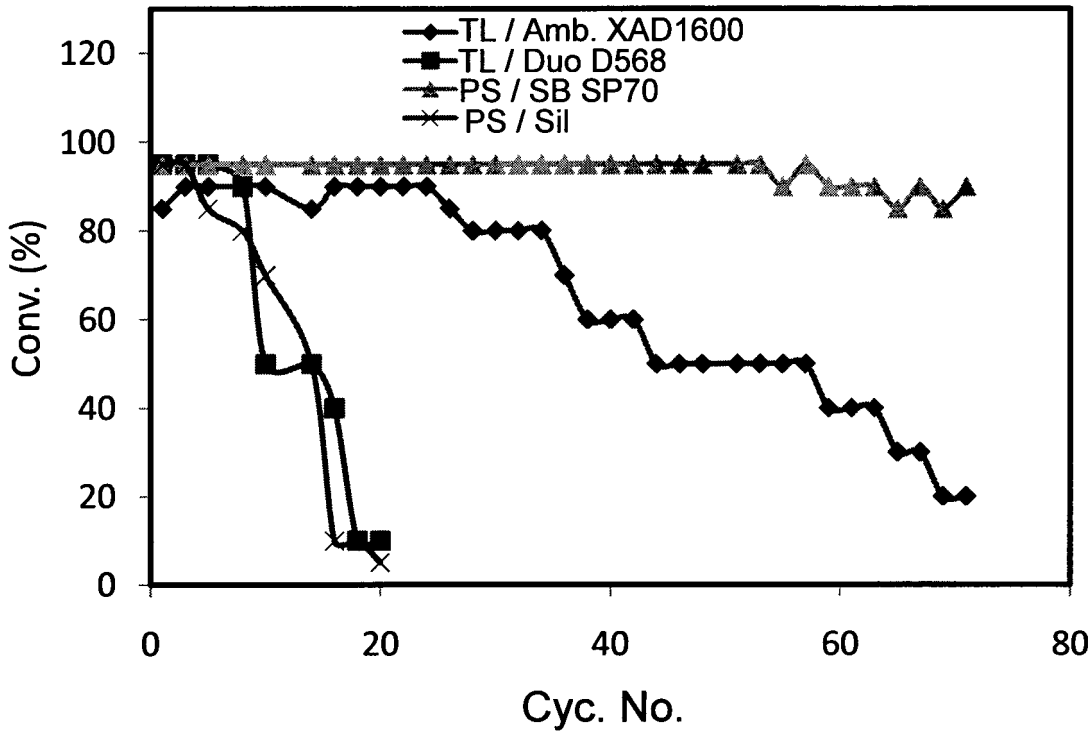


Figure 1

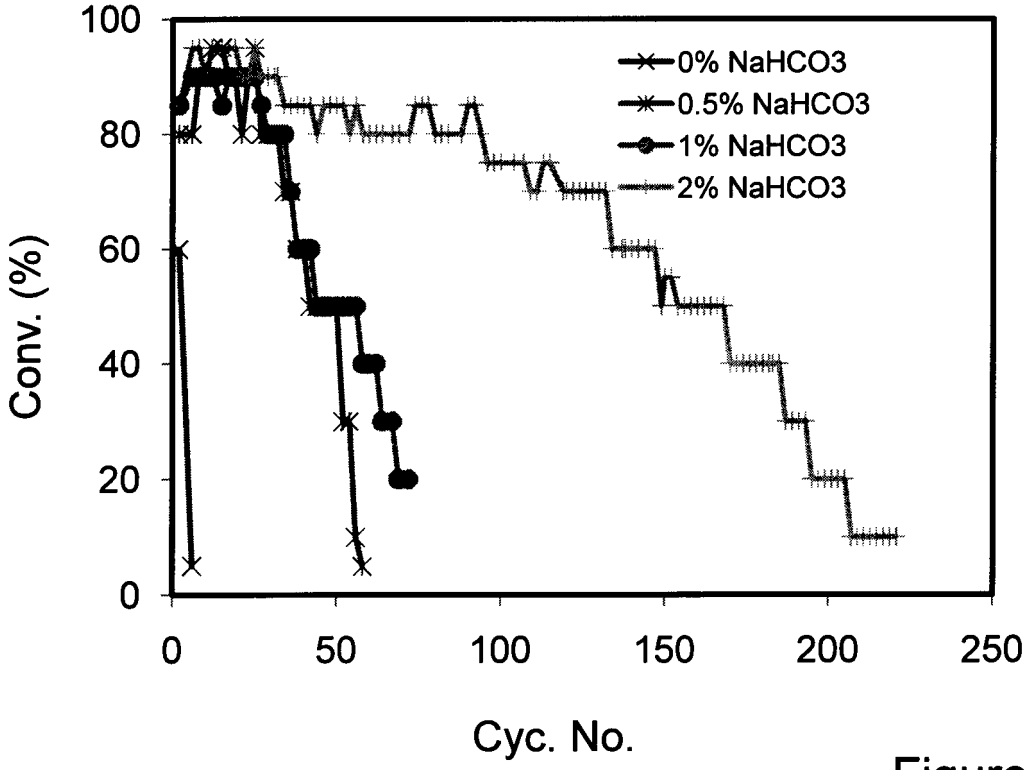


Figure 2

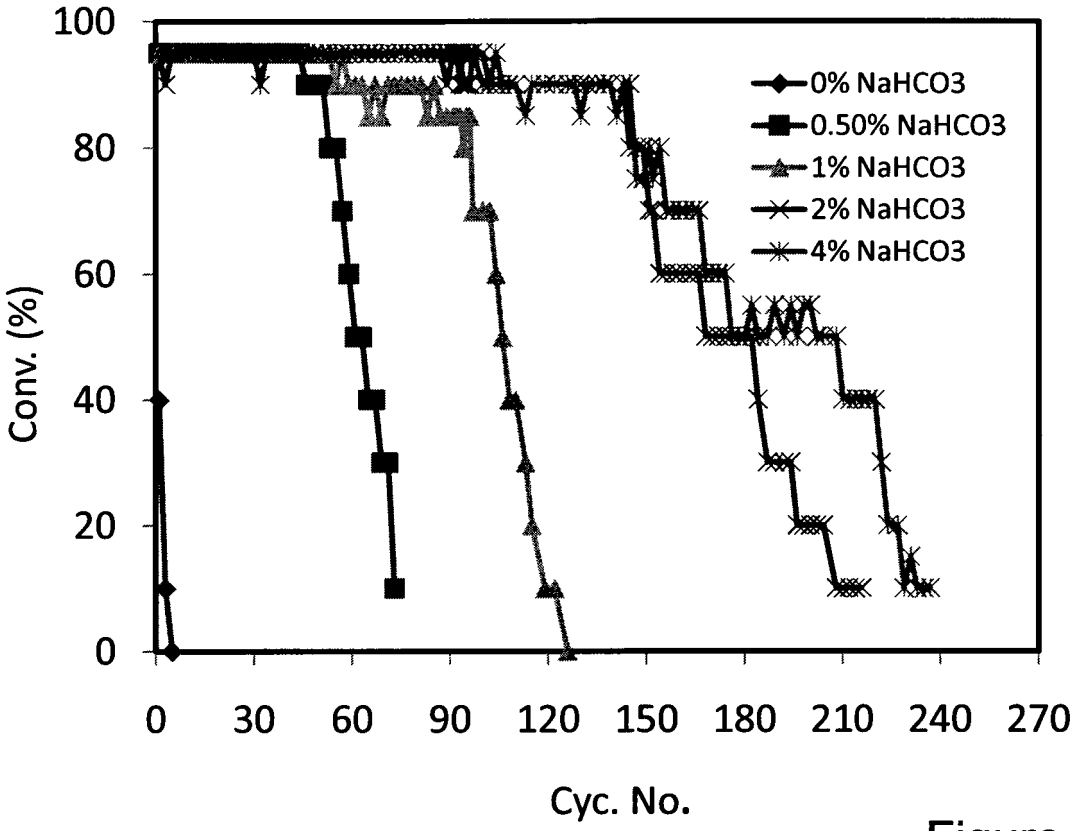


Figure 3

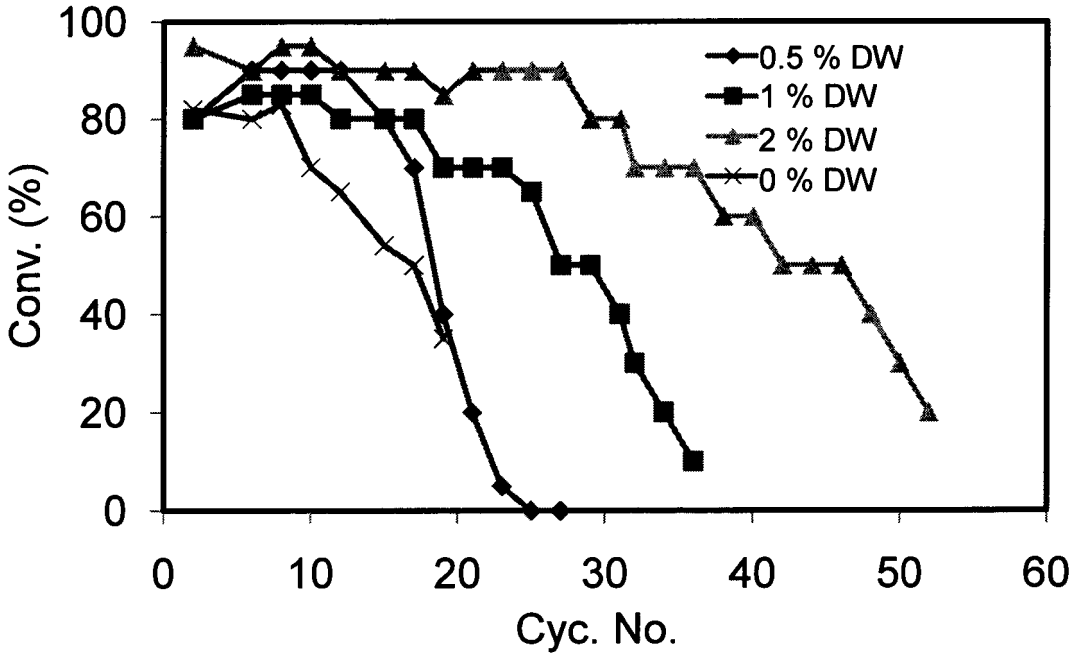


Figure 4

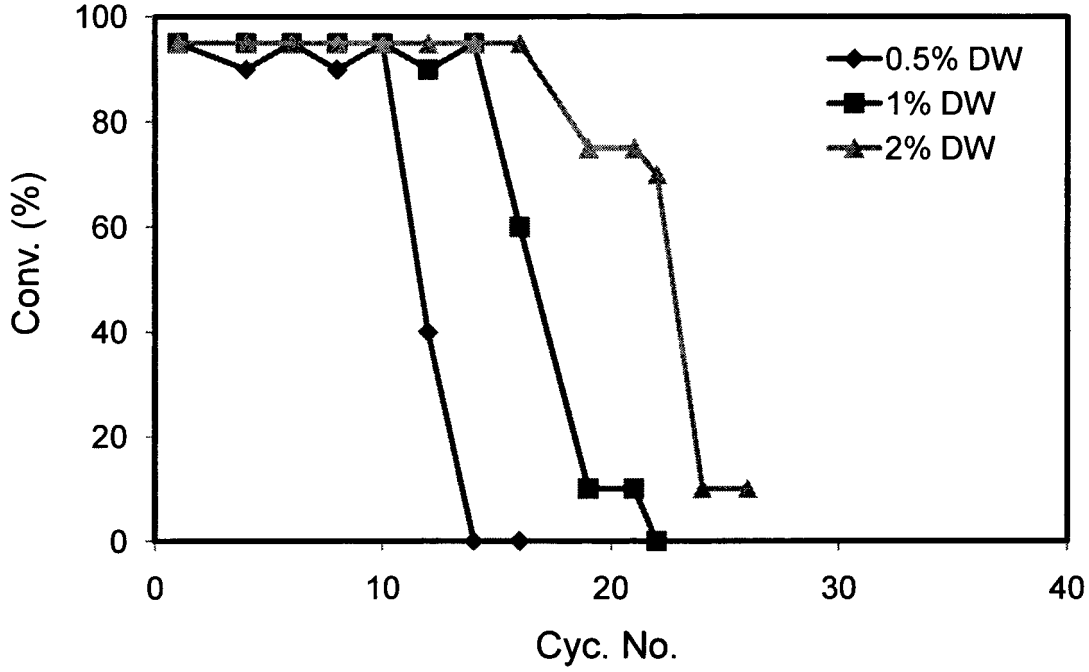


Figure 5

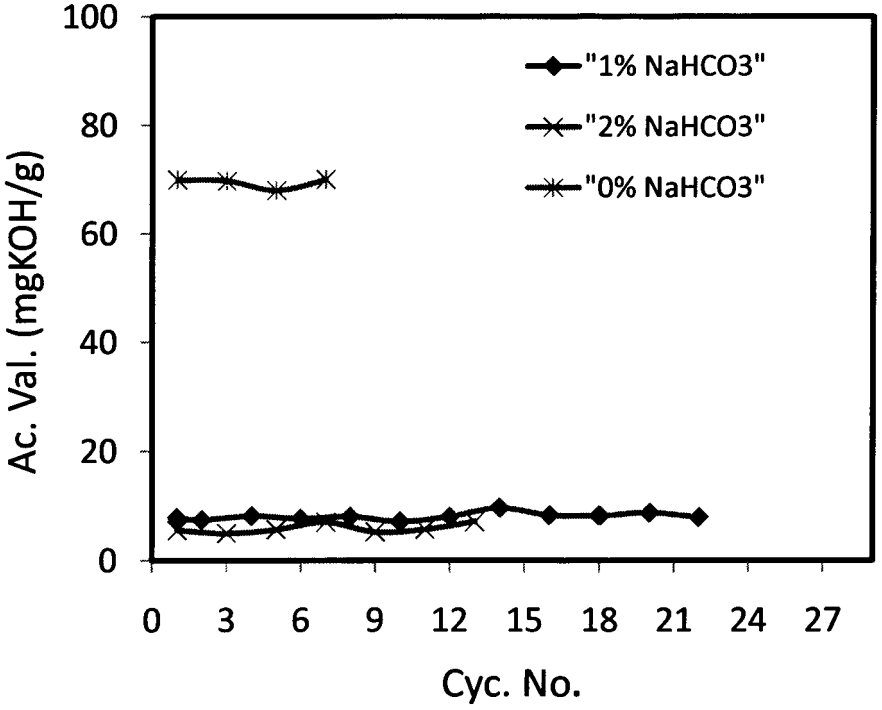


Figure 6

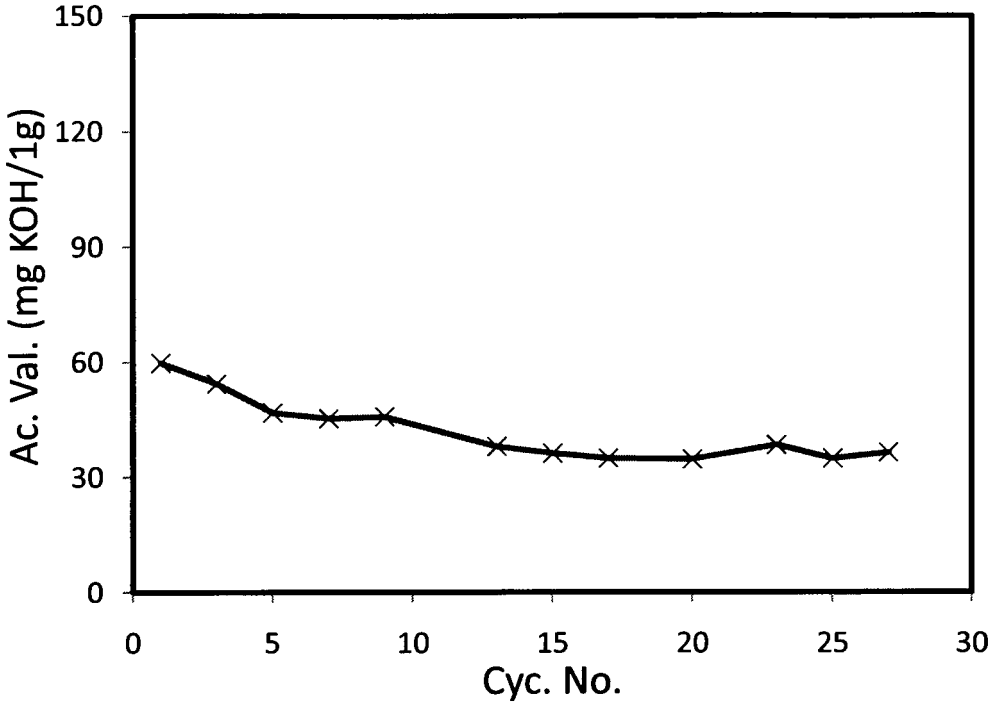


Figure 7

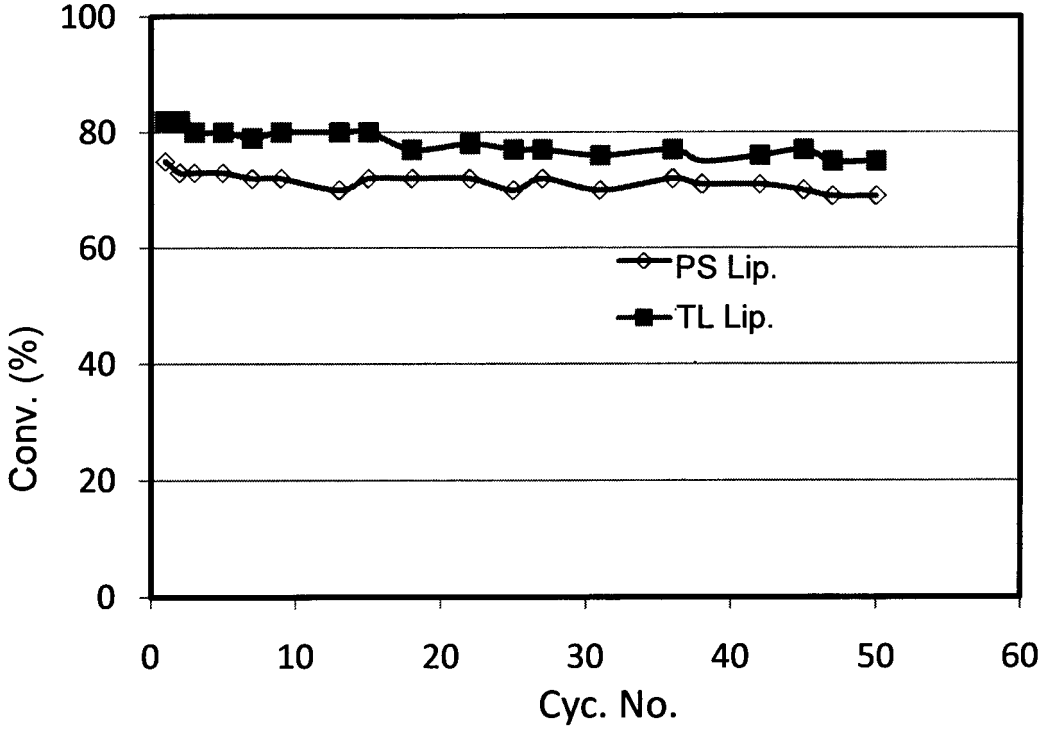


Figure 8

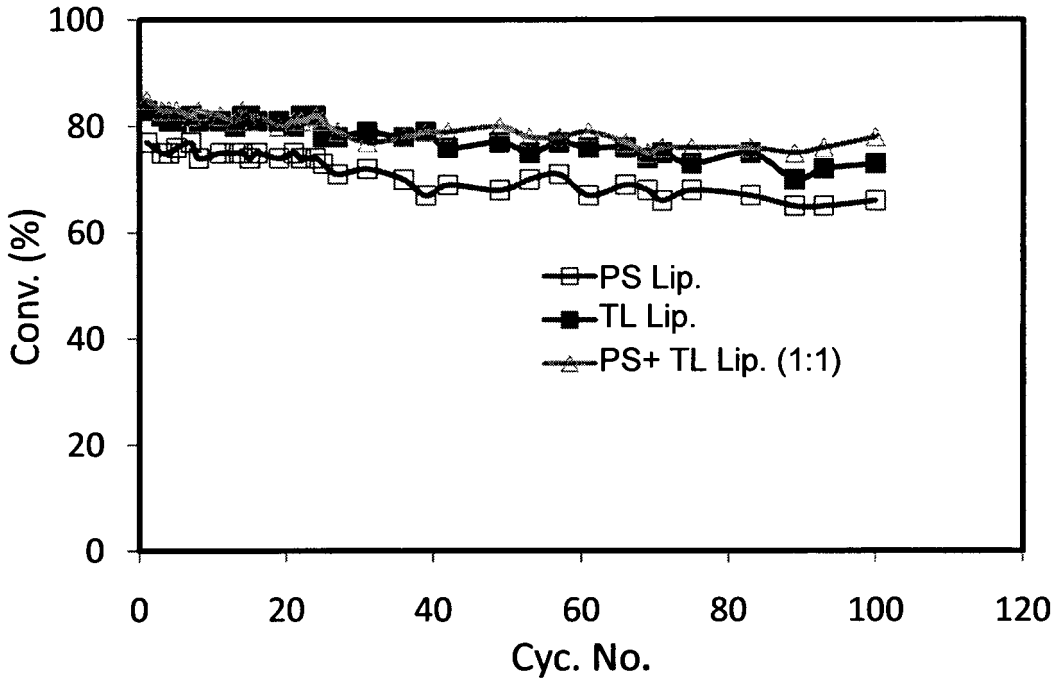


Figure 9

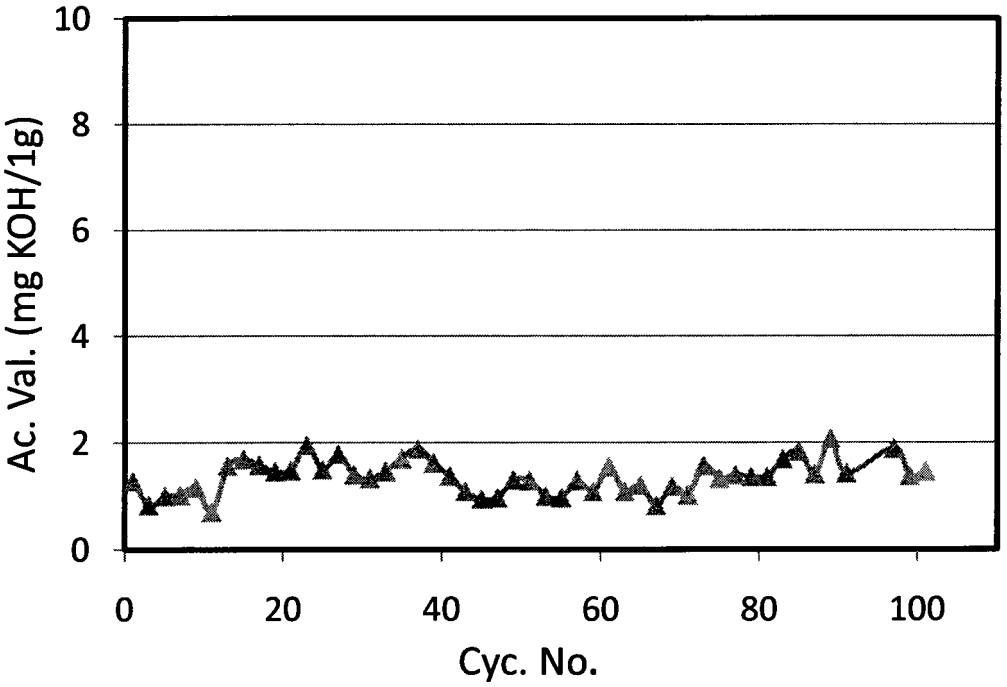


Figure 10

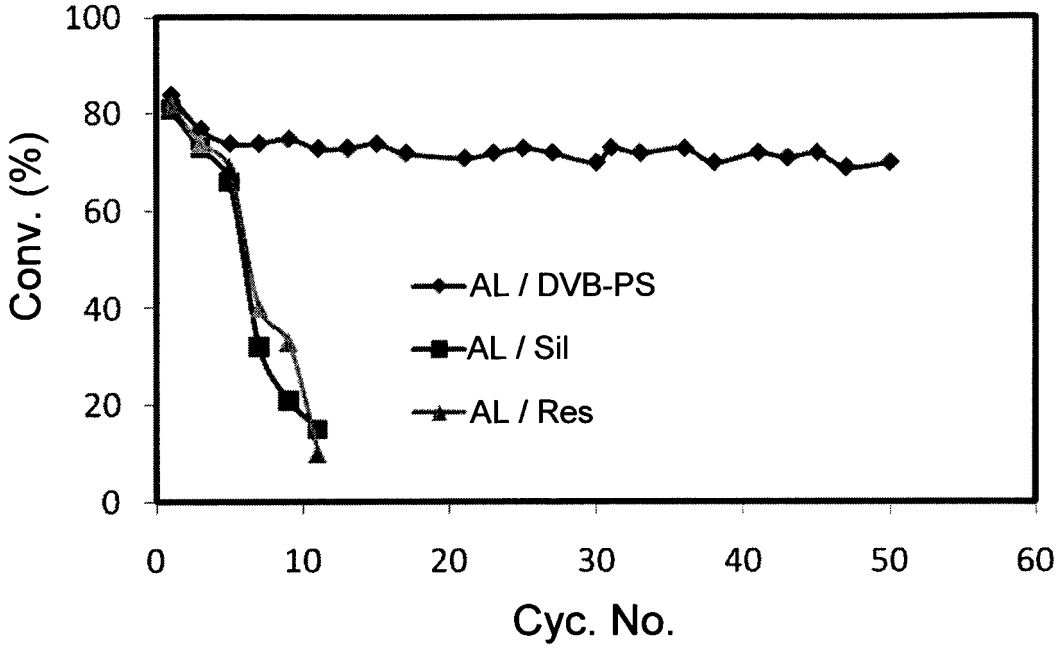

100
80
60
40
20
0
Conv. (%)
0
10
20
30
40
50
60
Cyc. No.
AL / DVB-PS
AL / Sil
AL / Res

Figure 11

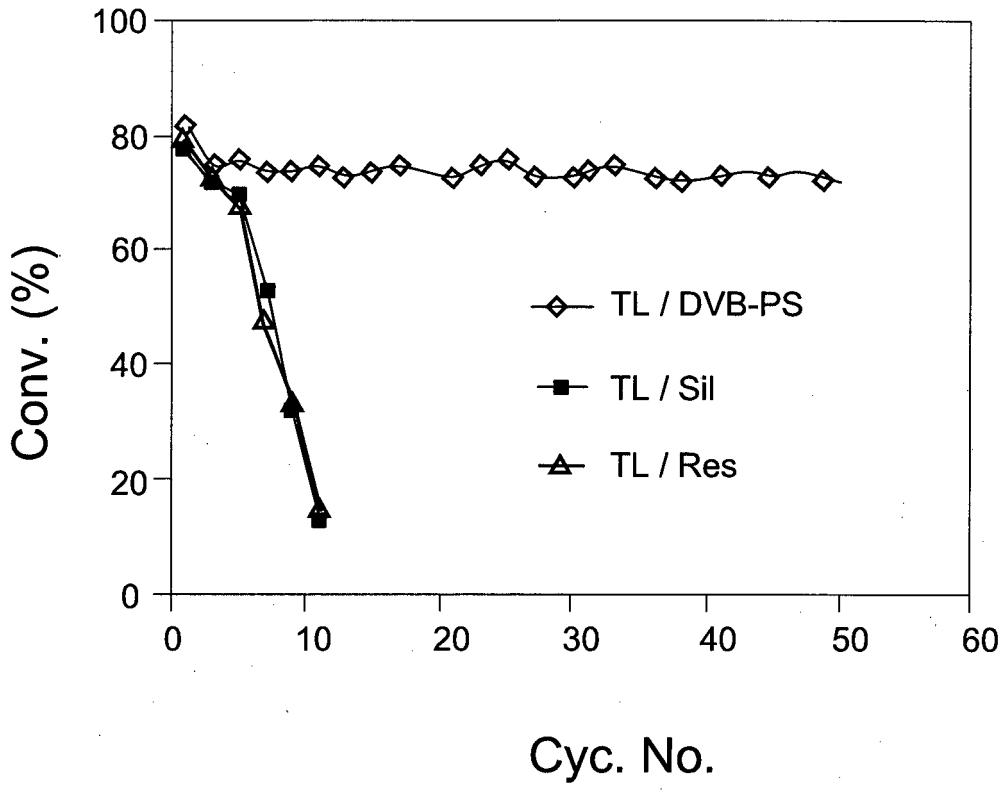

100
80
60
40
20
0
Conv. (%)
0
10
20
30
40
50
60
Cyc. No.
TL / DVB-PS
TL / Sil
TL / Res

Figure 12

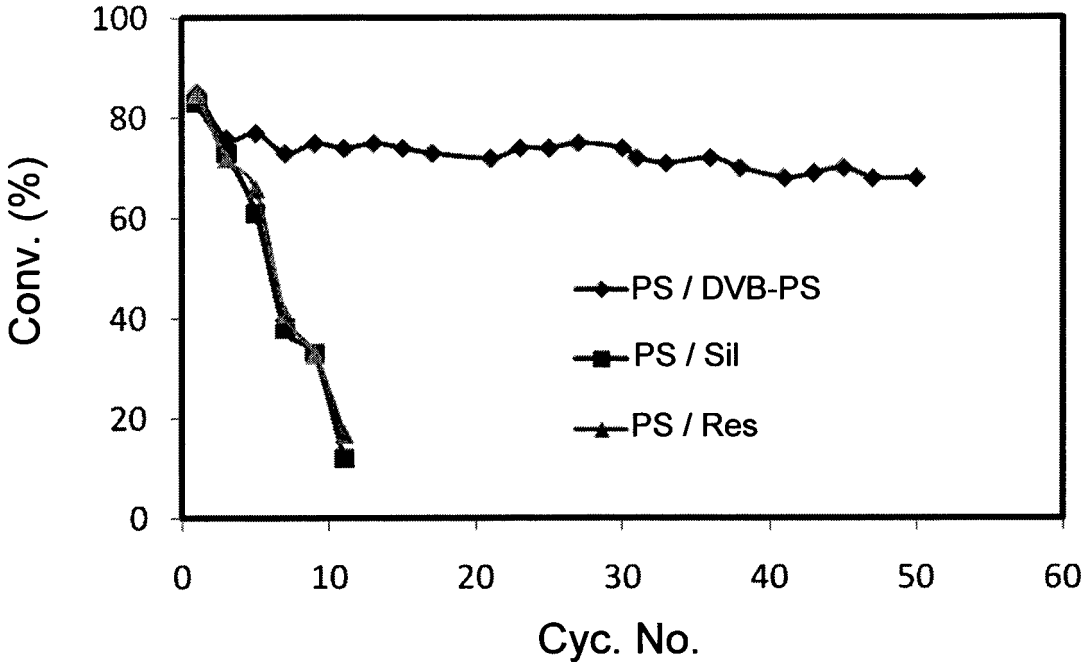

100
80
60
40
20
0
Conv. (%)
0
10
20
30
40
50
60
Cyc. No.
PS / DVB-PS
PS / Sil
PS / Res

Figure 13

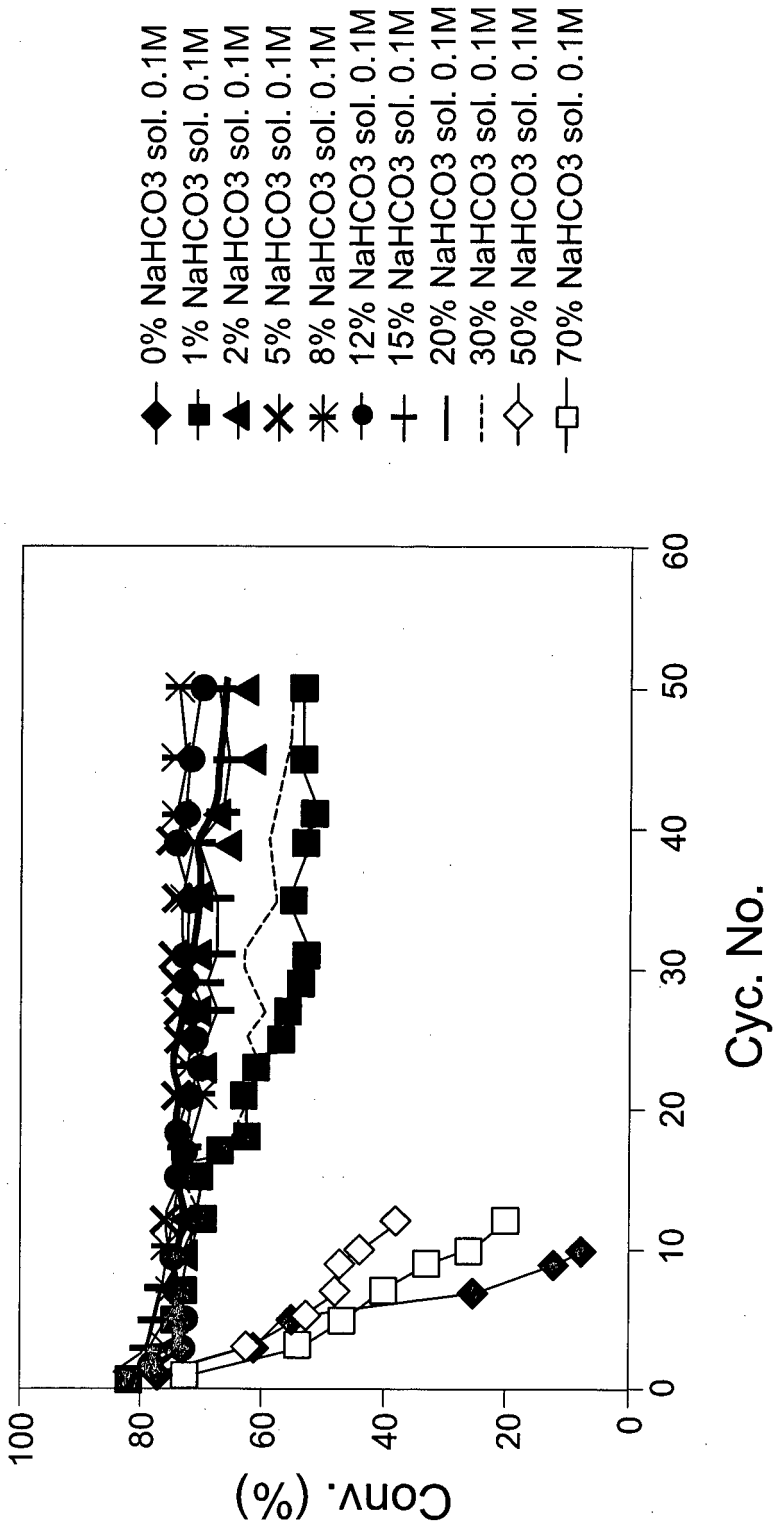

0% NaHCO3 sol. 0.1M
1% NaHCO3 sol. 0.1M
2% NaHCO3 sol. 0.1M
5% NaHCO3 sol. 0.1M
8% NaHCO3 sol. 0.1M
12% NaHCO3 sol. 0.1M
15% NaHCO3 sol. 0.1M
20% NaHCO3 sol. 0.1M
30% NaHCO3 sol. 0.1M
50% NaHCO3 sol. 0.1M
70% NaHCO3 sol. 0.1M
Conv. (%)
100
80
60
40
20
0
0
10
20
30
40
50
60
Cyc. No.

Fig. 14

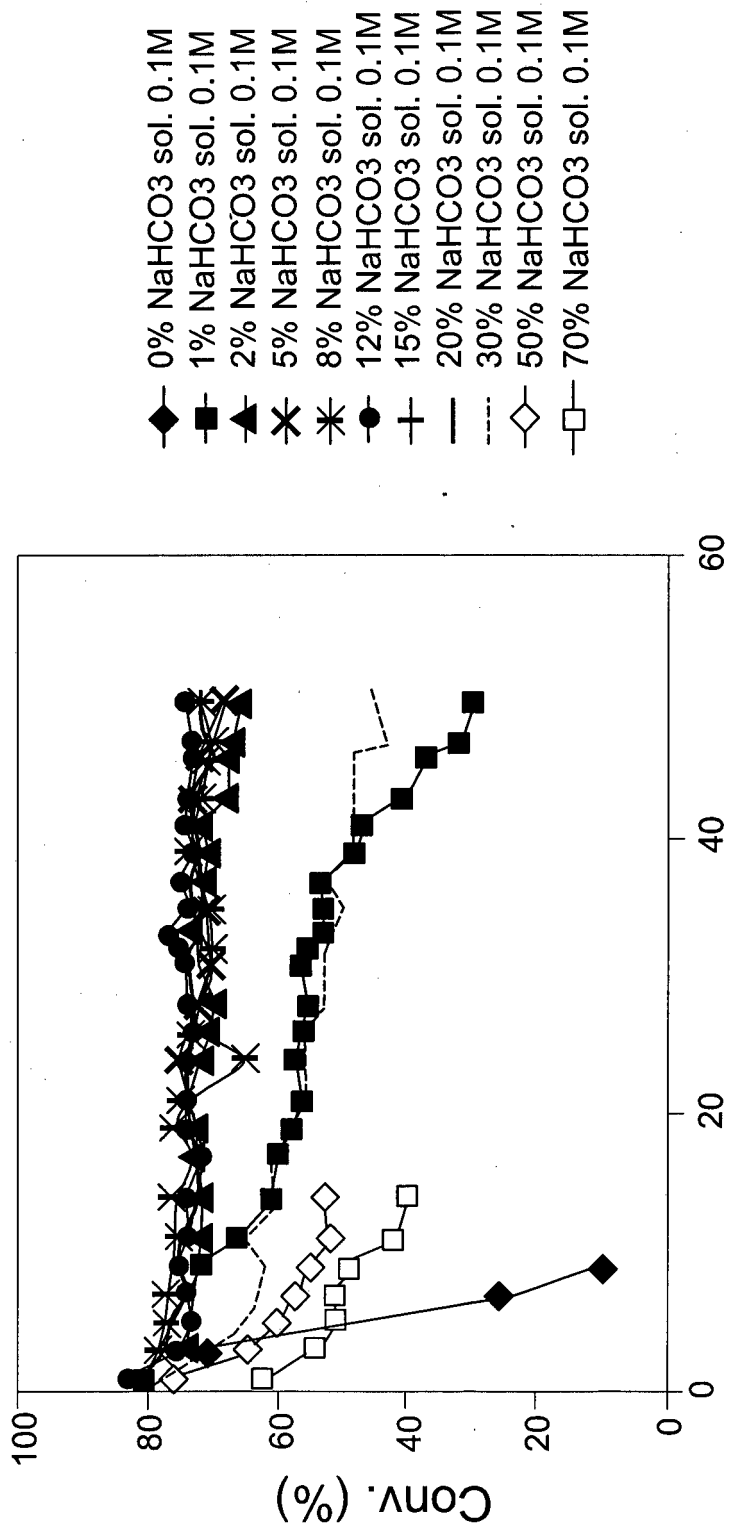

0% NaHCO3 sol. 0.1M
1% NaHCO3 sol. 0.1M
2% NaHCO3 sol. 0.1M
5% NaHCO3 sol. 0.1M
8% NaHCO3 sol. 0.1M
12% NaHCO3 sol. 0.1M
15% NaHCO3 sol. 0.1M
20% NaHCO3 sol. 0.1M
30% NaHCO3 sol. 0.1M
50% NaHCO3 sol. 0.1M
70% NaHCO3 sol. 0.1M
Conv. (%)
0
20
40
60
80
100
Cyc. No.
0
20
40
60

Fig. 15

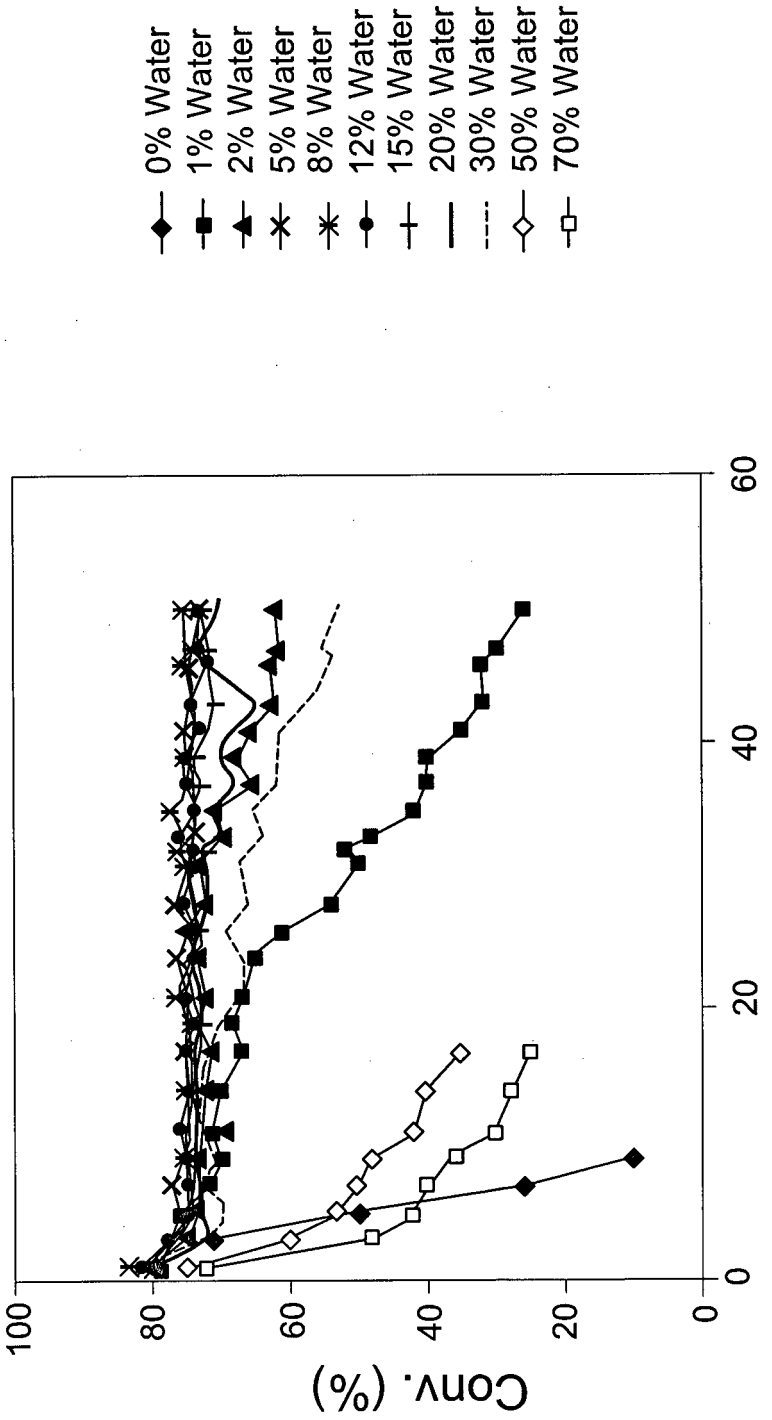

0% Water
1% Water
2% Water
5% Water
8% Water
12% Water
15% Water
20% Water
30% Water
50% Water
70% Water
Conv. (%)
100
80
60
40
20
0
0
20
40
60
Cyc. No.

Fig. 16

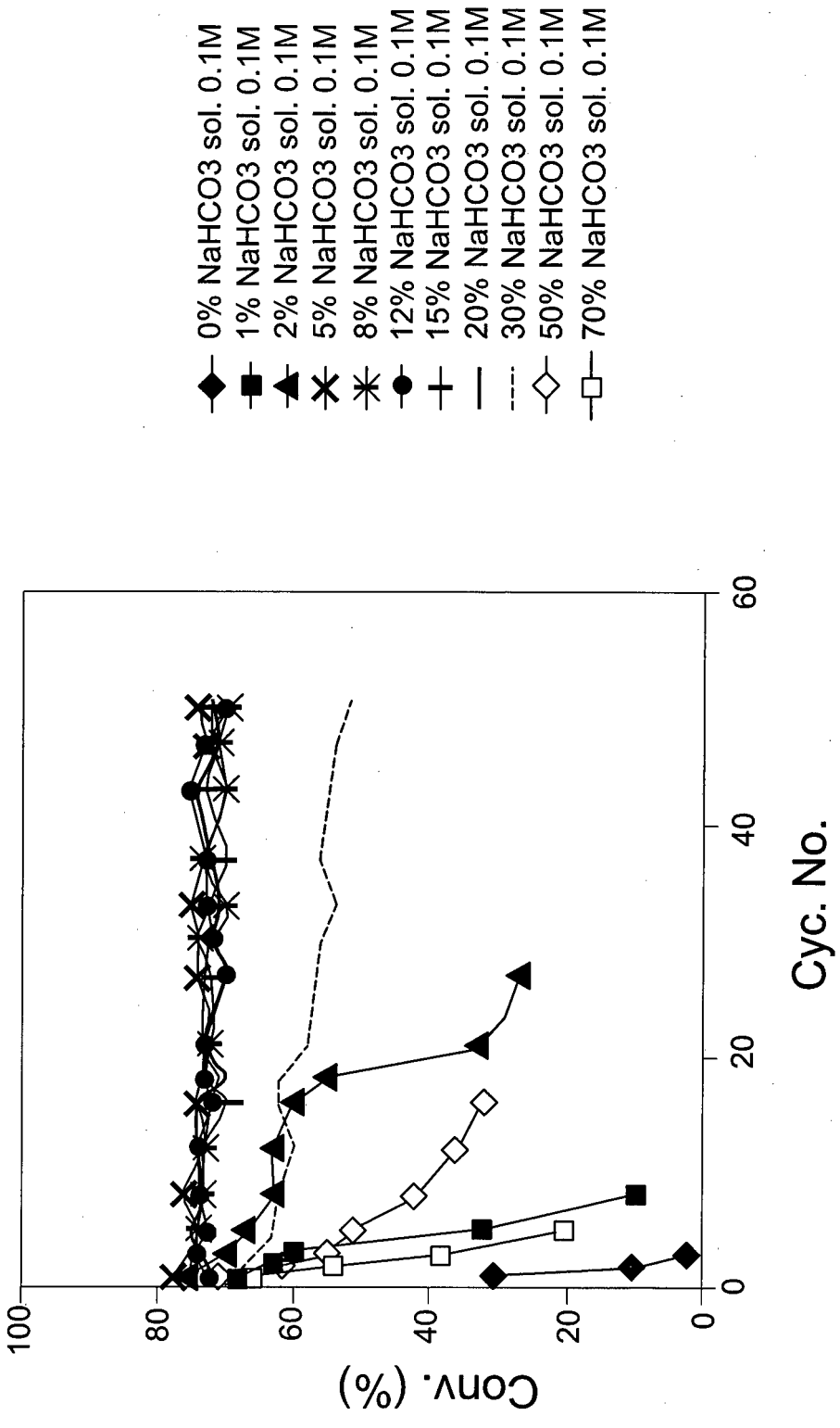

0% NaHCO3 sol. 0.1M
1% NaHCO3 sol. 0.1M
2% NaHCO3 sol. 0.1M
5% NaHCO3 sol. 0.1M
8% NaHCO3 sol. 0.1M
12% NaHCO3 sol. 0.1M
15% NaHCO3 sol. 0.1M
20% NaHCO3 sol. 0.1M
30% NaHCO3 sol. 0.1M
50% NaHCO3 sol. 0.1M
70% NaHCO3 sol. 0.1M
Conv. (%)
100
80
60
40
20
0
0
20
40
60
Cyc. No.

Fig. 17

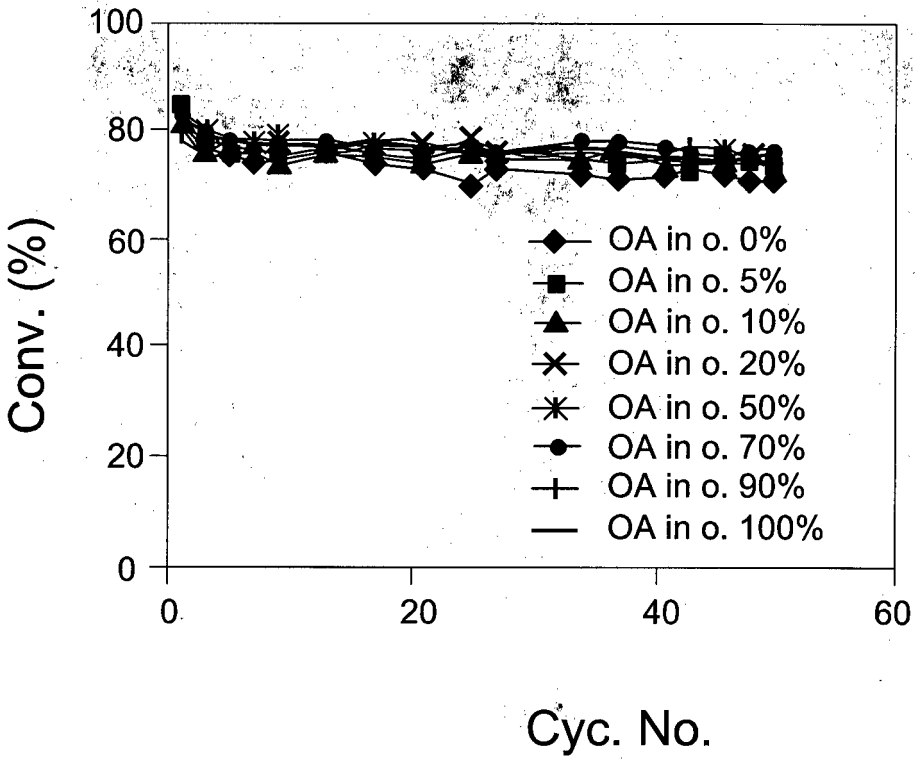

100
80
60
40
20
0
Conv. (%)
0
20
40
60
Cyc. No.
OA in o. 0%
OA in o. 5%
OA in o. 10%
OA in o. 20%
OA in o. 50%
OA in o. 70%
OA in o. 90%
OA in o. 100%

Figure 18

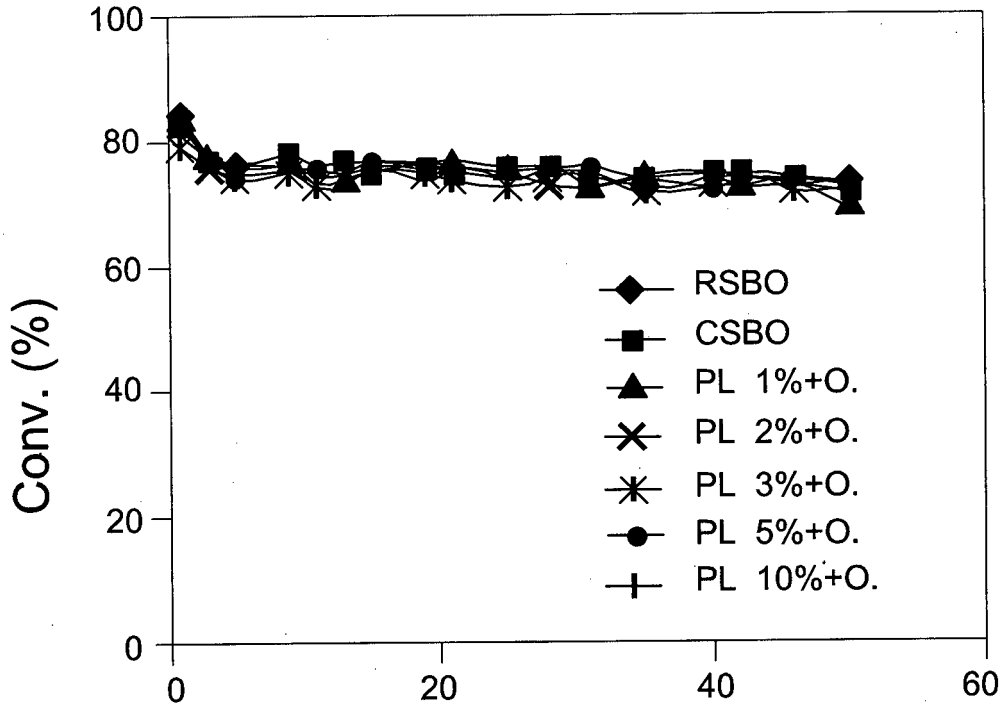

100
80
60
40
20
0
Conv. (%)
0
20
40
60
Cyc. No.
RSBO
CSBO
PL 1%+O.
PL 2%+O.
PL 3%+O.
PL 5%+O.
PL 10%+O.

Figure 19

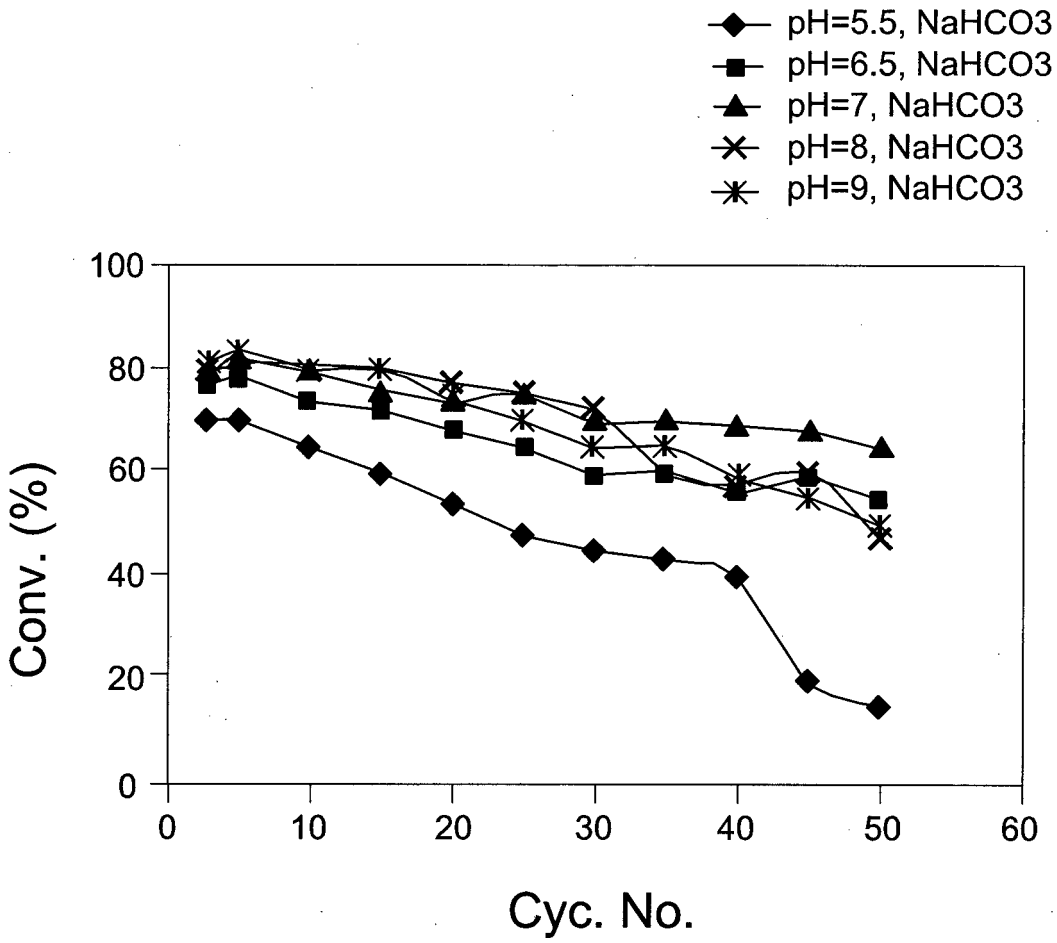

pH=5.5, NaHCO3
pH=6.5, NaHCO3
pH=7, NaHCO3
pH=8, NaHCO3
pH=9, NaHCO3
Conv. (%)
Cyc. No.
0
20
40
60
80
100
0
10
20
30
40
50
60

Figure 20

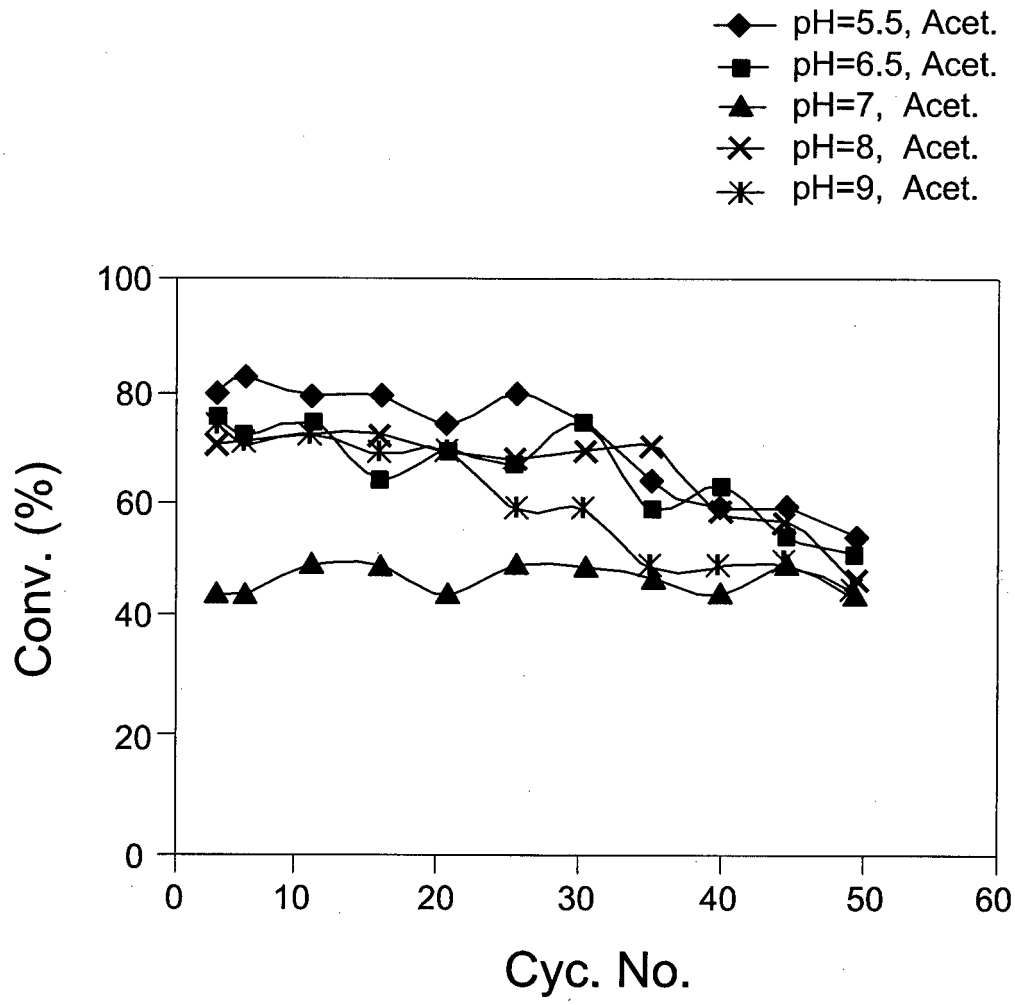

pH=5.5, Acet.
pH=6.5, Acet.
pH=7, Acet.
pH=8, Acet.
pH=9, Acet.
Conv. (%)
100
80
60
40
20
0
0
10
20
30
40
50
60
Cyc. No.

Figure 21

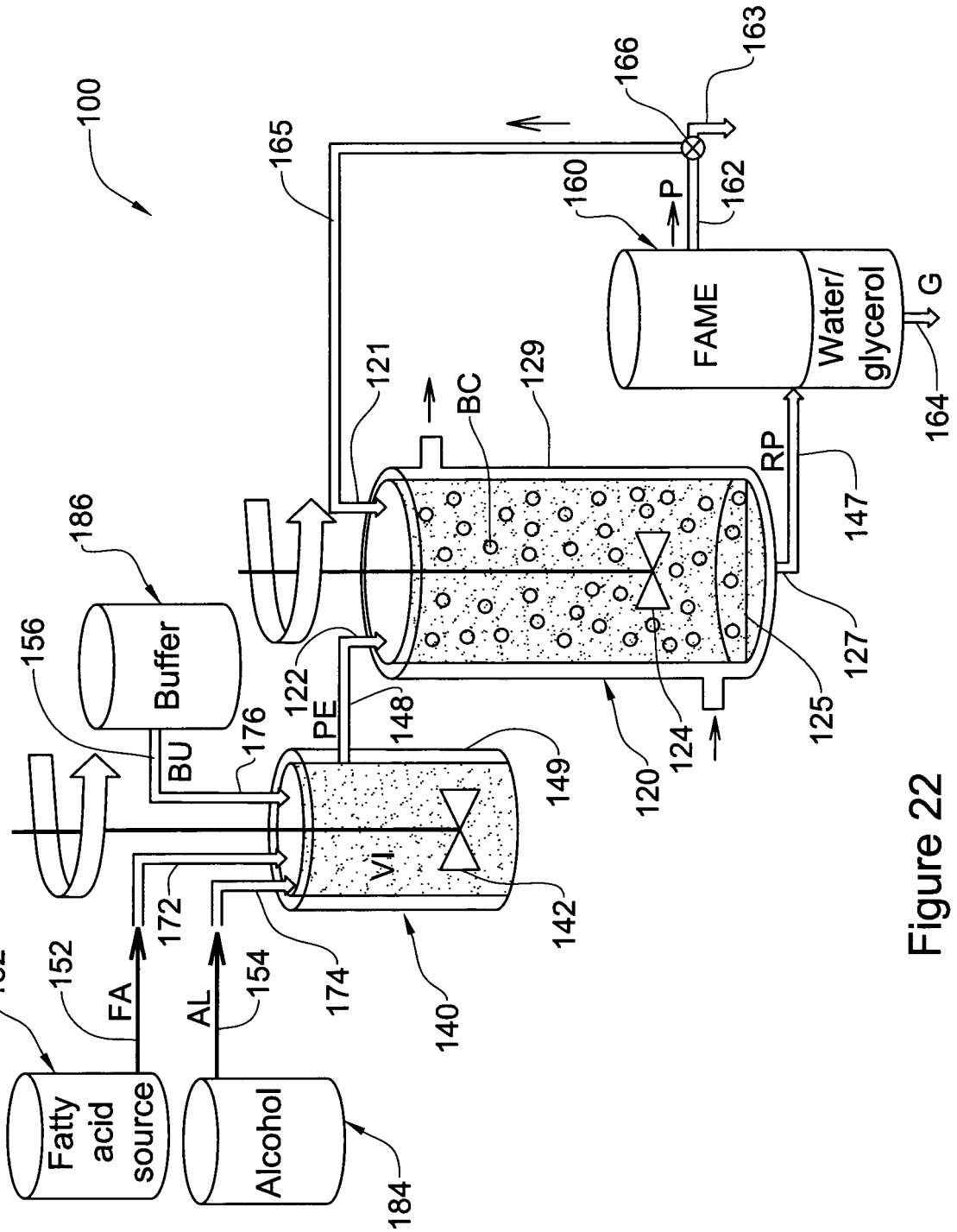

100
165
166
163
160
P
162
FAME
Water/
glycerol
G
164
121
BC
129
RP
147
186
Buffer
156
BU
176
122
PE
148
149
120
124
125
127
VI
142
140
172
174
182
152
FA
AL
154
Fatty
acid
source
Alcohol
184

Figure 22

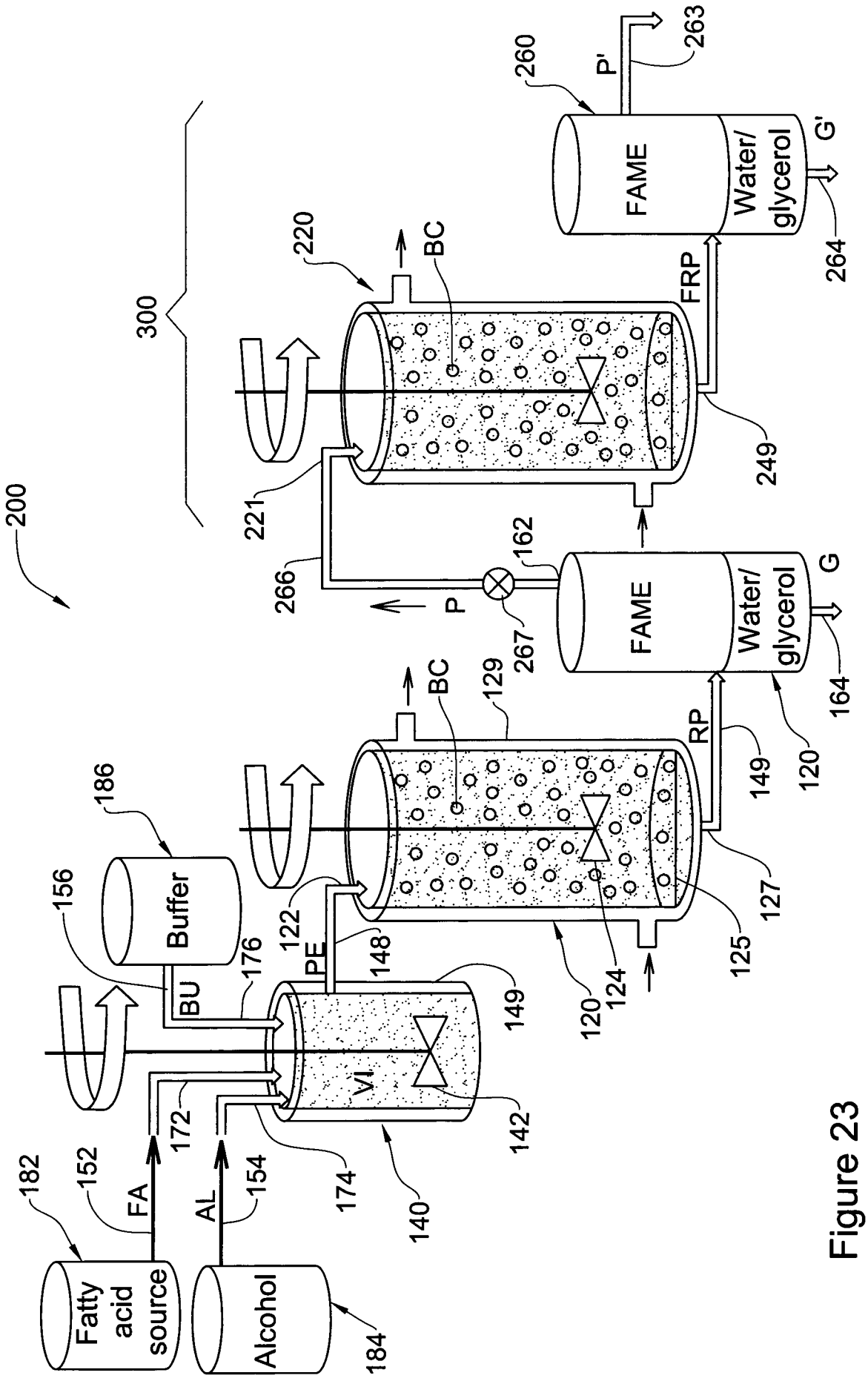

200
300
Fatty acid source
182
Alcohol
184
FA
152
AL
154
172
174
140
142
VI
149
120
124
125
127
120
164
G
FAME
Water/ glycerol
162
267
P
266
221
220
BC
129
RP
149
FRP
249
260
P'
263
G'
264
Buffer
186
156
BU
176
122
PE
148

Figure 23