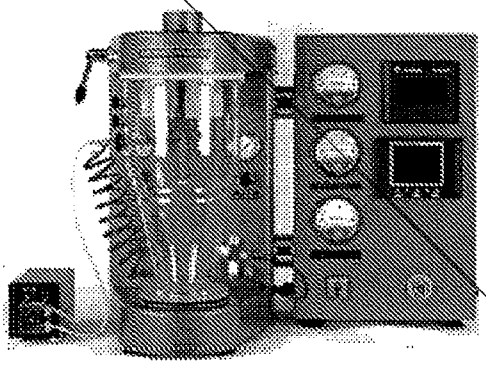
FIGURE 1



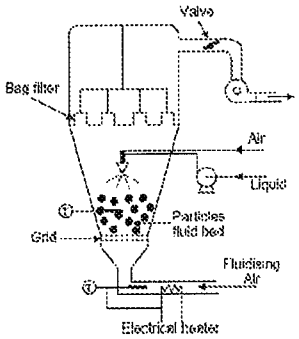

Valve
Bag filter
Air
Liquid
Particles
fluid bed
Grid
Fluidising
Air
Electrical heater

FIGURE 2

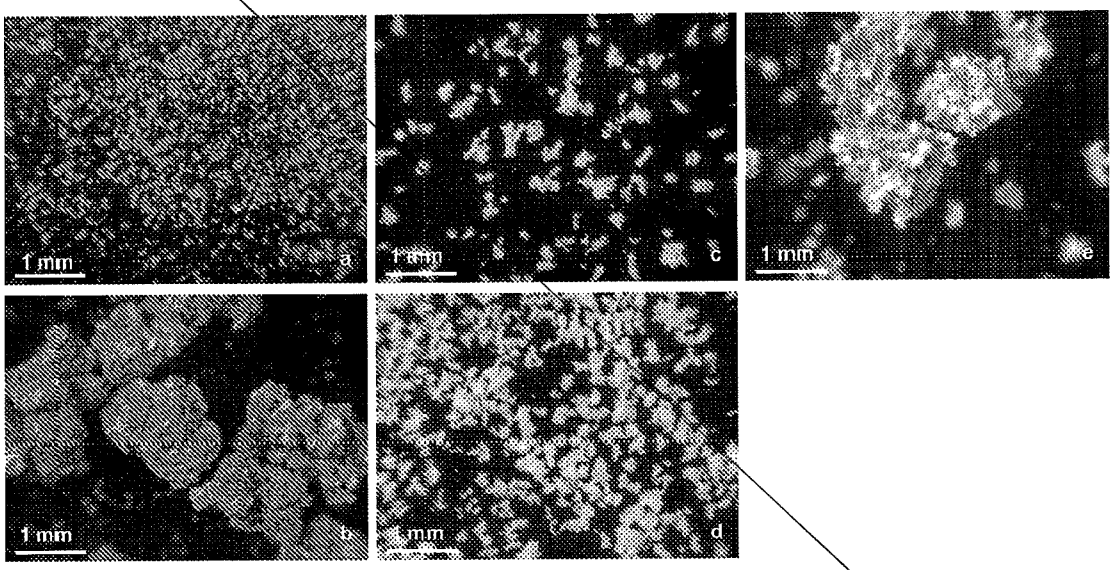


FIGURE 3

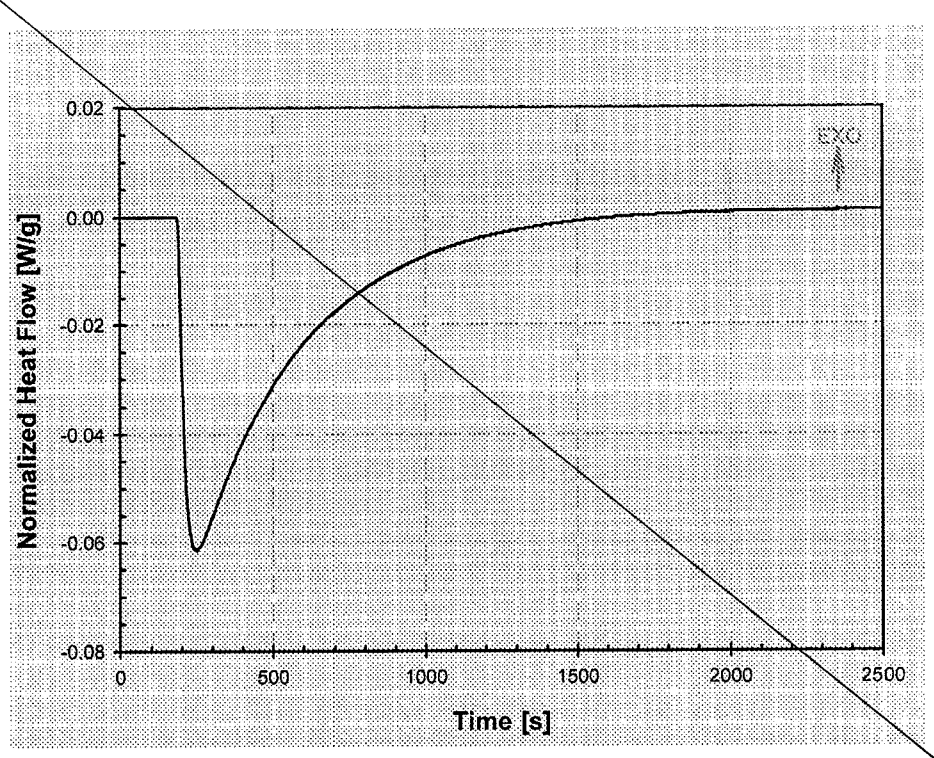

0.02
0.00
-0.02
-0.04
-0.06
-0.08
Normalized Heat Flow [W/g]
EXO
0
500
1000
1500
2000
2500
Time [s]

FIGURE 4

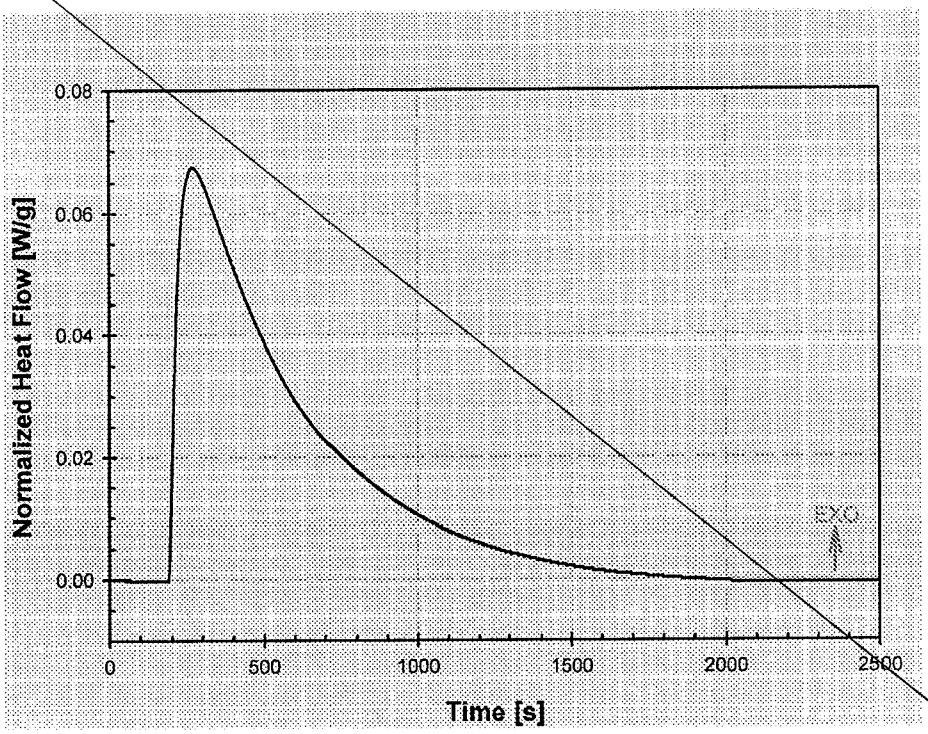

0.08
0.06
0.04
0.02
0.00
Normalized Heat Flow [W/g]
0
500
1000
1500
2000
2500
Time [s]
EXO

FIGURE 5

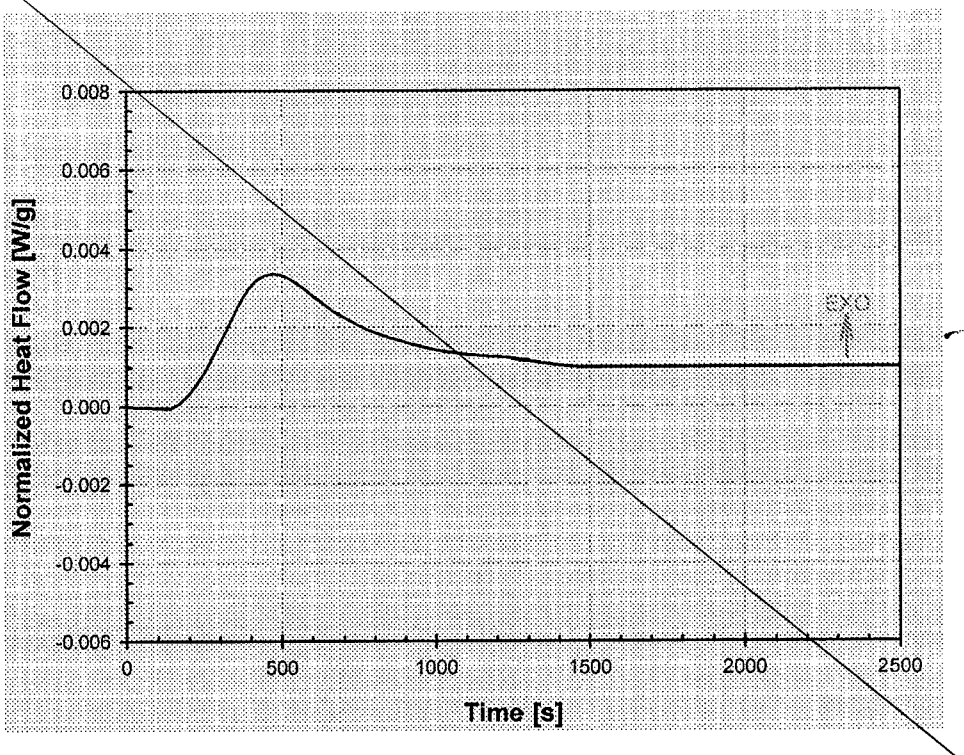

0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
Normalized Heat Flow [W/g]
EXO
0
500
1000
1500
2000
2500
Time [s]

FIGURE 6

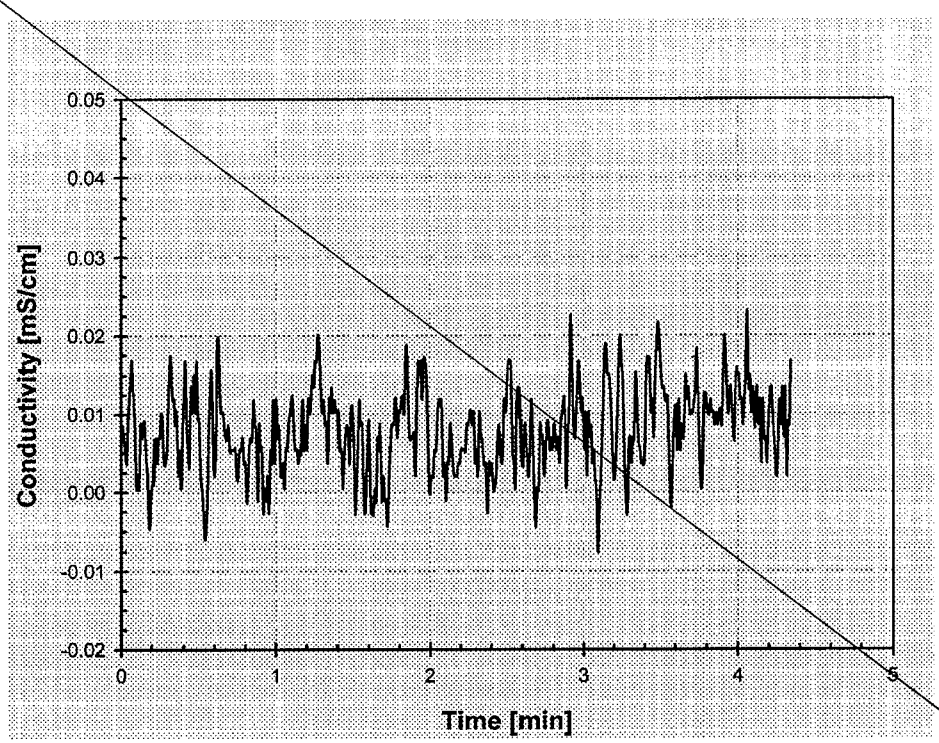

0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
Conductivity [mS/cm]
0
1
2
3
4
5
Time [min]

FIGURE 7

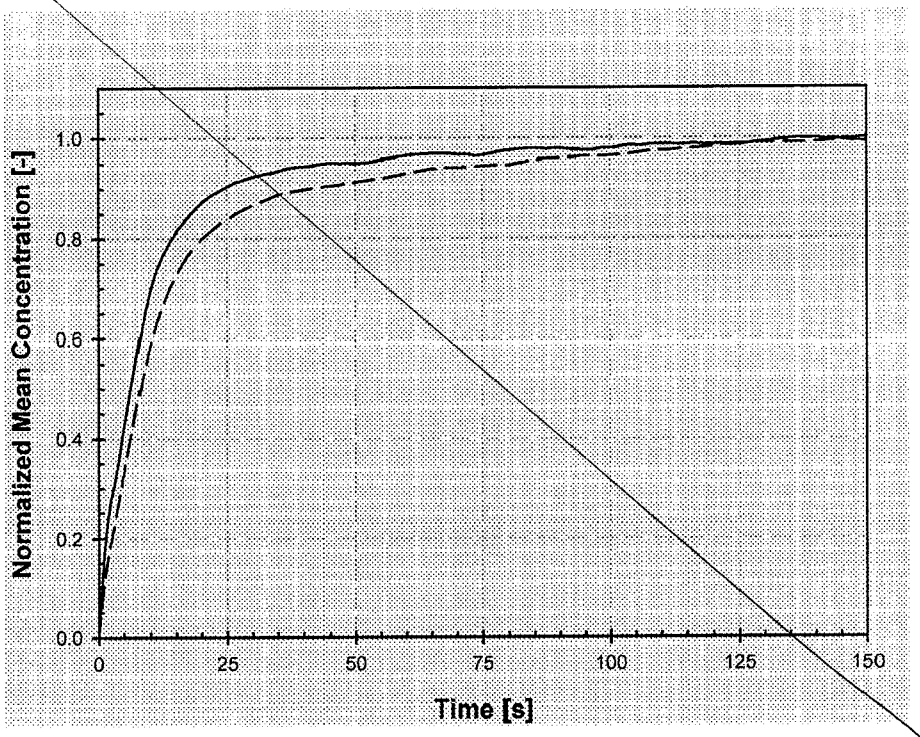

Normalized Mean Concentration [-]
1.0
0.8
0.6
0.4
0.2
0.0
0
25
50
75
100
125
150
Time [s]

FIGURE 8

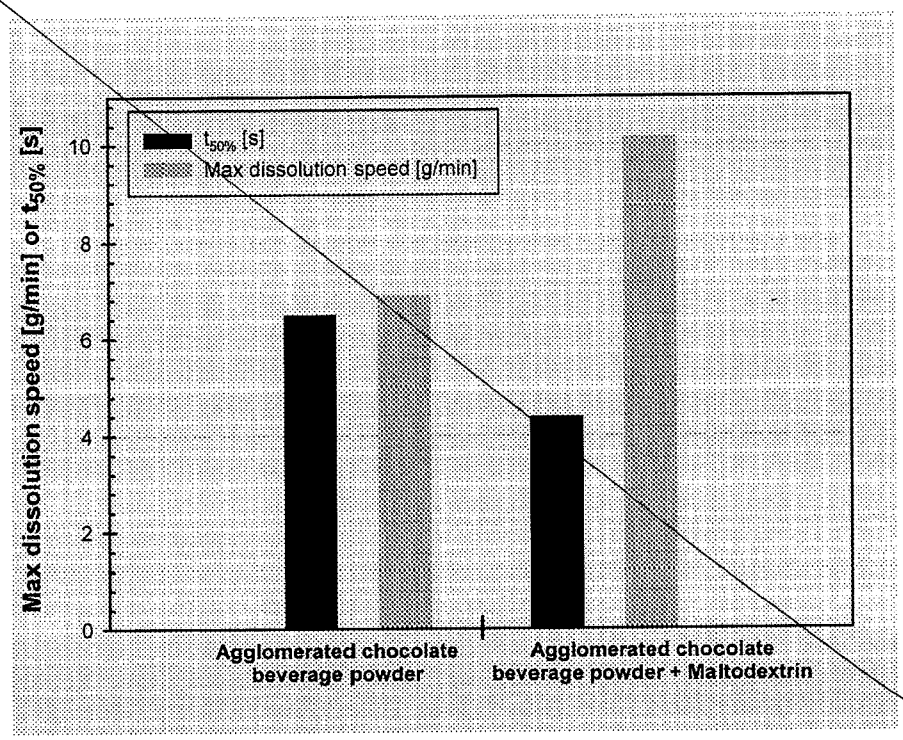

$t_{50\%}$ [s]
Max dissolution speed [g/min]
Max dissolution speed [g/min] or $t_{50\%}$ [s]
0
2
4
6
8
10
Agglomerated chocolate beverage powder
Agglomerated chocolate beverage powder + Maltodextrin

FIGURE 9

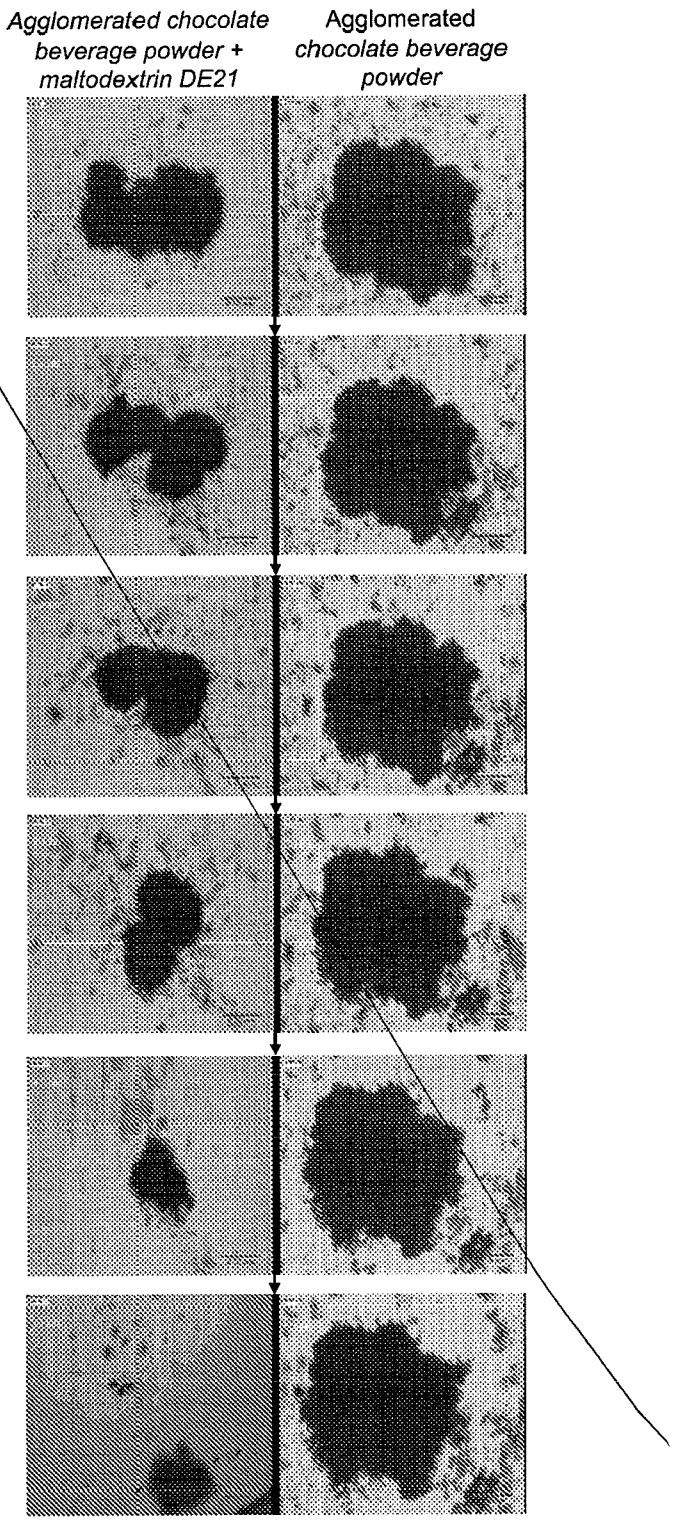
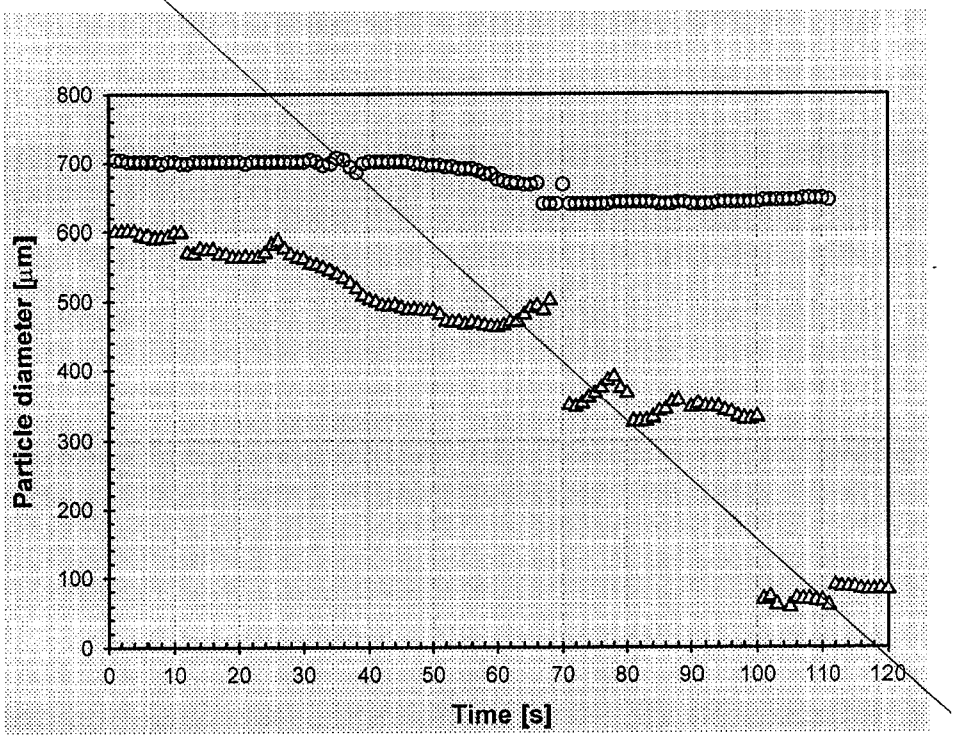

Agglomerated chocolate beverage powder + maltodextrin DE21
Agglomerated *chocolate beverage powder*

FIGURE 10


800
700
600
500
400
300
200
100
0
Particle diameter [µm]
0
10
20
30
40
50
60
70
80
90
100
110
120
Time [s]

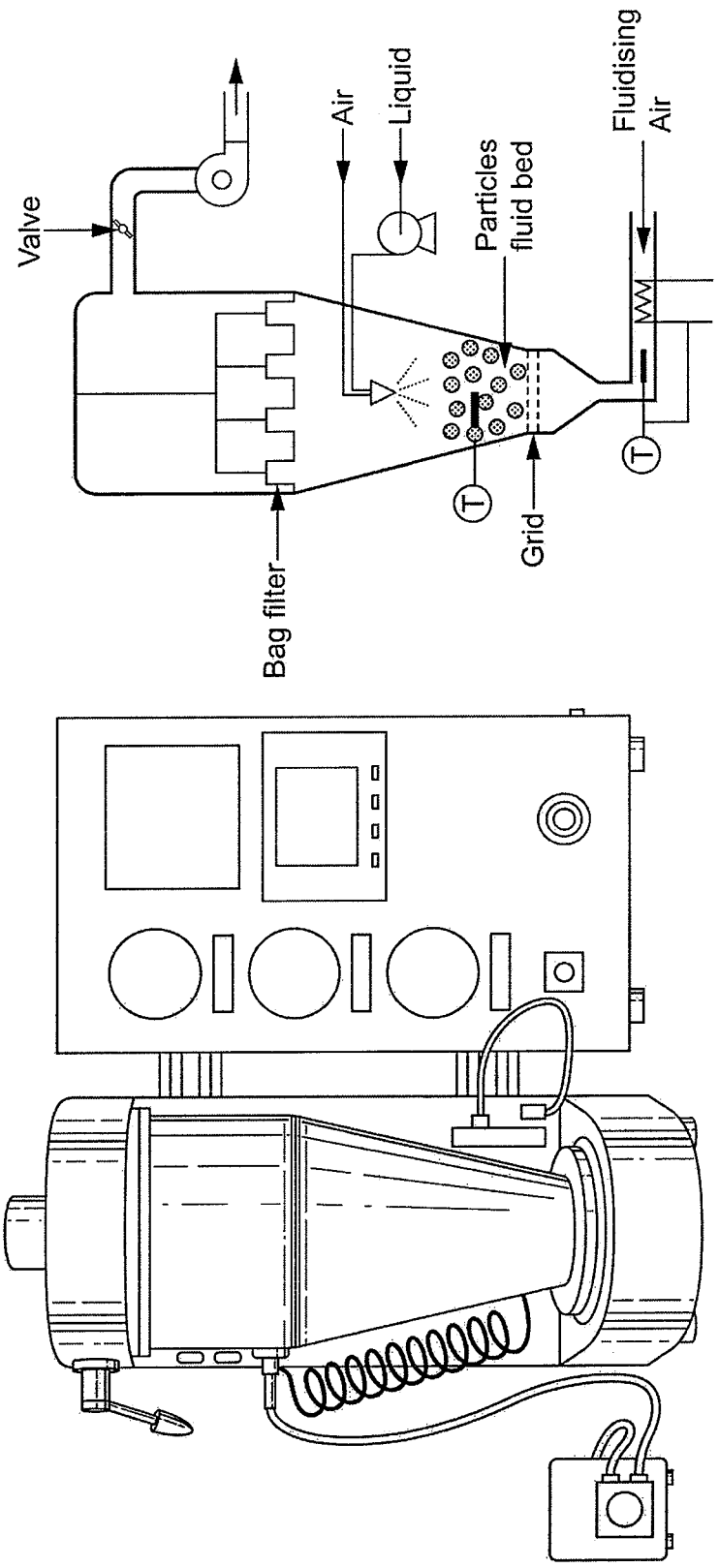

Valve
Air
Liquid
Particles
fluid bed
Fluidising
Air
T
T
Grid
Bag filter

FIG. 1

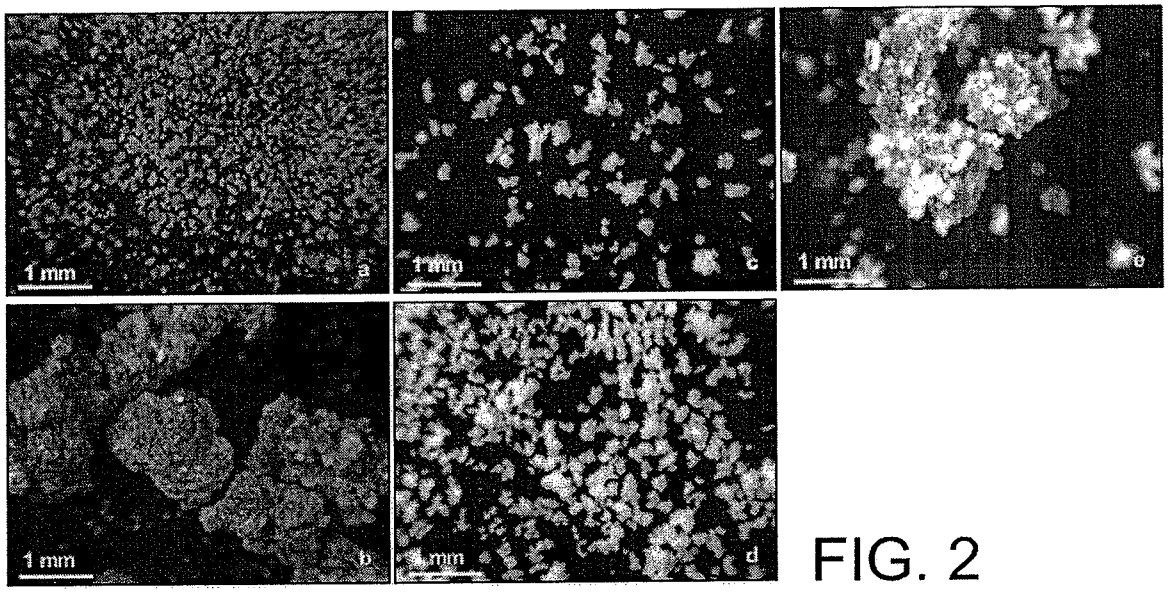

1 mm
a
1 mm
c
1 mm
e
1 mm
b
1 mm
d

FIG. 2

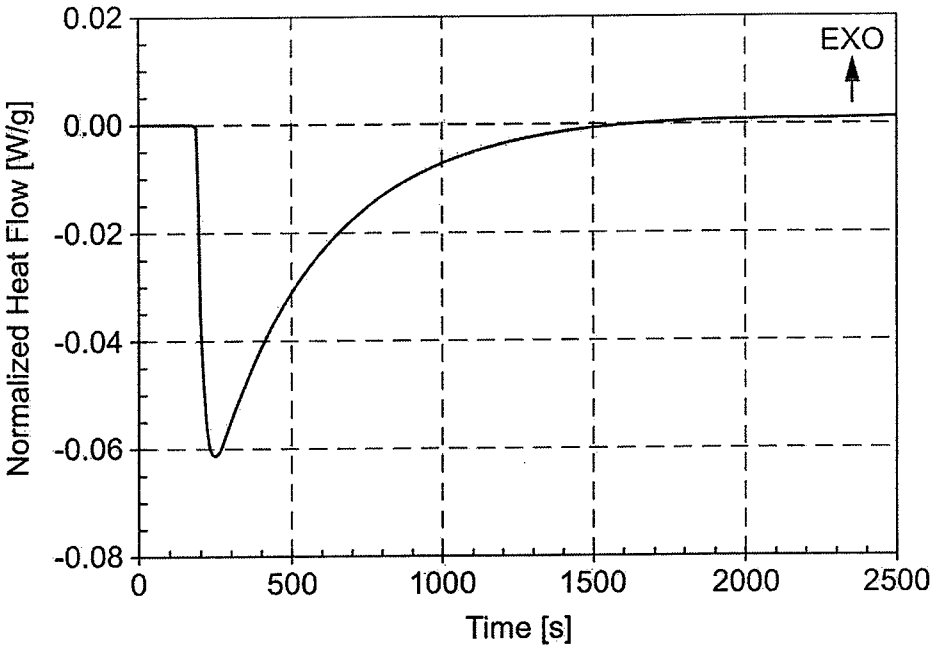

0.02
0.00
-0.02
-0.04
-0.06
-0.08
Normalized Heat Flow [W/g]
EXO
0
500
1000
1500
2000
2500
Time [s]

FIG. 3

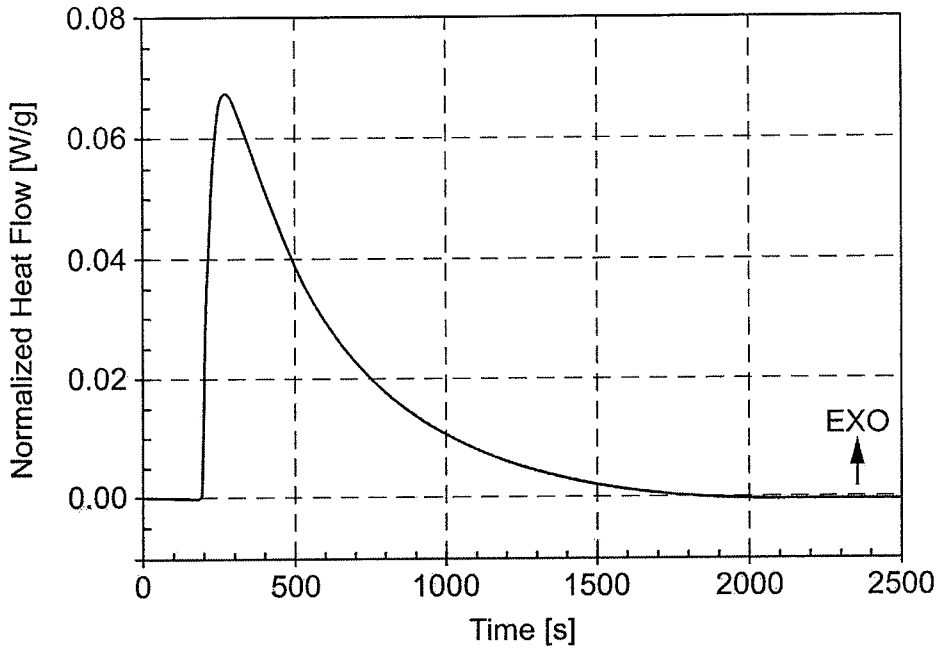

0.08
0.06
0.04
0.02
0.00
Normalized Heat Flow [W/g]
EXO
0
500
1000
1500
2000
2500
Time [s]

FIG. 4

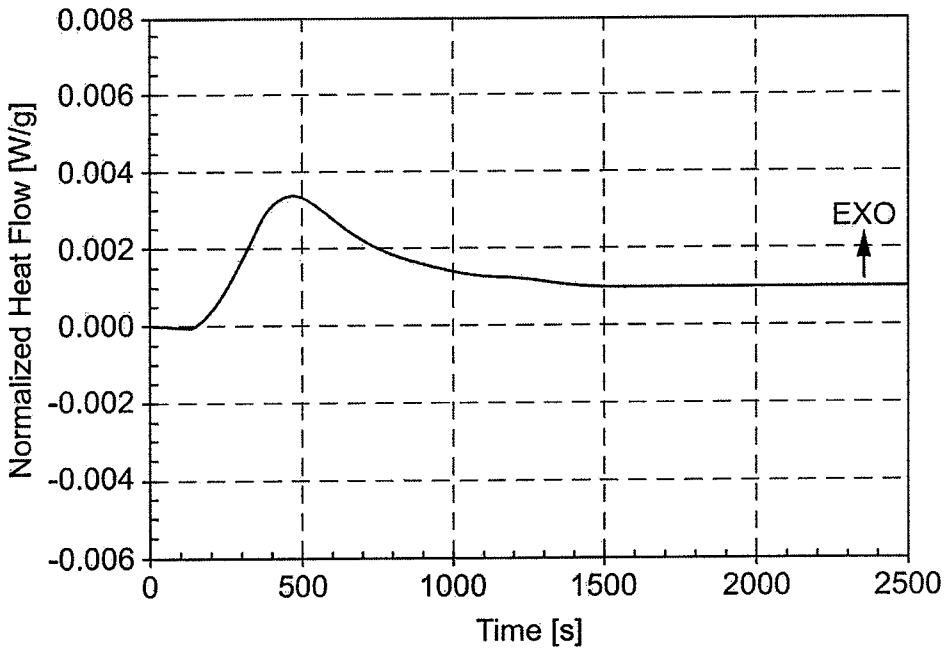

0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
Normalized Heat Flow [W/g]
EXO
0
500
1000
1500
2000
2500
Time [s]

FIG. 5

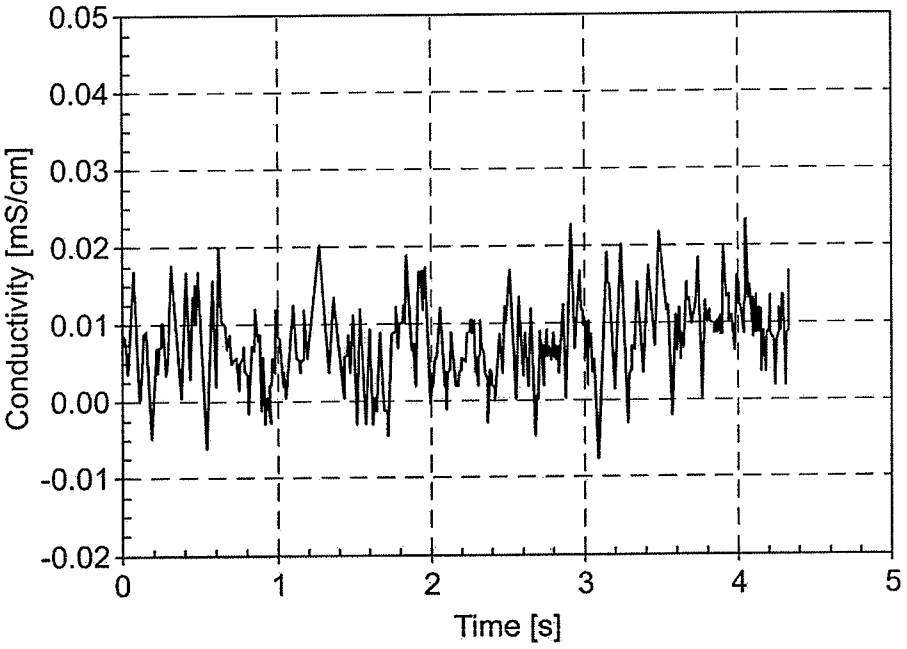

0.05
0.04
0.03
0.02
0.01
0.00
-0.01
-0.02
Conductivity [mS/cm]
0
1
2
3
4
5
Time [s]

FIG. 6

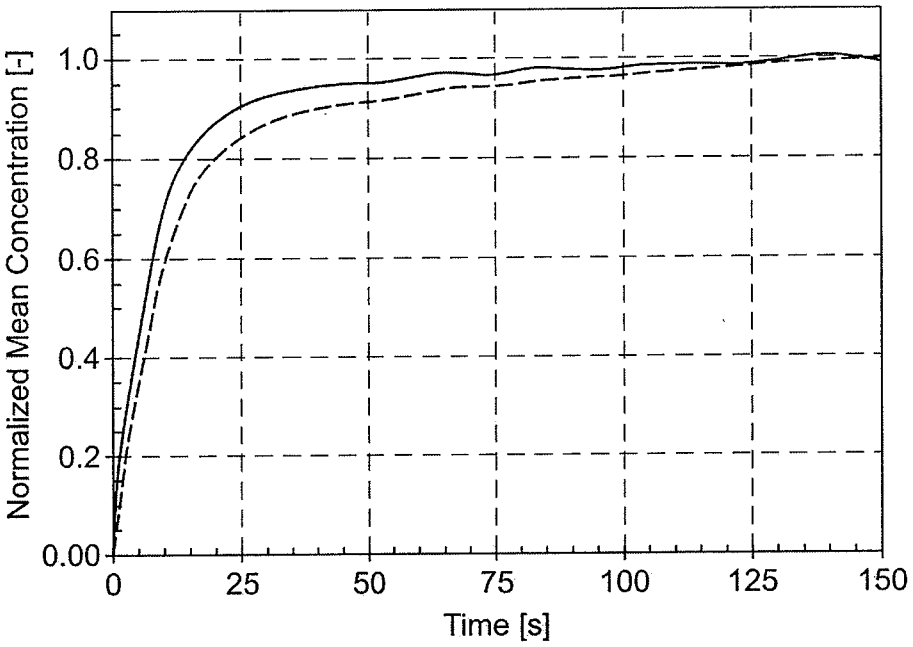

Normalized Mean Concentration [-]
1.0
0.8
0.6
0.4
0.2
0.00
0
25
50
75
100
125
150
Time [s]

FIG. 7

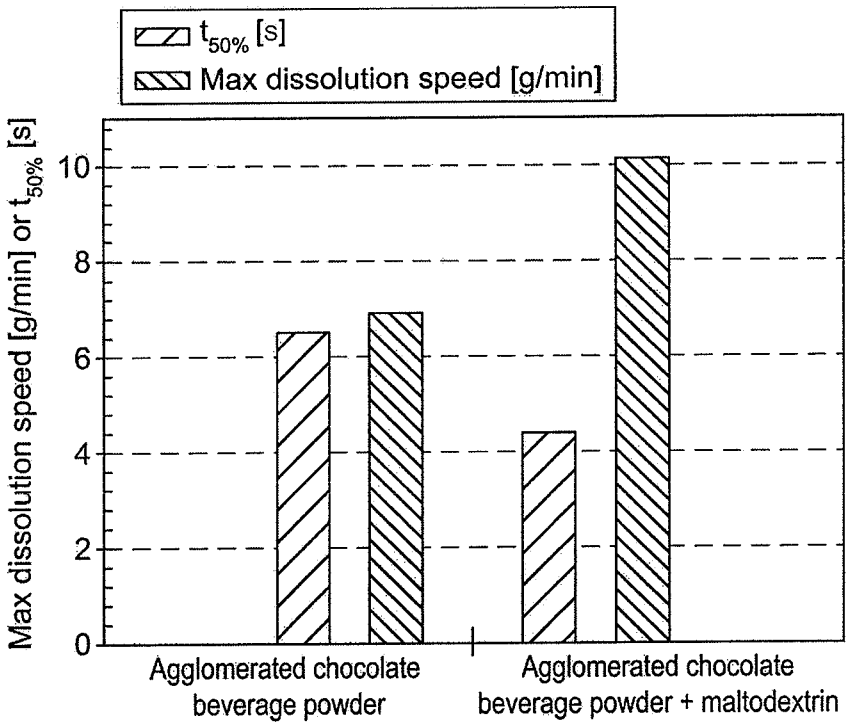

$t_{50\%}$ [s]
Max dissolution speed [g/min]
Max dissolution speed [g/min] or $t_{50\%}$ [s]
10
8
6
4
2
0
Agglomerated chocolate beverage powder
Agglomerated chocolate beverage powder + maltodextrin

FIG. 8

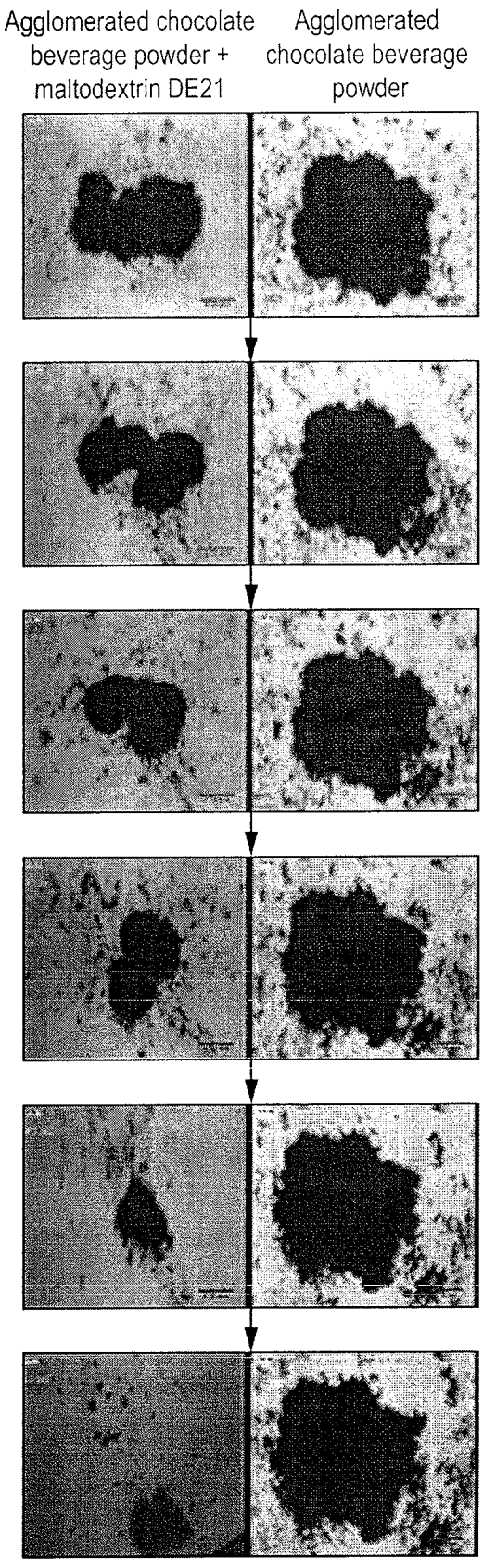

Agglomerated chocolate beverage powder + maltodextrin DE21
Agglomerated chocolate beverage powder

FIG. 9

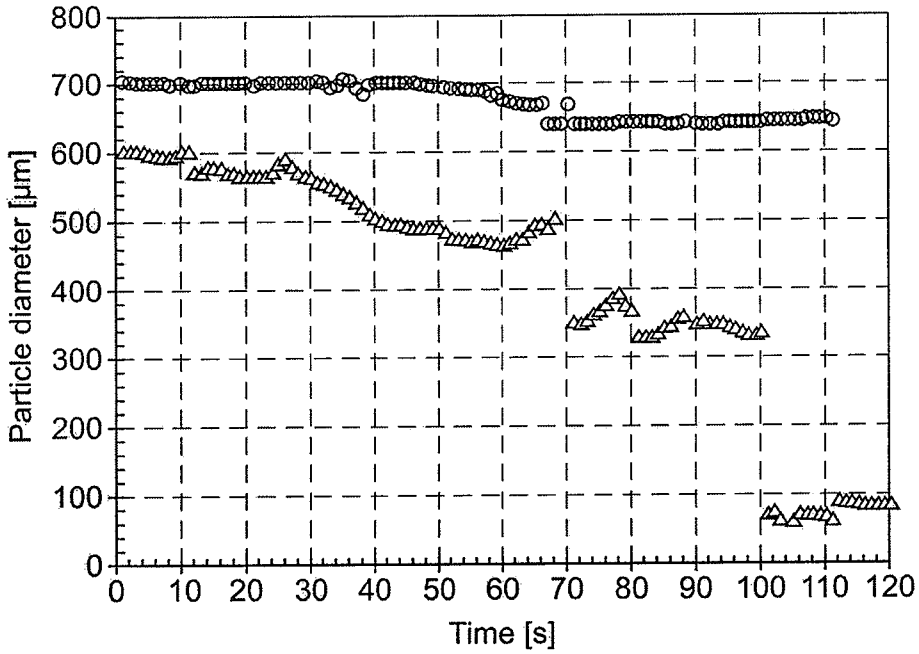

800
700
600
500
400
300
200
100
0
Particle diameter [µm]
0
10
20
30
40
50
60
70
80
90
100
110
120
Time [s]

FIG. 10