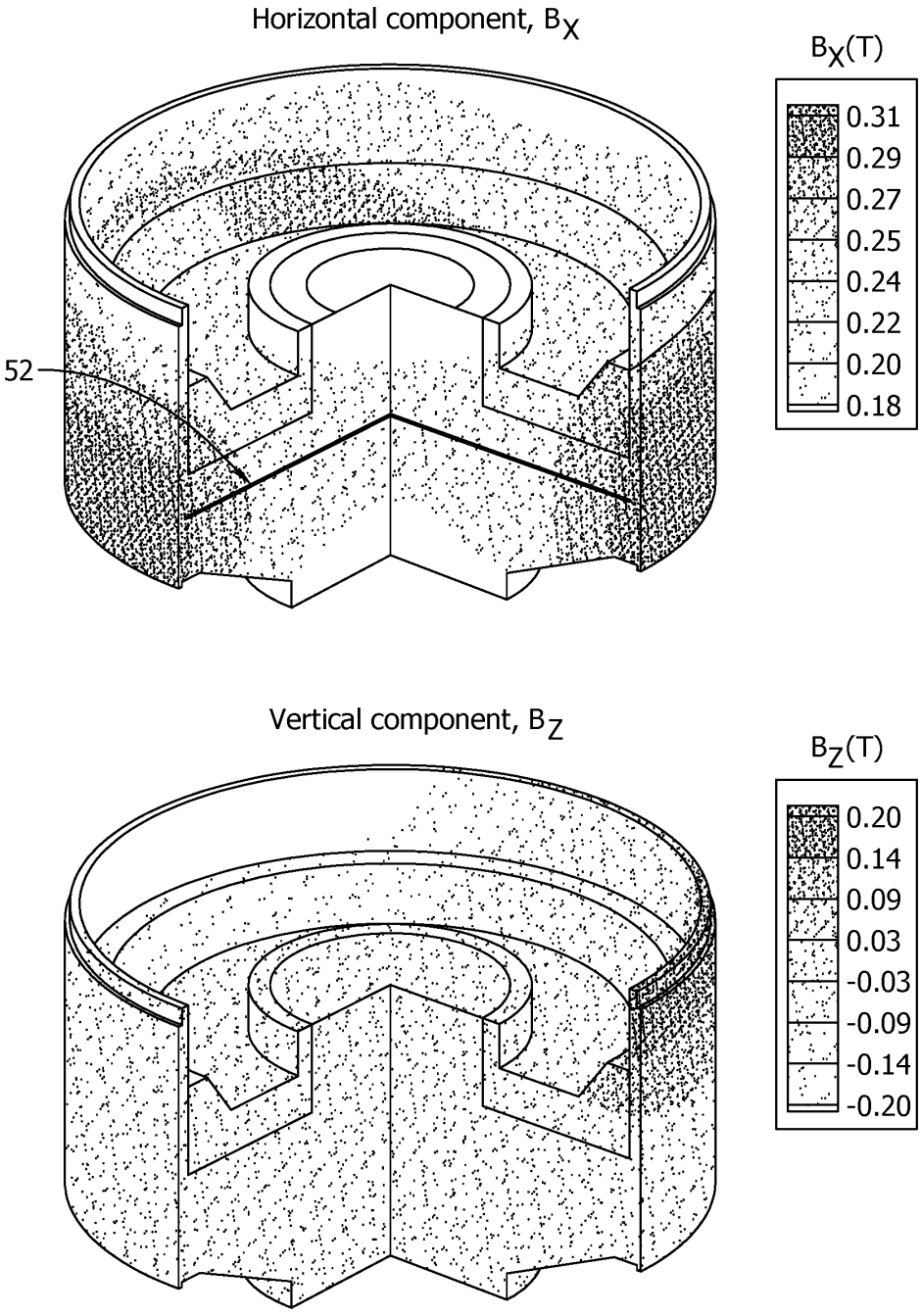

Horizontal component, B_X
B_X(T)
0.31
0.29
0.27
0.25
0.24
0.22
0.20
0.18
52
Vertical component, B_Z
B_Z(T)
0.20
0.14
0.09
0.03
-0.03
-0.09
-0.14
-0.20

FIG. 5

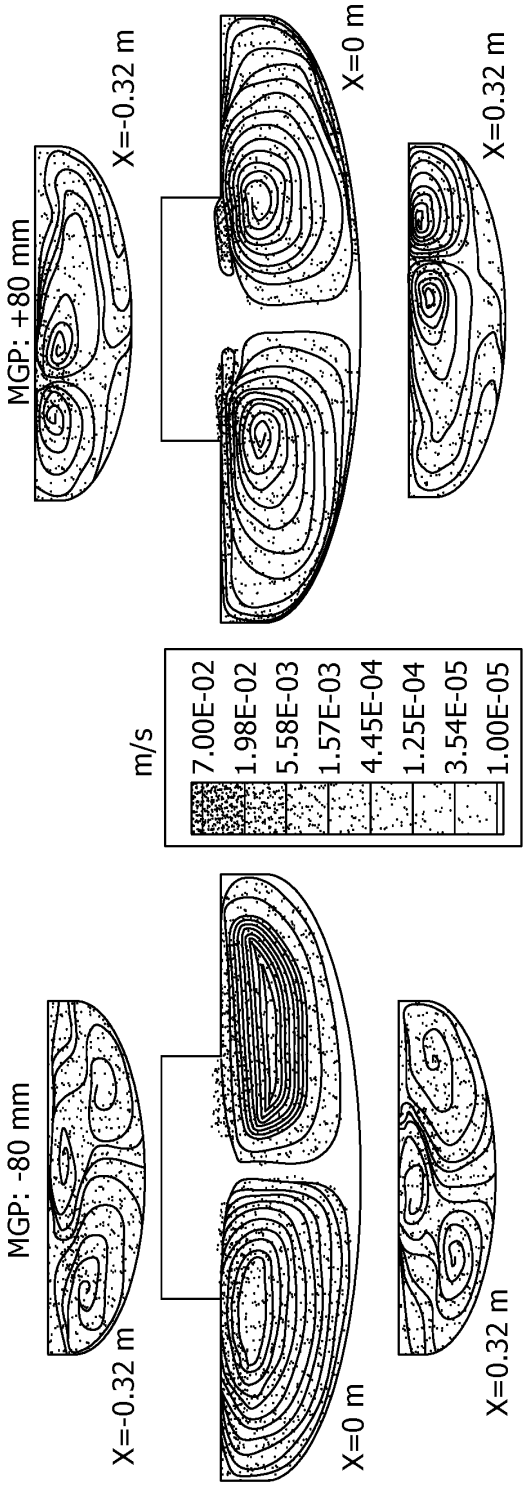

MGP: +80 mm
X=-0.32 m
X=0 m
X=0.32 m
m/s
7.00E-02
1.98E-02
5.58E-03
1.57E-03
4.45E-04
1.25E-04
3.54E-05
1.00E-05
MGP: -80 mm
X=-0.32 m
X=0 m
X=0.32 m

FIG. 6

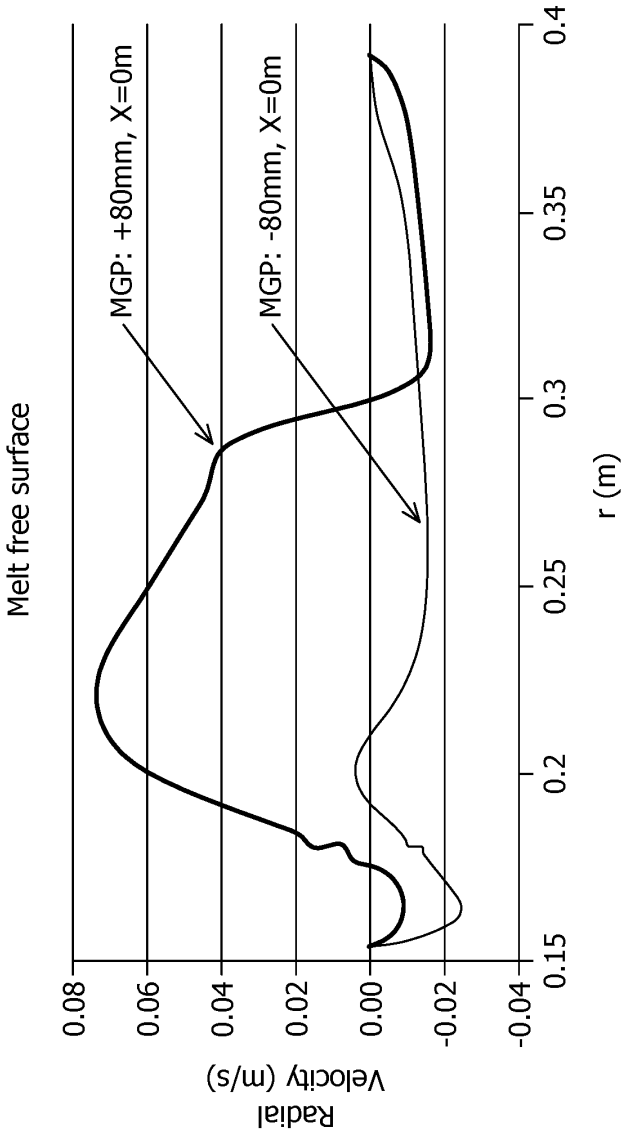

Melt free surface
MGP: +80mm, X=0m
MGP: -80mm, X=0m
Radial Velocity (m/s)
0.08
0.06
0.04
0.02
0.00
-0.02
-0.04
0.15
0.2
0.25
0.3
0.35
0.4
r (m)

FIG. 7

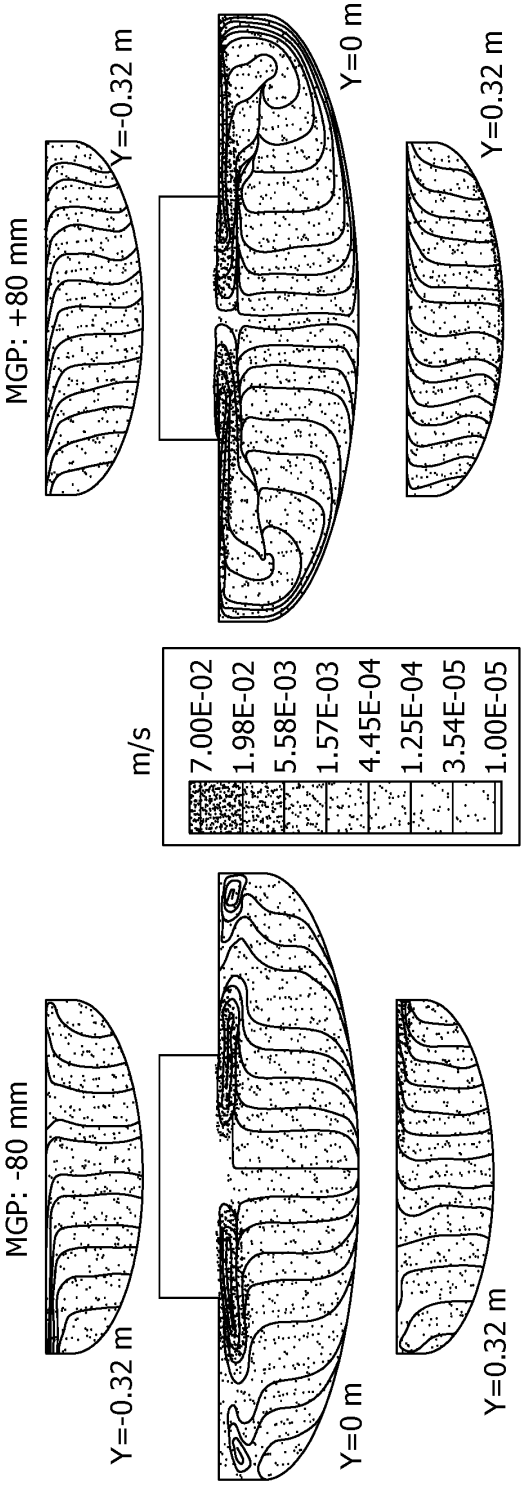

MGP: +80 mm
Y=-0.32 m
Y=0 m
Y=0.32 m
m/s
7.00E-02
1.98E-02
5.58E-03
1.57E-03
4.45E-04
1.25E-04
3.54E-05
1.00E-05
MGP: -80 mm
Y=-0.32 m
Y=0 m
Y=0.32 m

FIG. 8

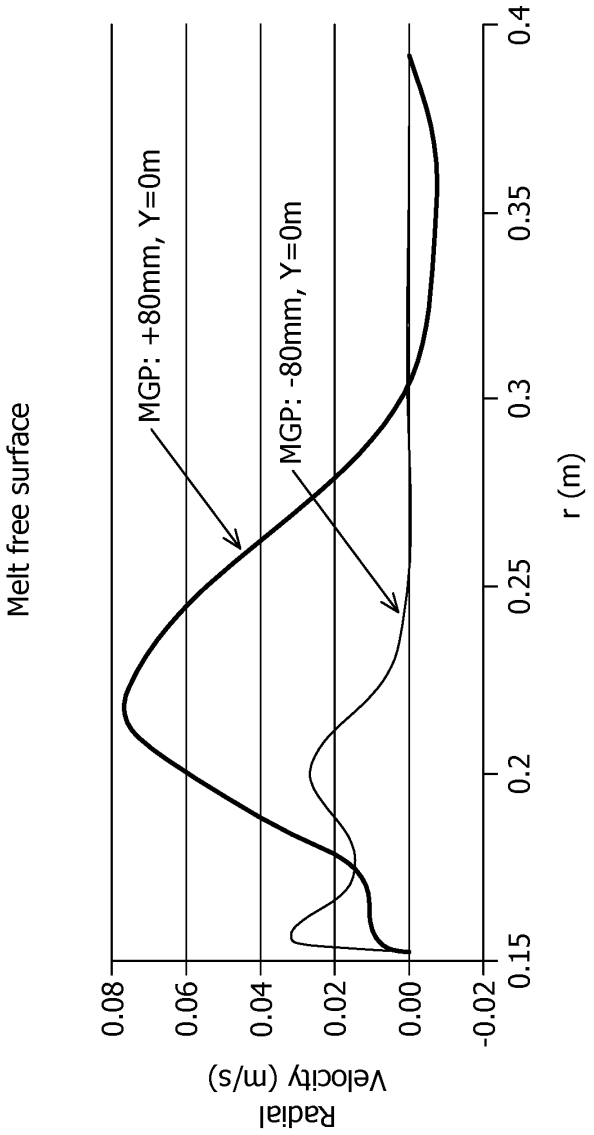

Melt free surface
MGP: +80mm, Y=0m
MGP: -80mm, Y=0m
Radial Velocity (m/s)
0.08
0.06
0.04
0.02
0.00
-0.02
0.15
0.2
0.25
0.3
0.35
0.4
r (m)

FIG. 9

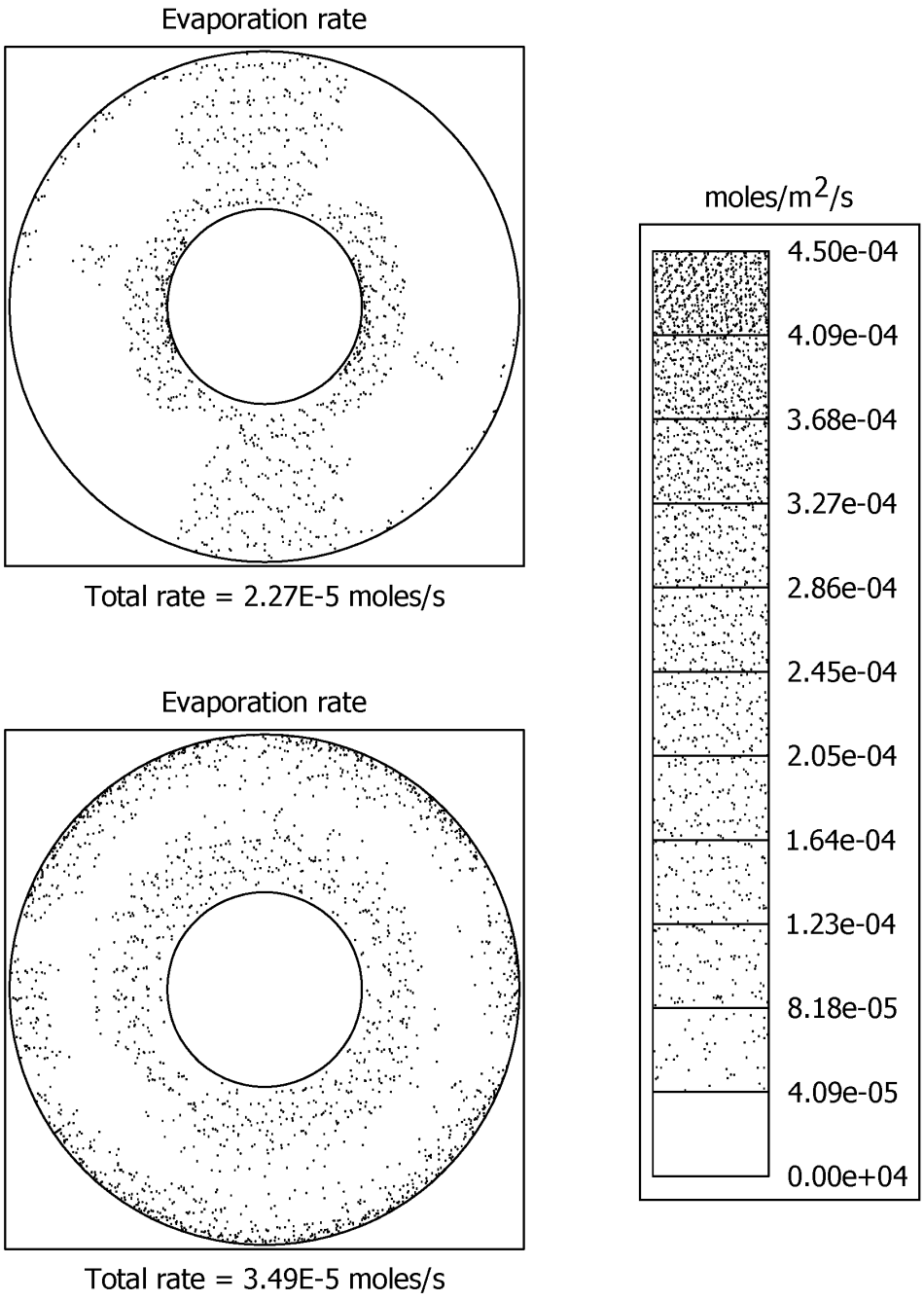

Evaporation rate
Total rate = 2.27E-5 moles/s
Evaporation rate
Total rate = 3.49E-5 moles/s
moles/m2/s
4.50e-04
4.09e-04
3.68e-04
3.27e-04
2.86e-04
2.45e-04
2.05e-04
1.64e-04
1.23e-04
8.18e-05
4.09e-05
0.00e+04

FIG. 10

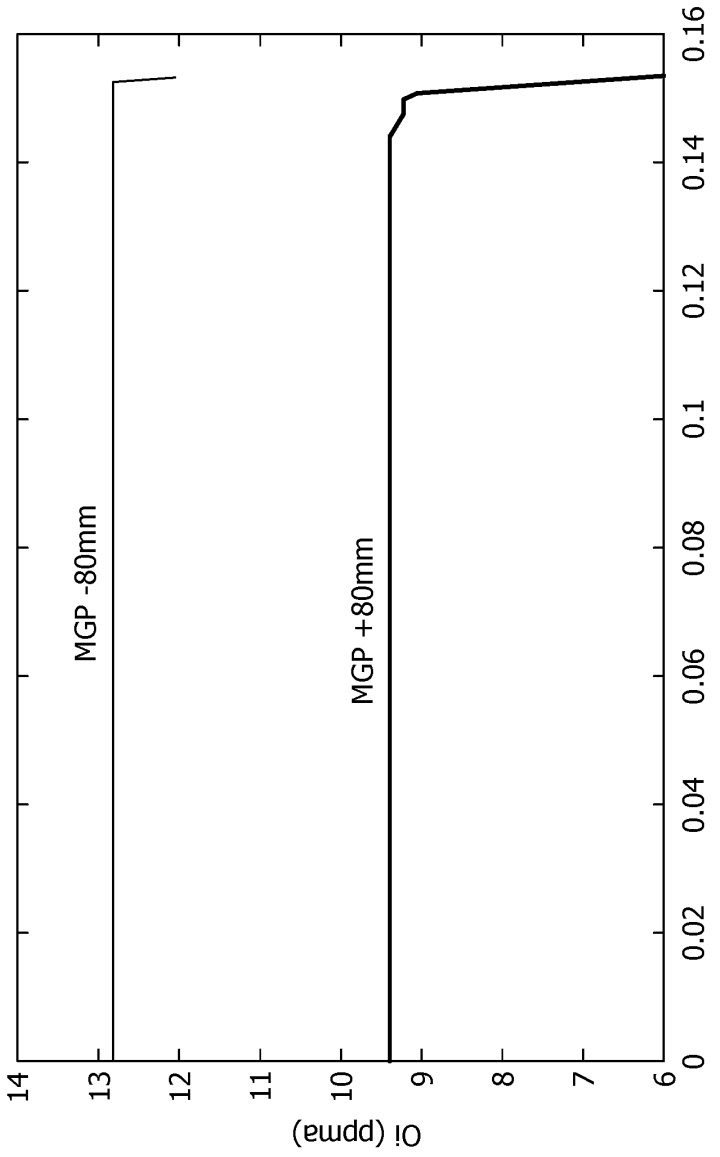

MGP -80mm
MGP +80mm
Oi (ppma)
r (m)
14
13
12
11
10
9
8
7
6
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16

FIG. 11

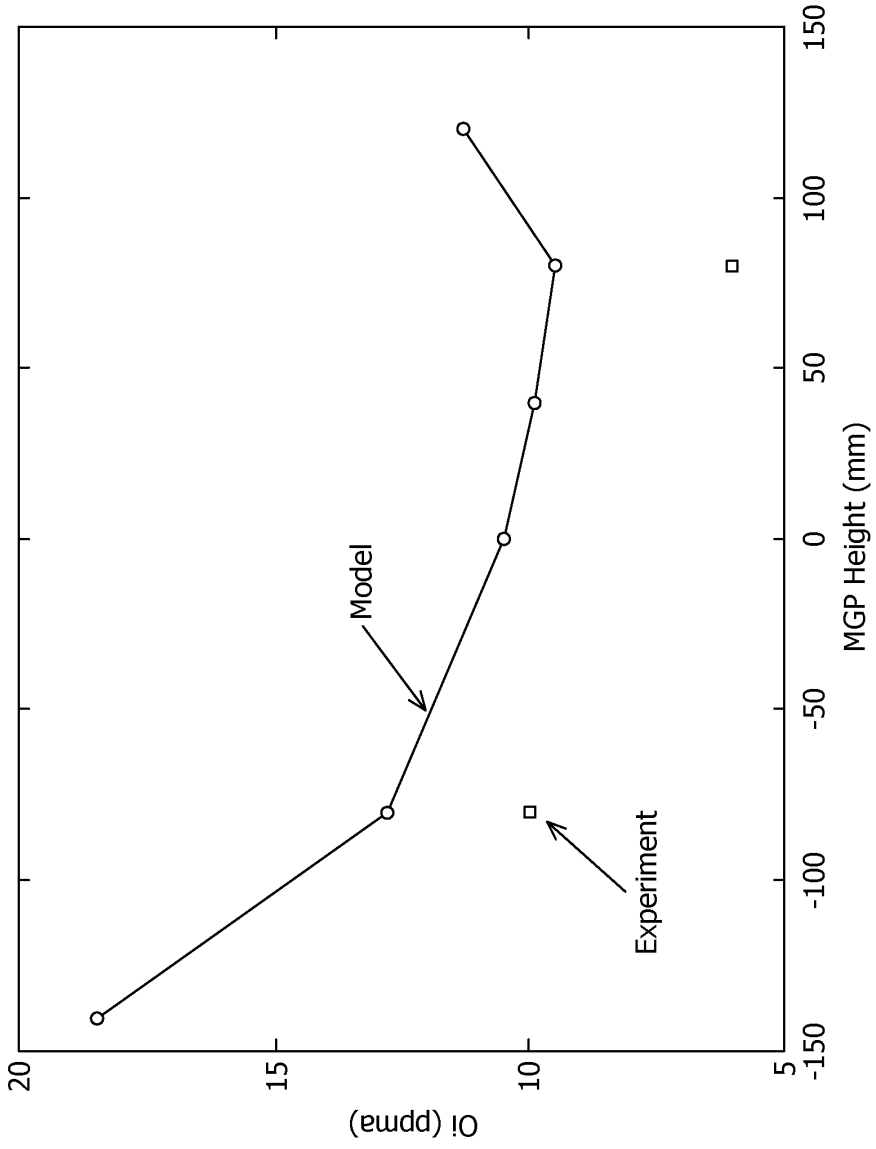

Oi (ppma)
20
15
10
5
-150
-100
-50
0
50
100
150
MGP Height (mm)
Model
Experiment

FIG. 12

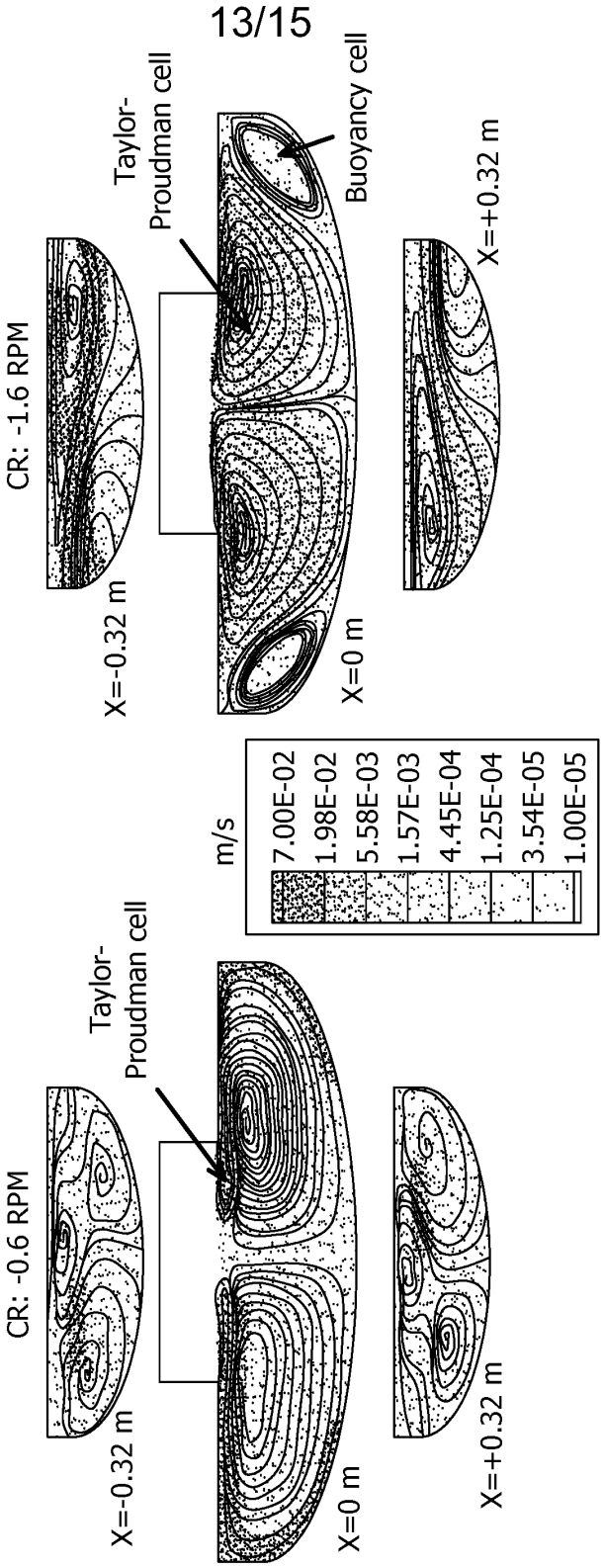
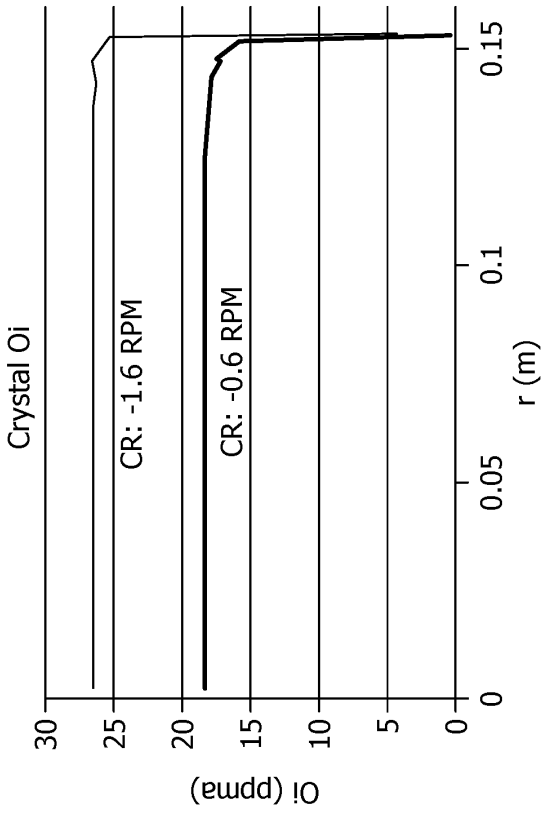

CR: -1.6 RPM
X=-0.32 m
Taylor-
Proudman cell
Buoyancy cell
X=0 m
X=+0.32 m
m/s
7.00E-02
1.98E-02
5.58E-03
1.57E-03
4.45E-04
1.25E-04
3.54E-05
1.00E-05
CR: -0.6 RPM
X=-0.32 m
Taylor-
Proudman cell
X=0 m
X=+0.32 m

FIG. 13



CR (RPM)	MGP	Experiment Oi (ppma)	Model Oi (ppma)
-0.6	-80 mm	9.5-10.5	18.5
-1.6	-80 mm	12.5-16.5	26.5

FIG. 14

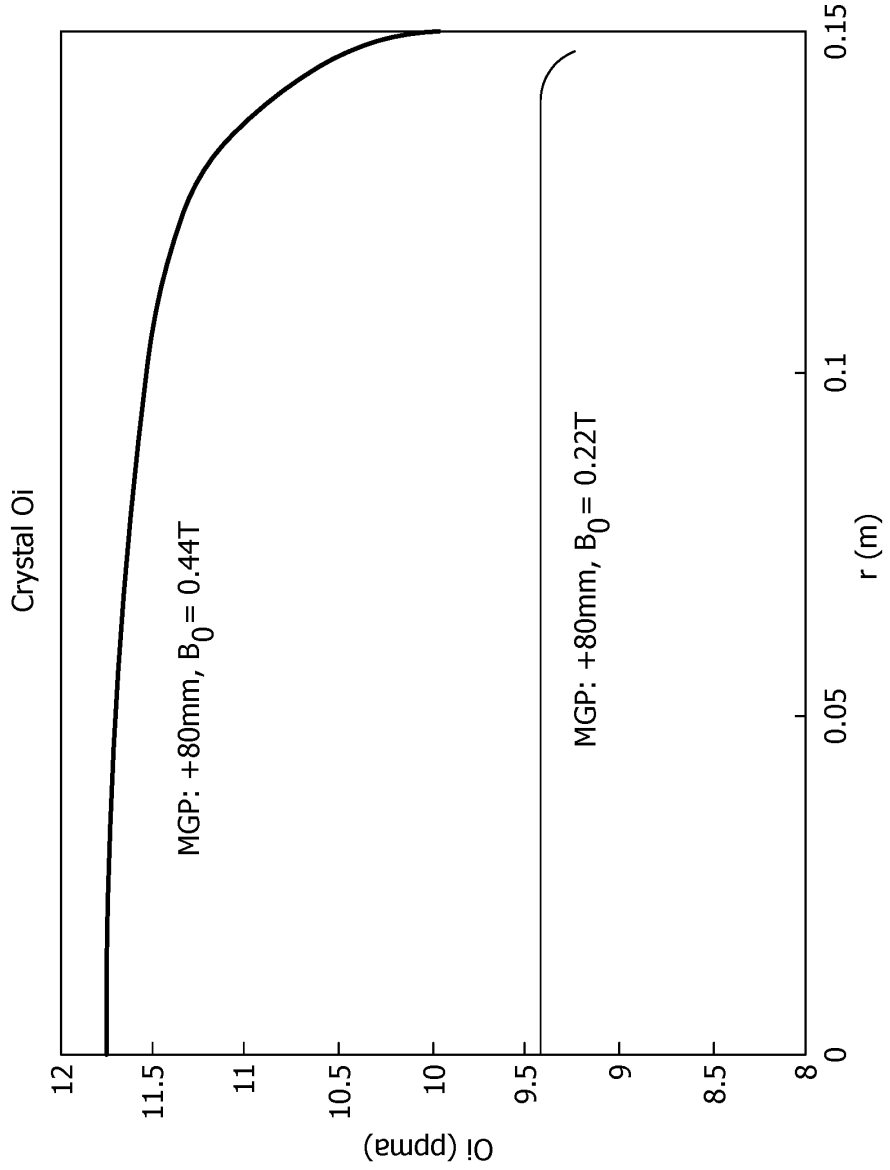

Crystal Oi
MGP: +80mm, B_0= 0.44T
MGP: +80mm, B_0= 0.22T
Oi (ppma)
r (m)
12
11.5
11
10.5
10
9.5
9
8.5
8
0
0.05
0.1
0.15

FIG. 15