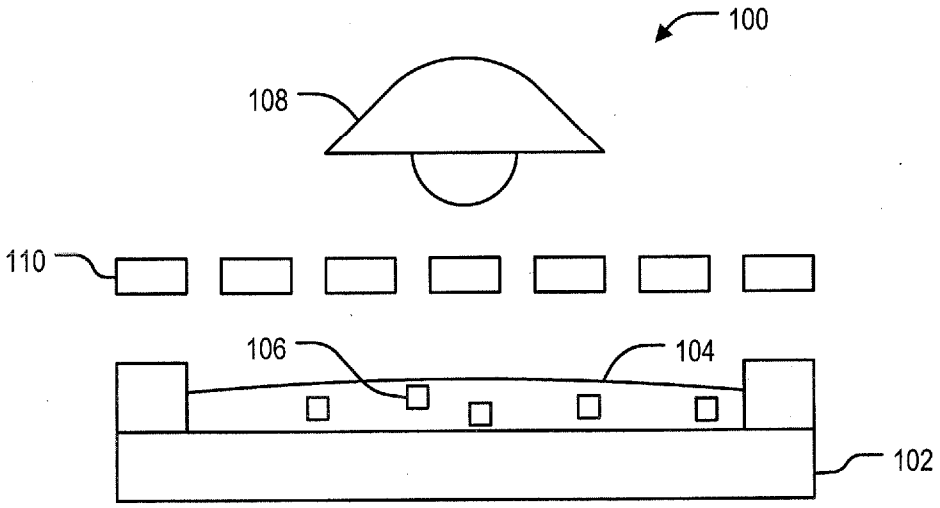


FIG. 1A

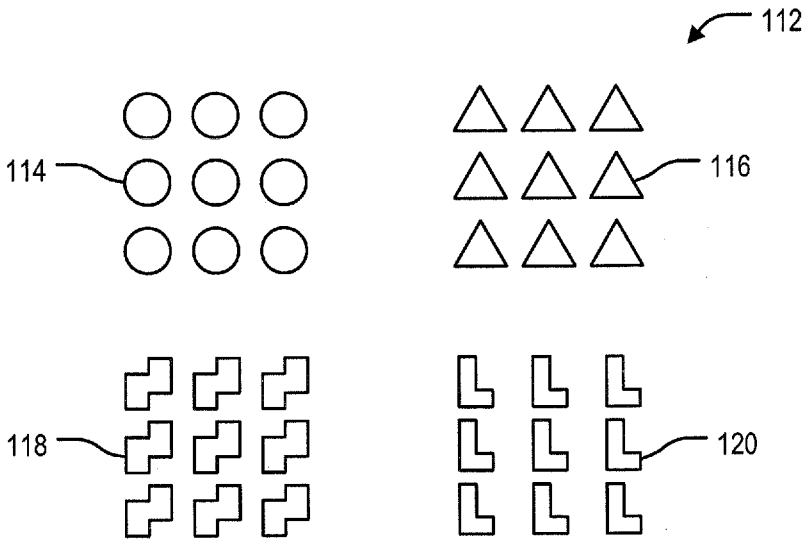


FIG. 1B

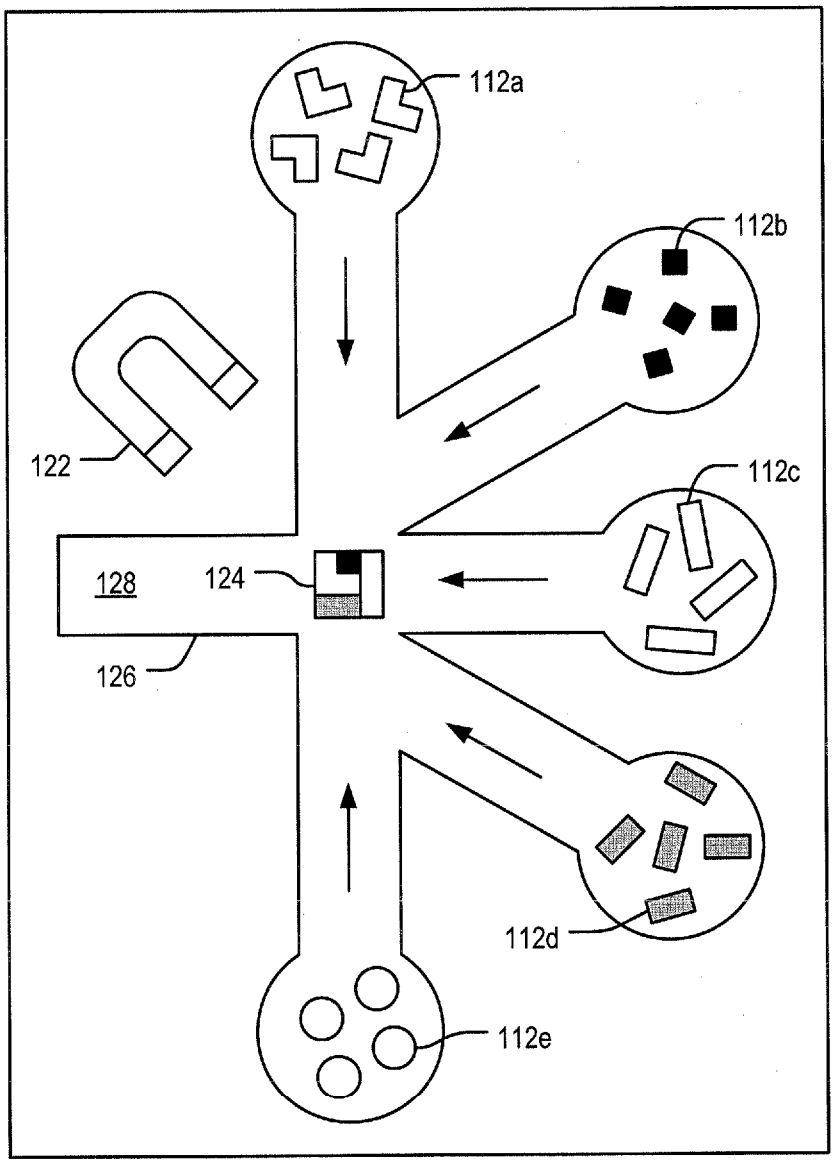


FIG. 1C

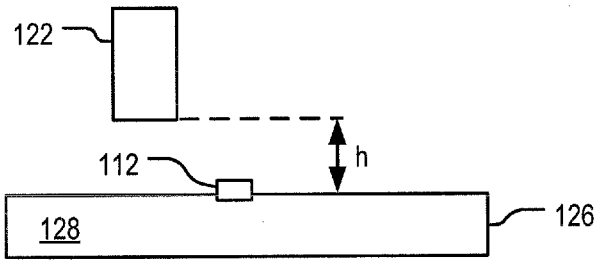

122
h
112
128
126

FIG. 1D

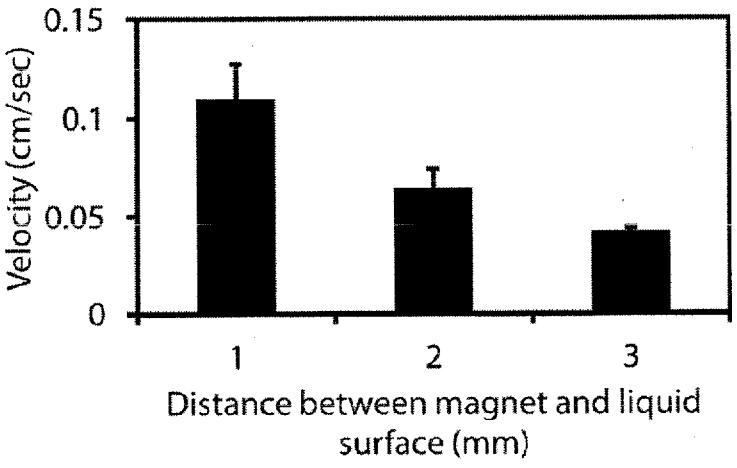

0.15
0.1
0.05
0
Velocity (cm/sec)
1
2
3
Distance between magnet and liquid surface (mm)

FIG. 1E

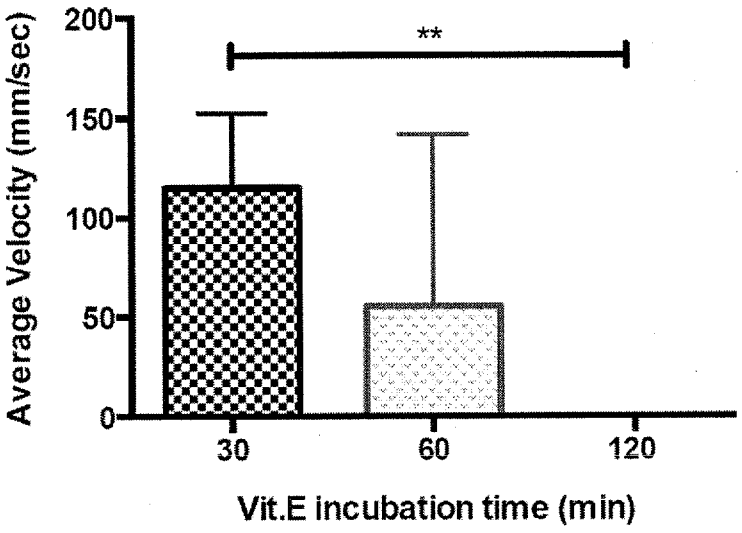

Average Velocity (mm/sec)
200
150
100
50
0
**
30
60
120
Vit.E incubation time (min)

FIG. 1F

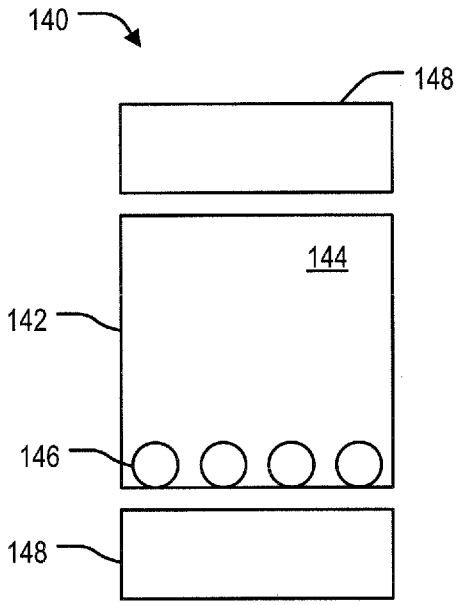


FIG. 1G

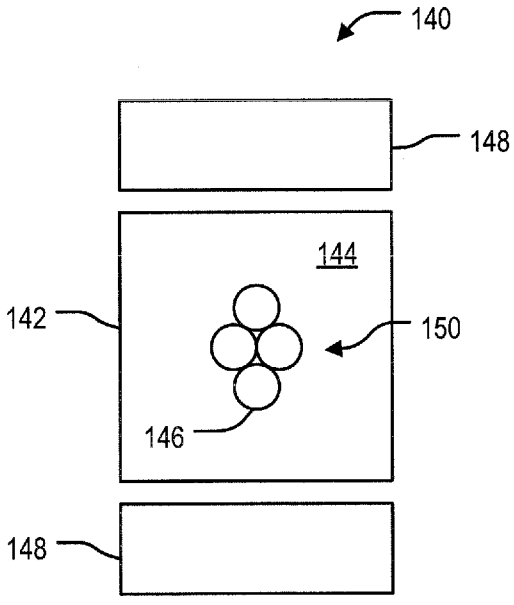


FIG. 1H

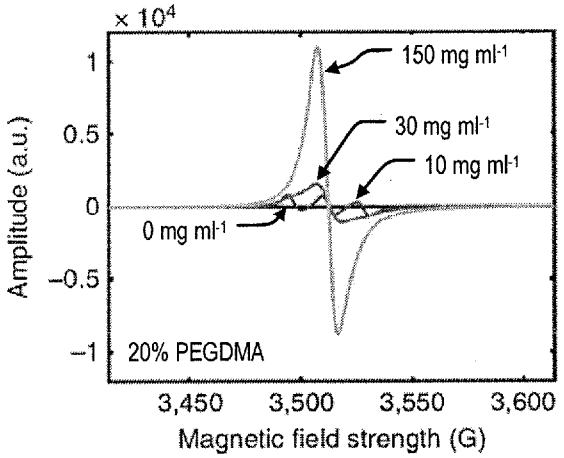


FIG. 2A

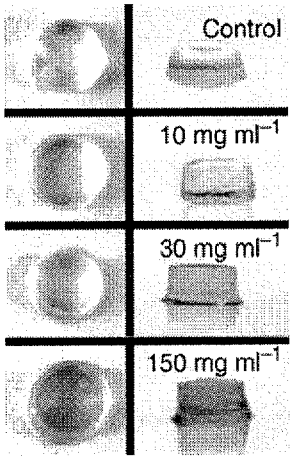


FIG. 2B

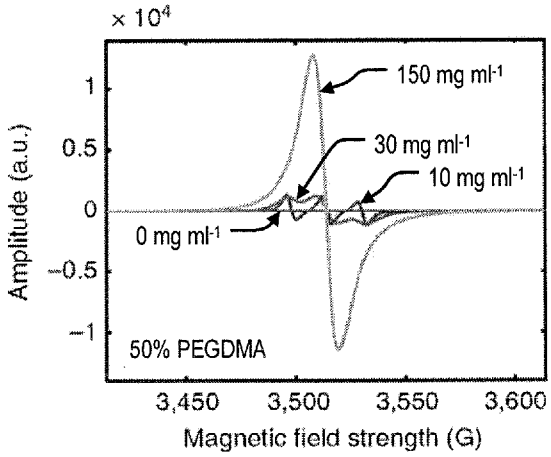


FIG. 2C

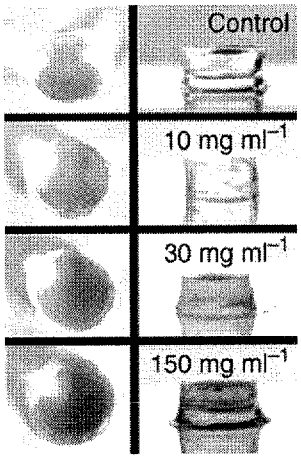


FIG. 2D

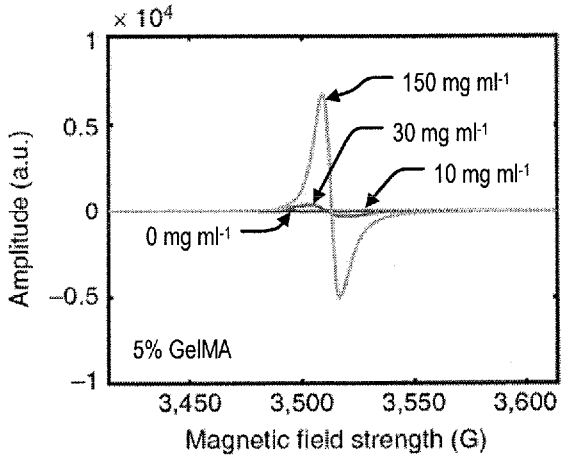


FIG. 2E

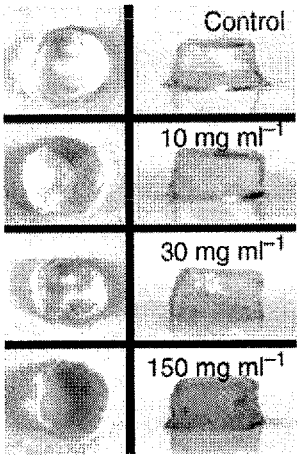


FIG. 2F

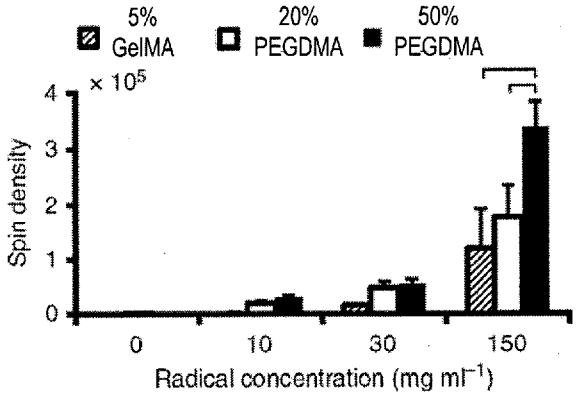


FIG. 2G

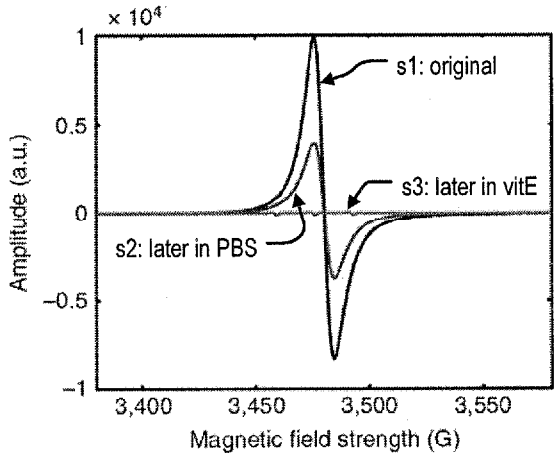


FIG. 2H

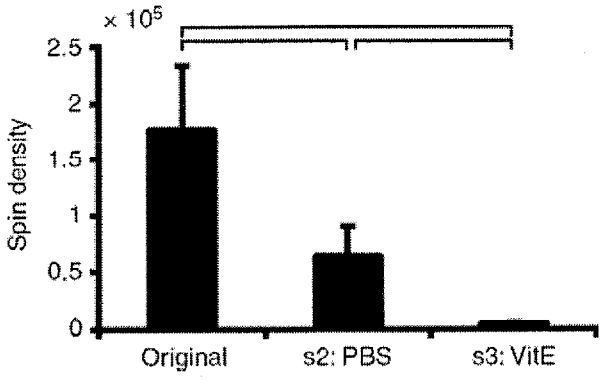


FIG. 2I

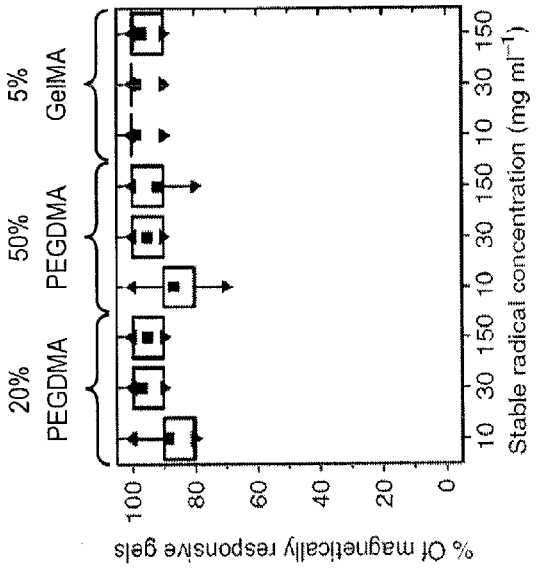


FIG. 3C

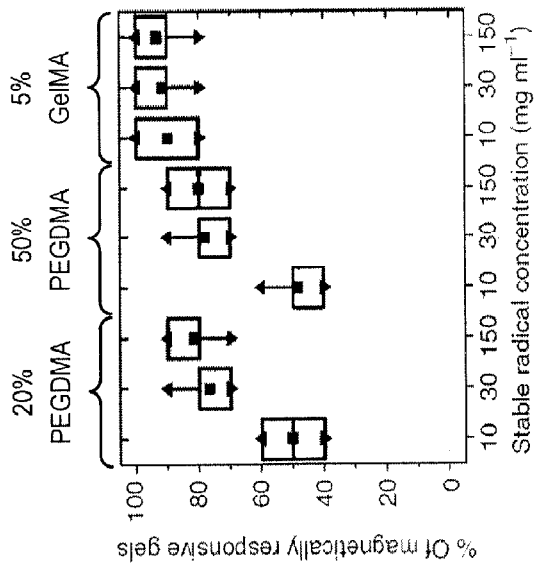


FIG. 3B

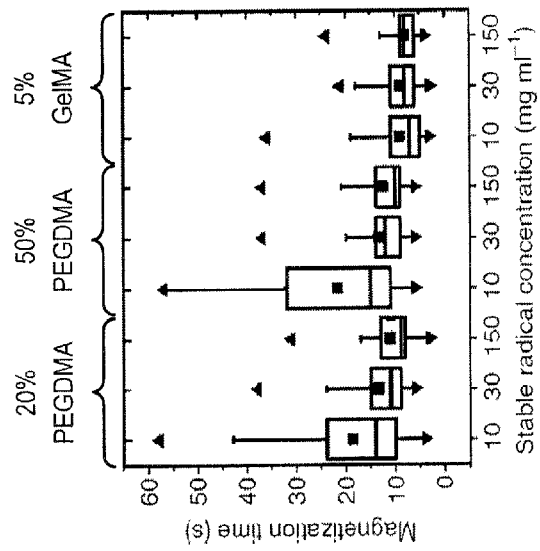


FIG. 3A

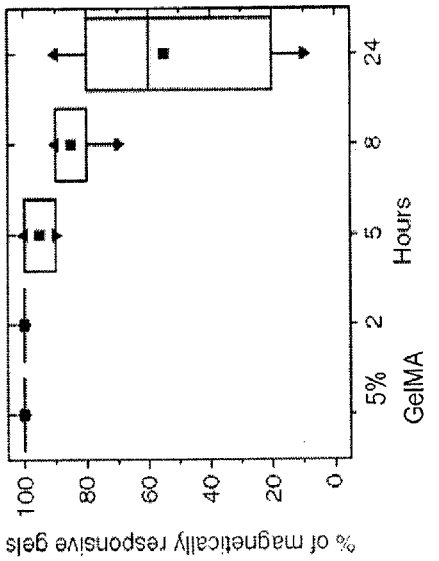


FIG. 3F

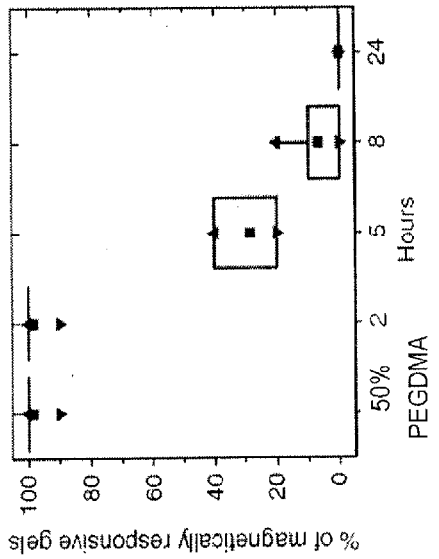


FIG. 3E

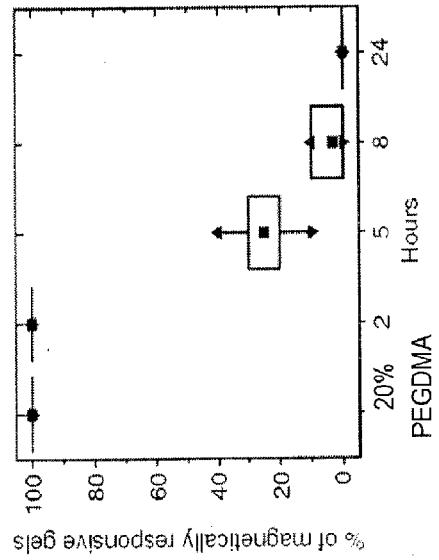


FIG. 3D

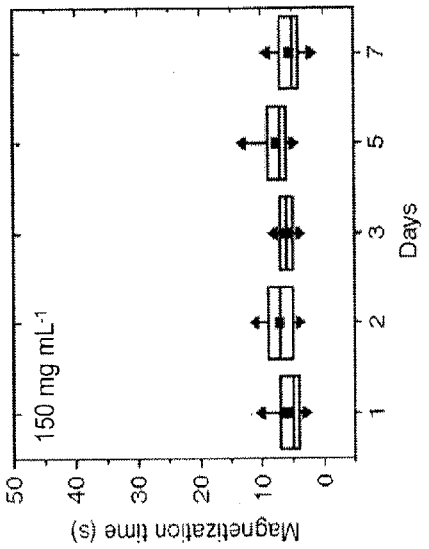


FIG. 3I

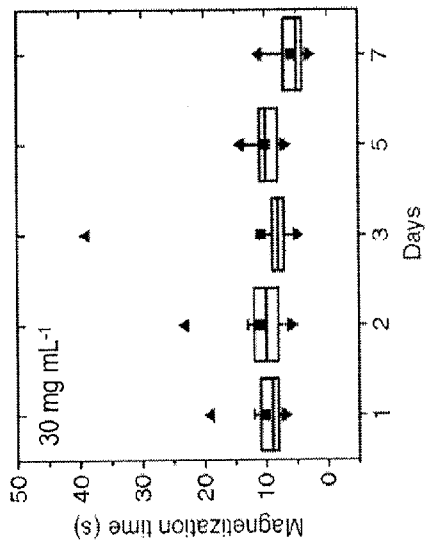


FIG. 3H

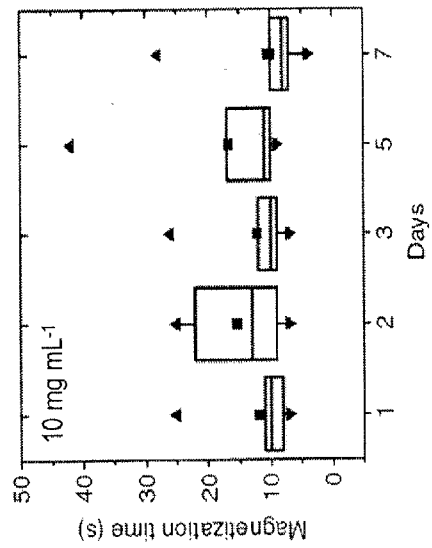


FIG. 3G

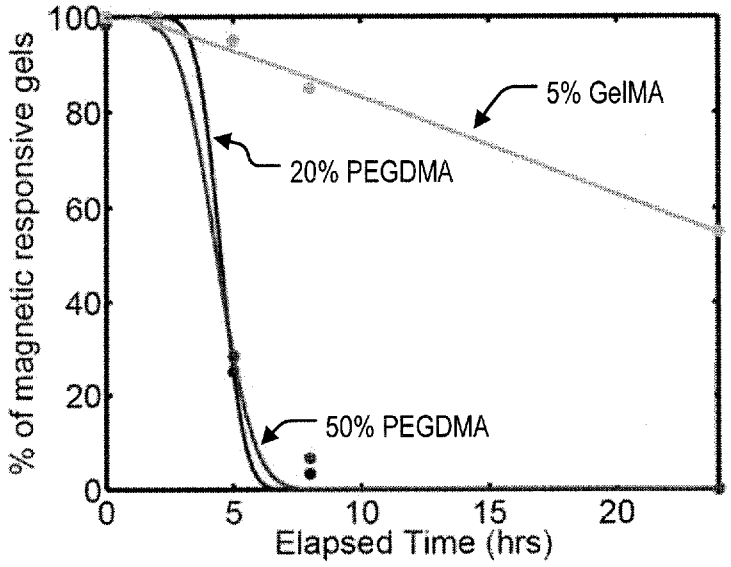

100
80
60
40
20
0
% of magnetic responsive gels
0
5
10
15
20
Elapsed Time (hrs)
5% GelMA
20% PEGDMA
50% PEGDMA

FIG. 3J

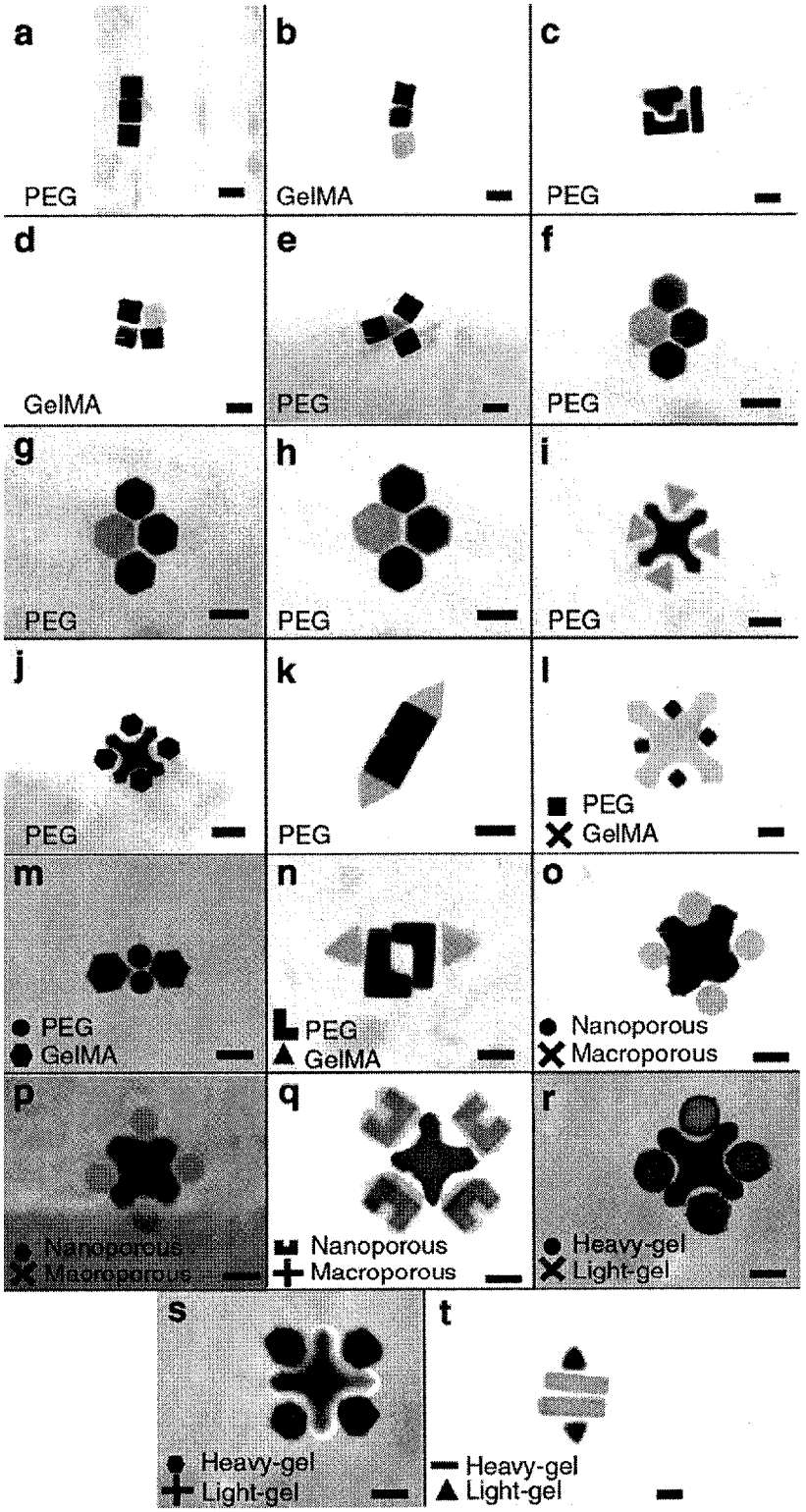

a
PEG
b
GelMA
c
PEG
d
GelMA
e
PEG
f
PEG
g
PEG
h
PEG
i
PEG
j
PEG
k
PEG
l
PEG
GelMA
m
PEG
GelMA
n
PEG
GelMA
o
Nanoporous
Macroporous
p
Nanoporous
Macroporous
q
Nanoporous
Macroporous
r
Heavy-gel
Light-gel
s
Heavy-gel
Light-gel
t
Heavy-gel
Light-gel

FIG. 4A

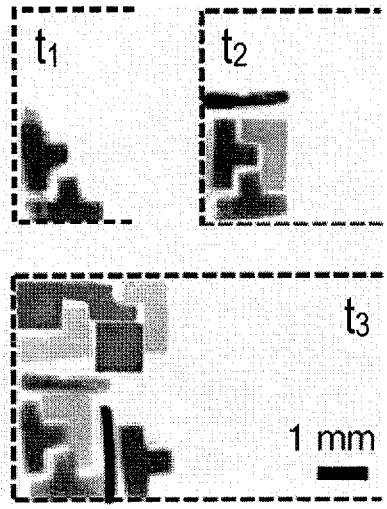


FIG. 4B

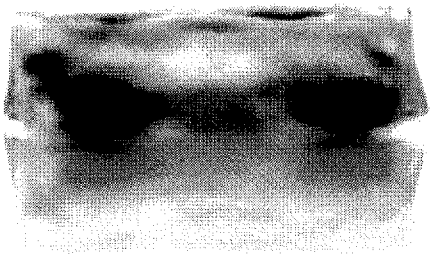


FIG. 4C

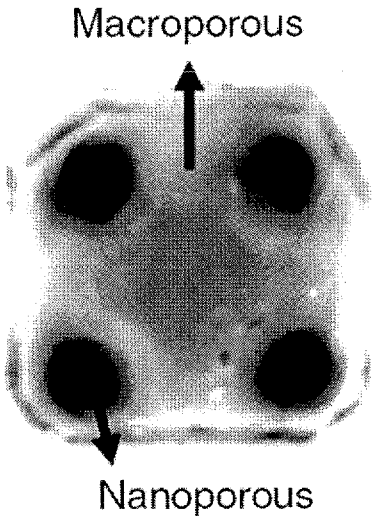


FIG. 4D

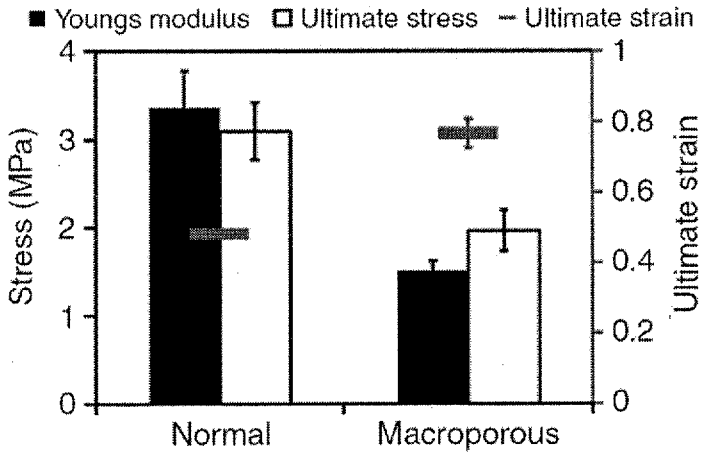

Youngs modulus
Ultimate stress
Ultimate strain
Stress (MPa)
Ultimate strain
0
1
2
3
4
0
0.2
0.4
0.6
0.8
1
Normal
Macroporous

FIG. 4E

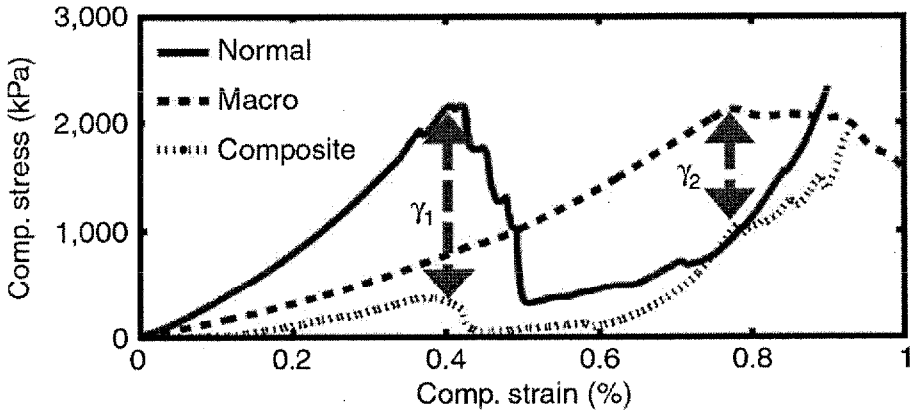

Normal
Macro
Composite
Comp. stress (kPa)
Comp. strain (%)
0
1,000
2,000
3,000
0
0.2
0.4
0.6
0.8
1
γ_1
γ_2

FIG. 4F

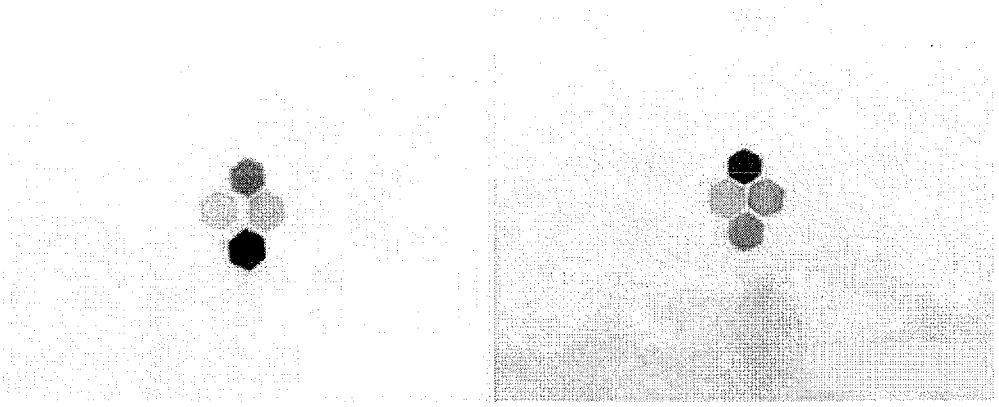


FIG. 4G

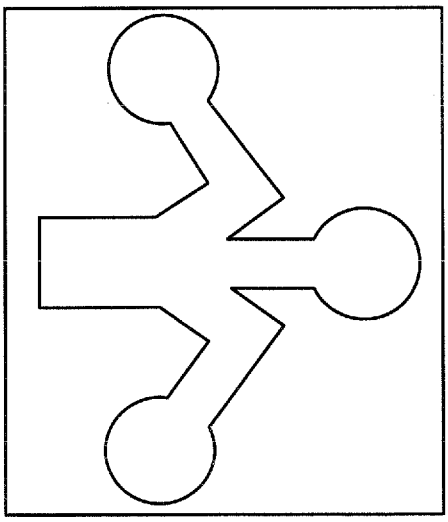


FIG. 4H

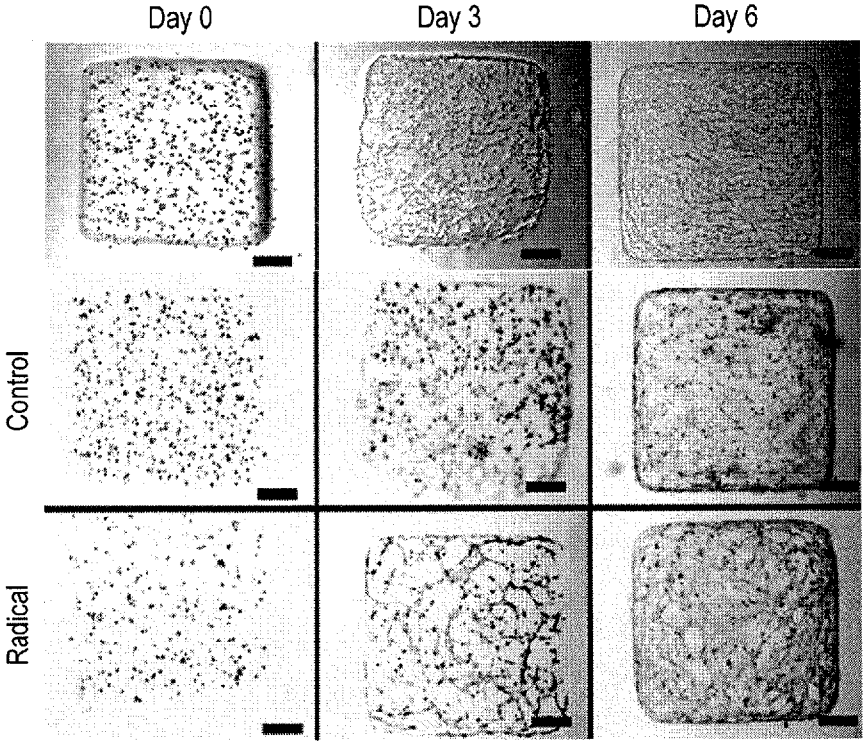

Day 0
Day 3
Day 6
Control
Radical

FIG. 5A

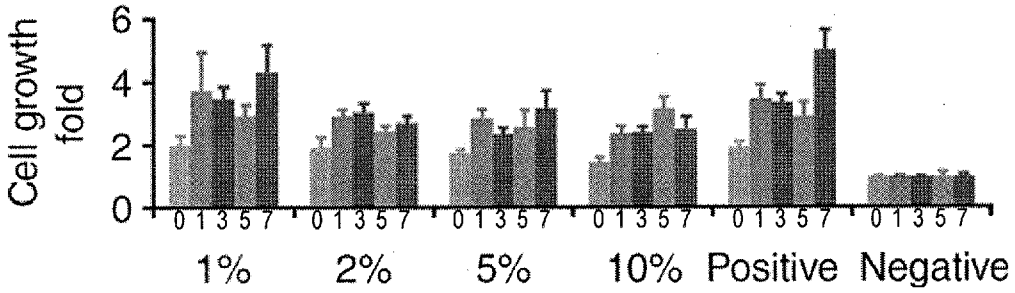

Cell growth fold
6
4
2
0
0 1 3 5 7
1%
2%
5%
10%
Positive
Negative

FIG. 5B

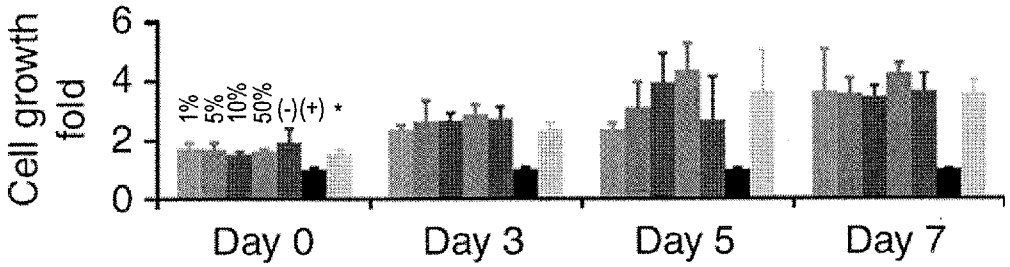


FIG. 5C

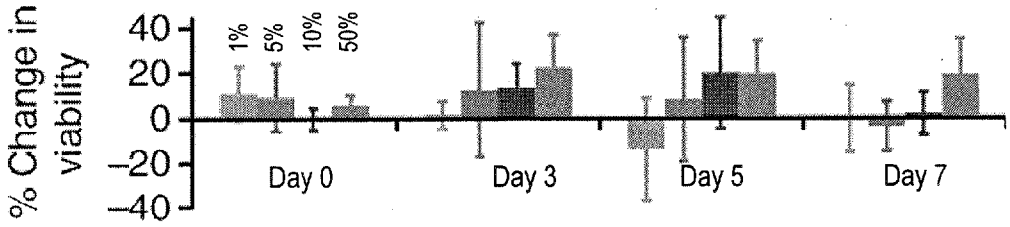


FIG. 5D

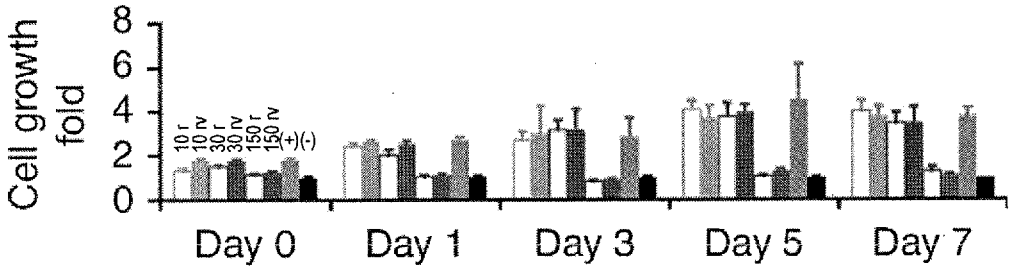


FIG. 5E

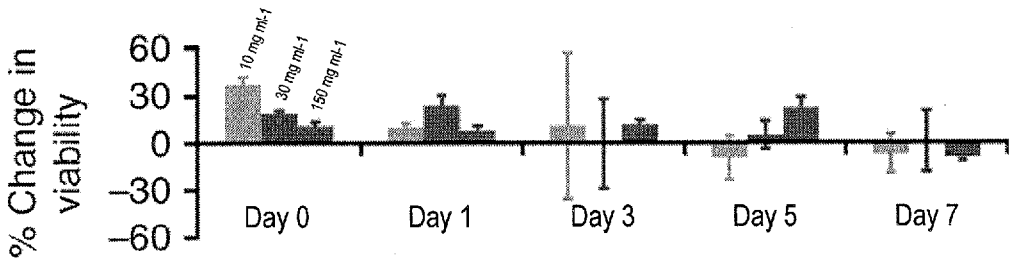


FIG. 5F

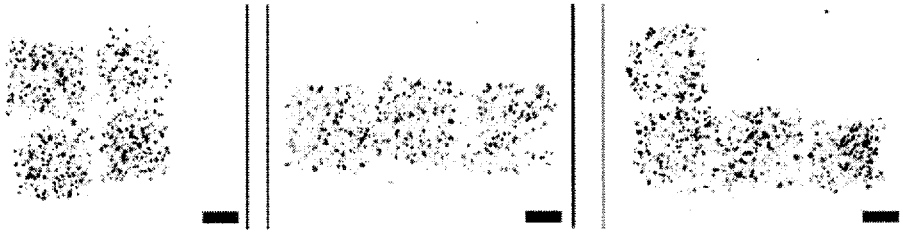


FIG. 5G

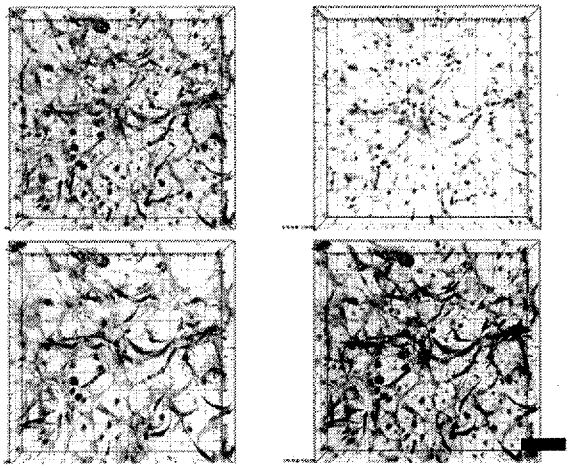


FIG. 5H

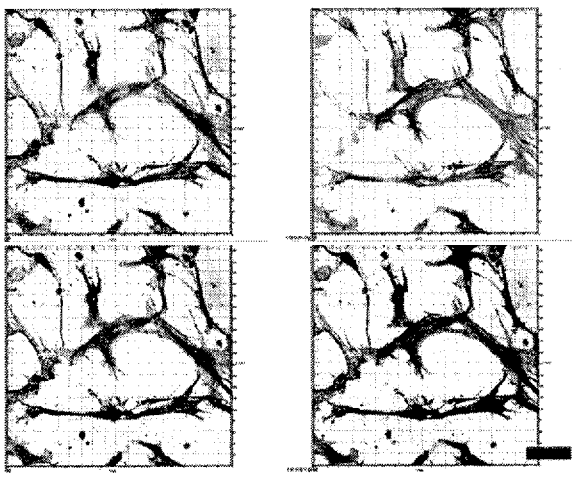


FIG. 5I

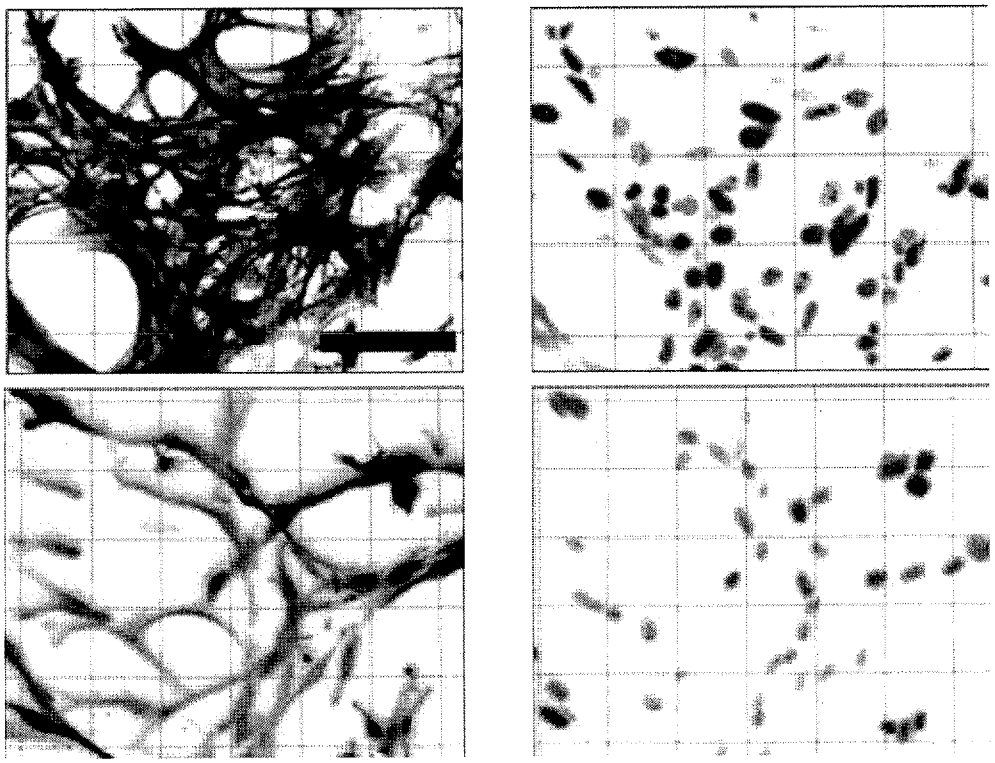


FIG. 5J

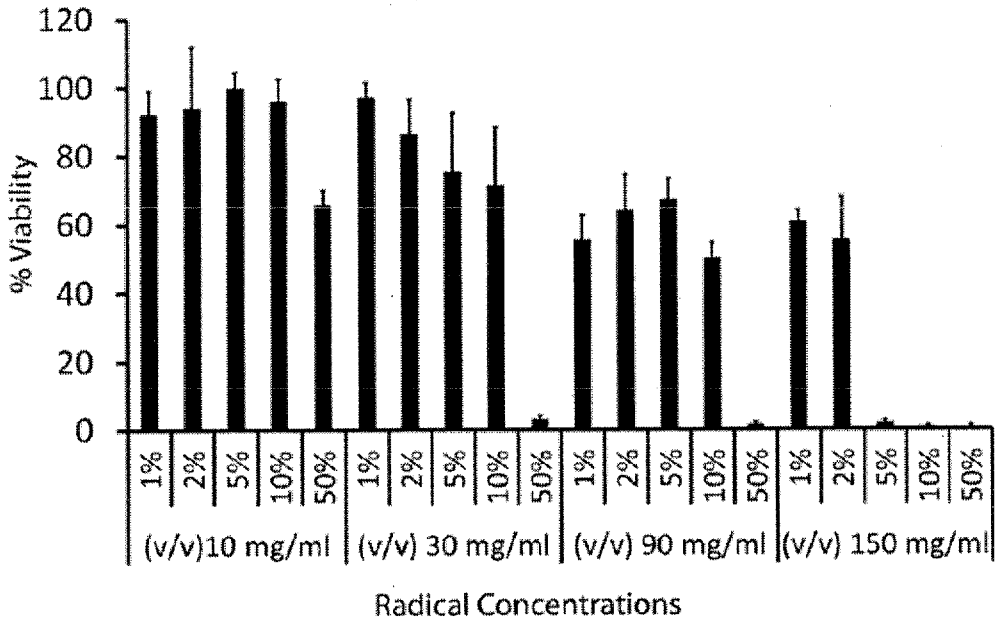

120
100
80
60
40
20
0
% Viability
1%
2%
5%
10%
50%
(v/v)10 mg/ml
(v/v) 30 mg/ml
(v/v) 90 mg/ml
(v/v) 150 mg/ml
Radical Concentrations

FIG. 5K

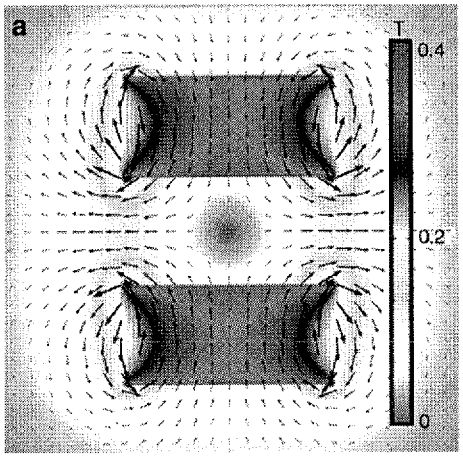


FIG. 6A

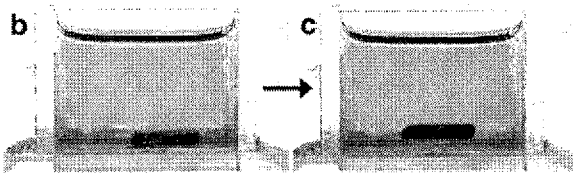


FIG. 6B FIG. 6C

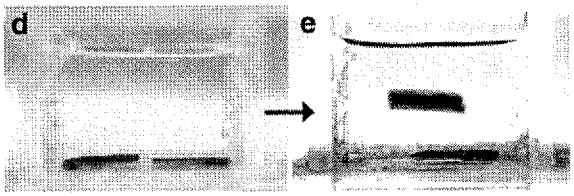


FIG. 6D FIG. 6E

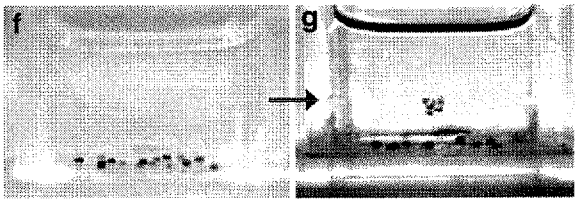


FIG. 6F FIG. 6G

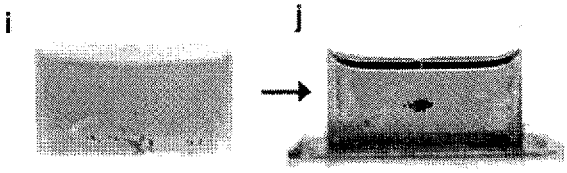


FIG. 6I FIG. 6J

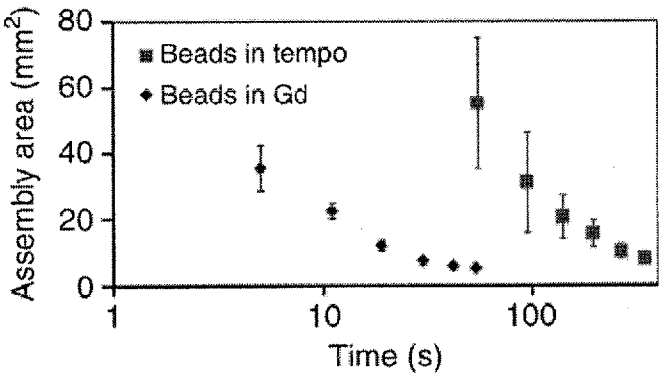


FIG. 6H

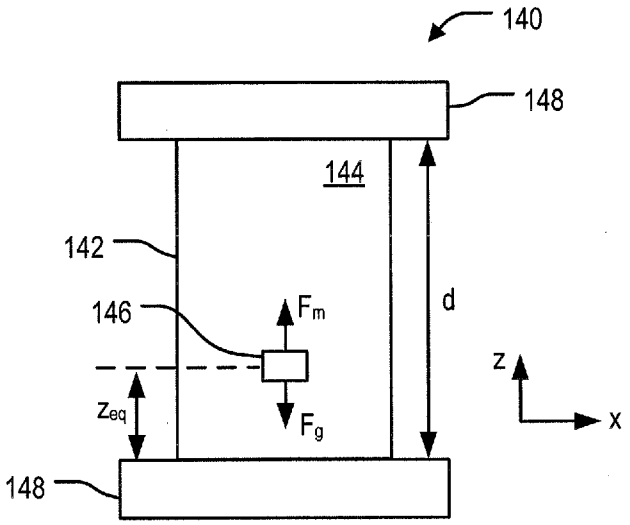


FIG. 6K

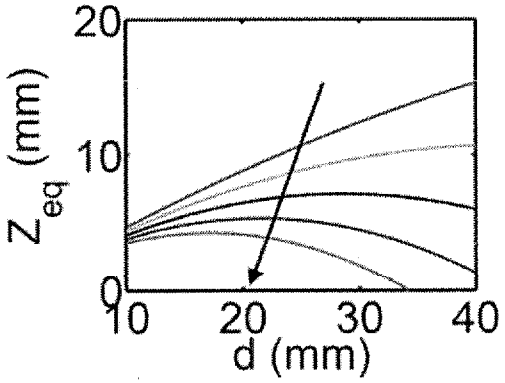


FIG. 6L

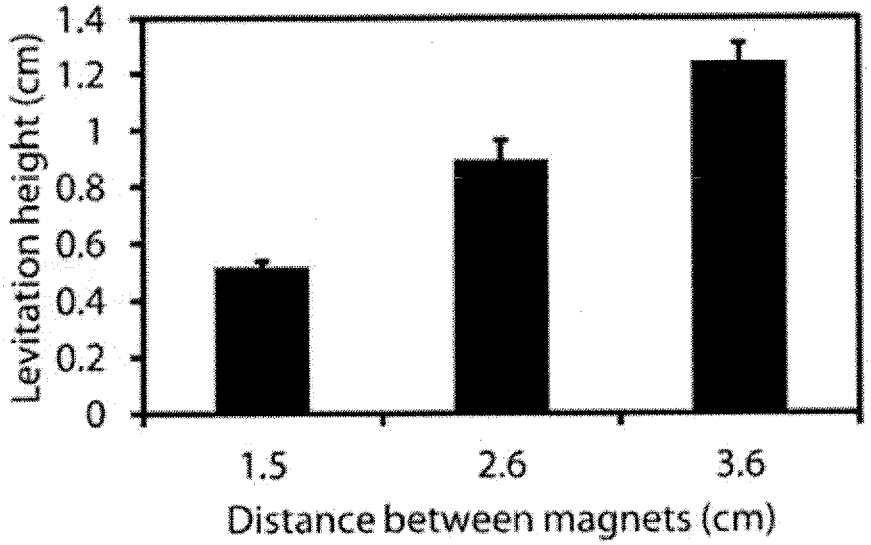

Levitation height (cm)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1.5
2.6
3.6
Distance between magnets (cm)

FIG. 6M

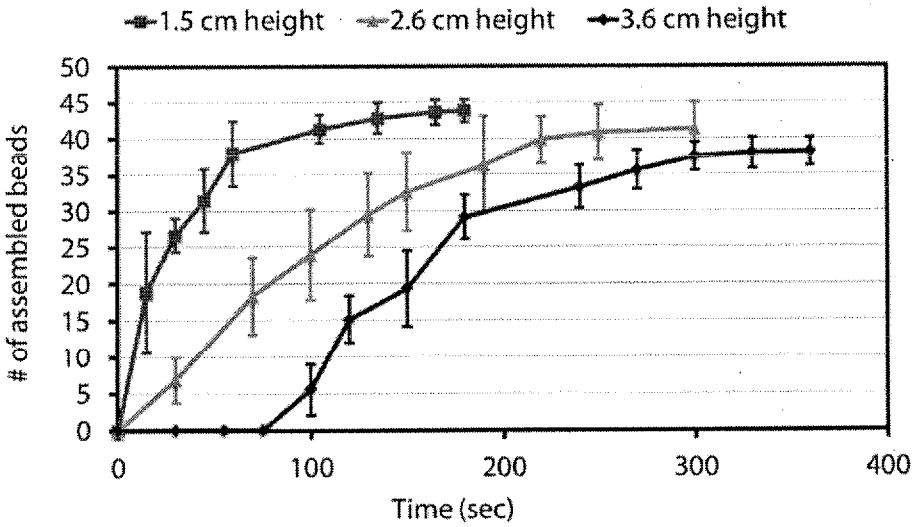

1.5 cm height
2.6 cm height
3.6 cm height
# of assembled beads
50
45
40
35
30
25
20
15
10
5
0
0
100
200
300
400
Time (sec)

FIG. 6N