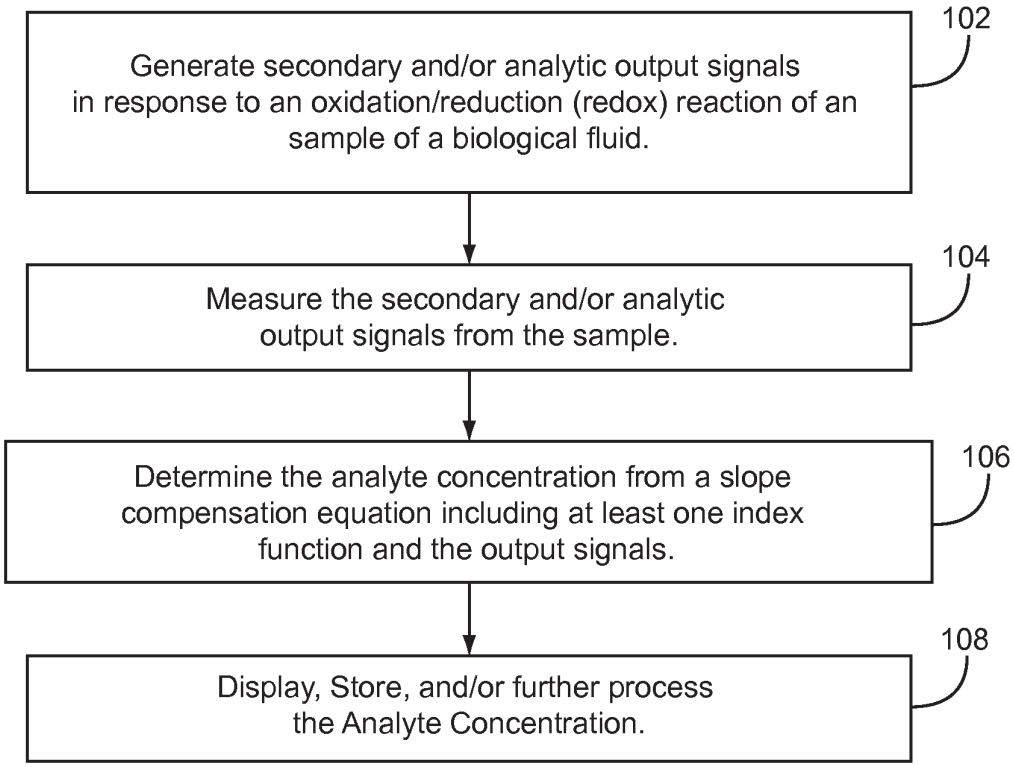

Generate secondary and/or analytic output signals in response to an oxidation/reduction (redox) reaction of an sample of a biological fluid.
102
Measure the secondary and/or analytic output signals from the sample.
104
Determine the analyte concentration from a slope compensation equation including at least one index function and the output signals.
106
Display, Store, and/or further process the Analyte Concentration.
108

Fig. 1A

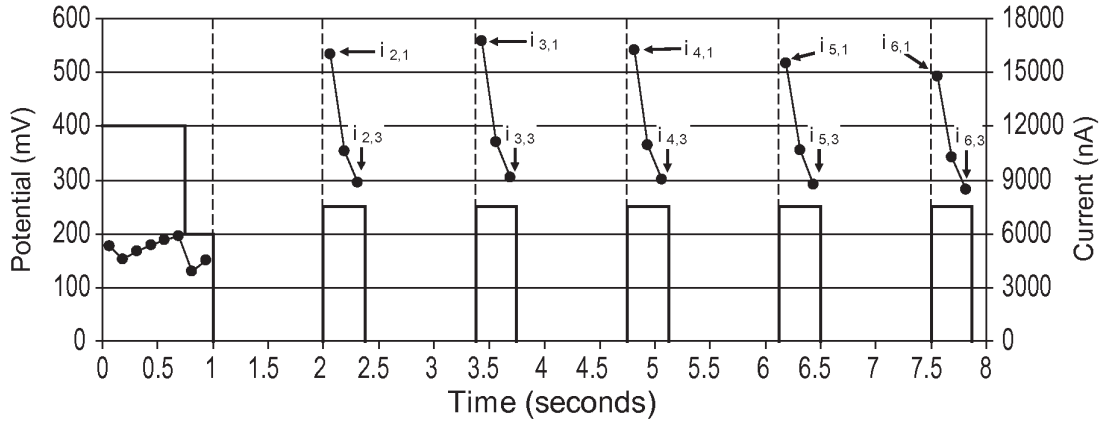

Potential (mV)
Current (nA)
Time (seconds)
i 2,1
i 3,1
i 4,1
i 5,1
i 6,1
i 2,3
i 3,3
i 4,3
i 5,3
i 6,3

Fig. 2A

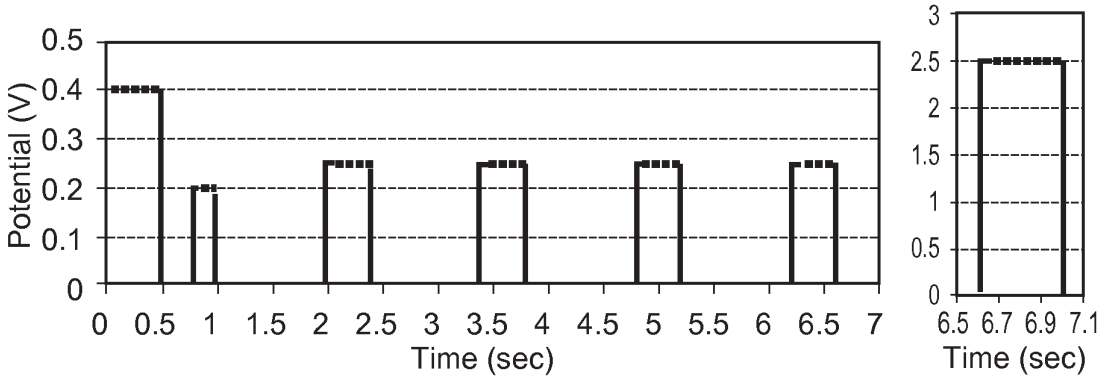

Potential (V)
Time (sec)
Time (sec)

Fig. 2B

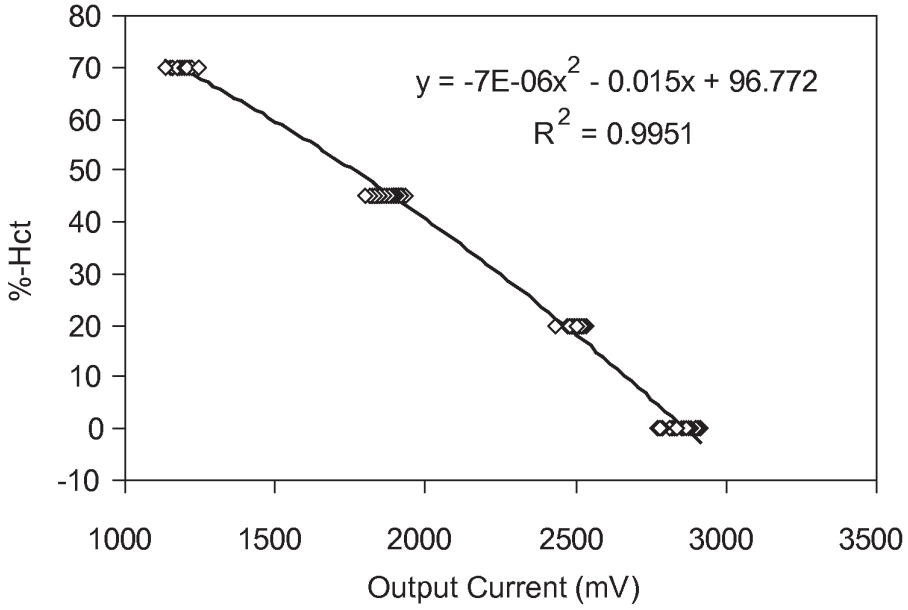

y = -7E-06x2 - 0.015x + 96.772
R2 = 0.9951
%-Hct
Output Current (mV)
80
70
60
50
40
30
20
10
0
-10
1000
1500
2000
2500
3000
3500

Fig.2C

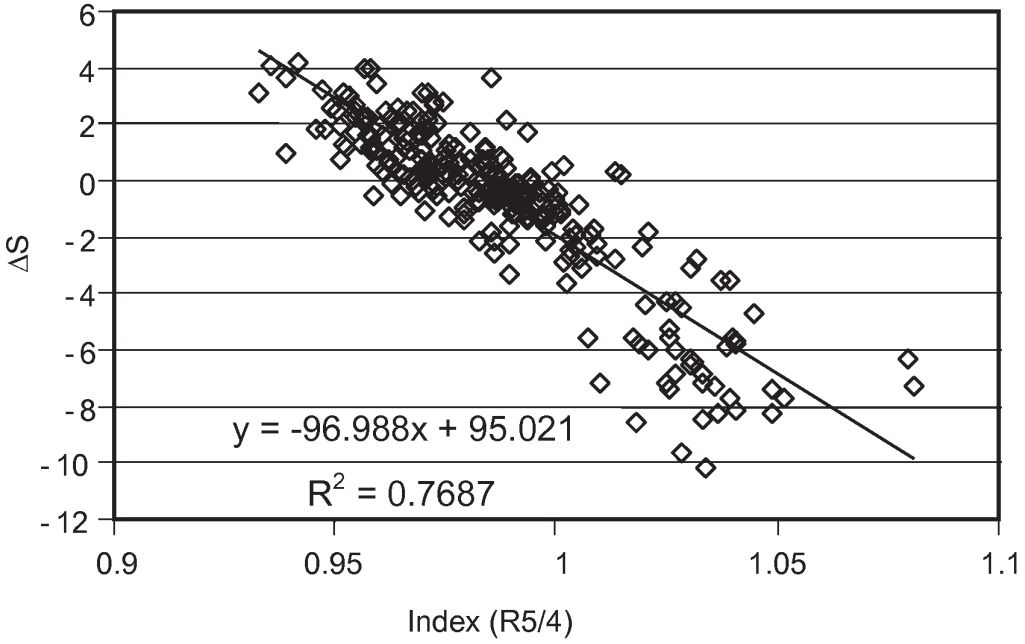

y = -96.988x + 95.021
R2 = 0.7687
ΔS
Index (R5/4)
6
4
2
0
-2
-4
-6
-8
-10
-12
0.9
0.95
1
1.05
1.1

Fig.3A

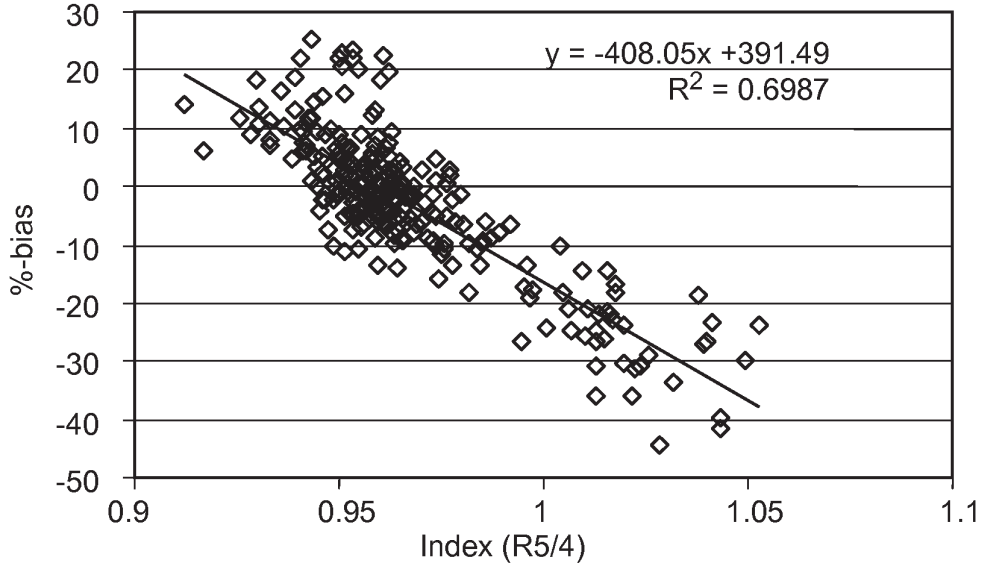

y = -408.05x +391.49
R2 = 0.6987
%-bias
Index (R5/4)
30
20
10
0
-10
-20
-30
-40
-50
0.9
0.95
1
1.05
1.1

Fig.3B

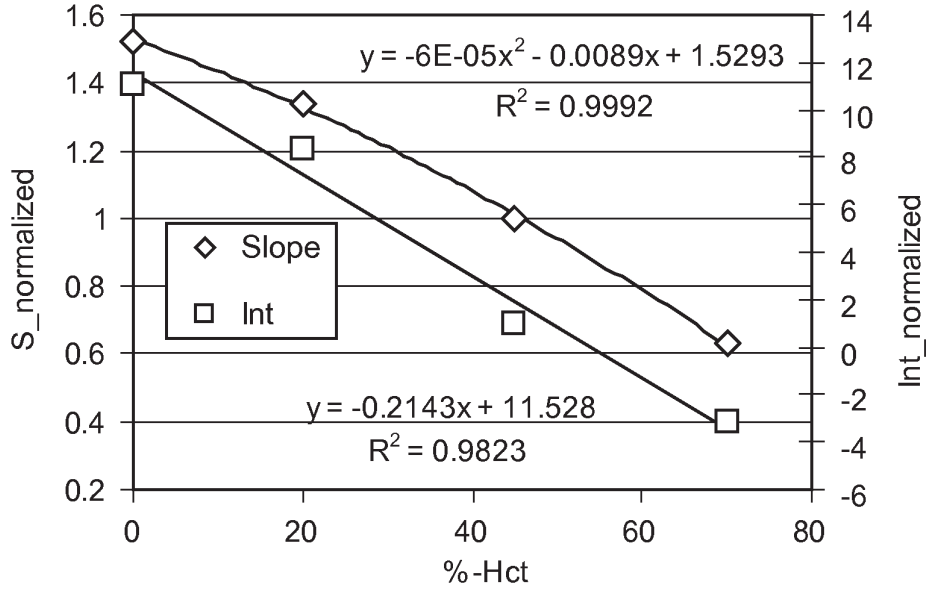

y = -6E-05x2 - 0.0089x + 1.5293
R2 = 0.9992
y = -0.2143x + 11.528
R2 = 0.9823
Slope
Int
S_normalized
Int_normalized
%-Hct
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
14
12
10
8
6
4
2
0
-2
-4
-6
0
20
40
60
80

Fig.3C

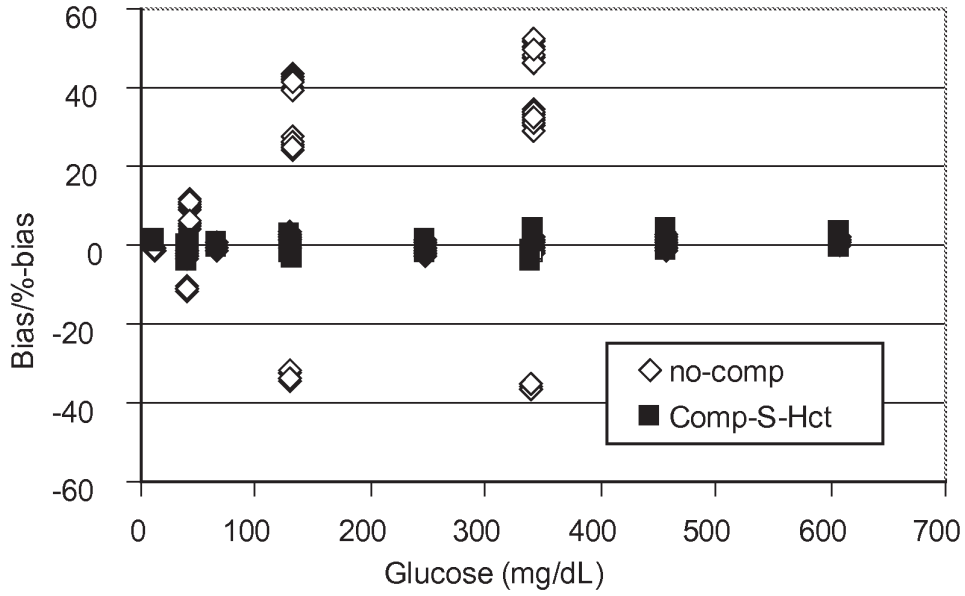

60
40
20
0
-20
-40
-60
Bias/%-bias
0
100
200
300
400
500
600
700
Glucose (mg/dL)
no-comp
Comp-S-Hct

Fig.4A

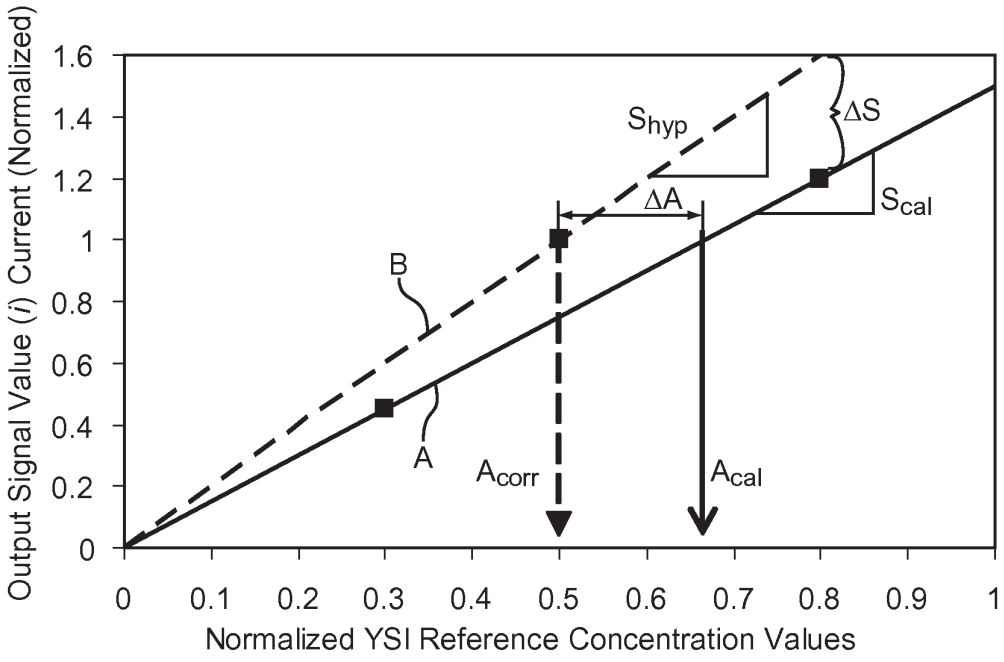

1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Output Signal Value (i) Current (Normalized)
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
Normalized YSI Reference Concentration Values
Shyp
ΔS
ΔA
Scal
B
A
Acorr
Acal

Fig.4B

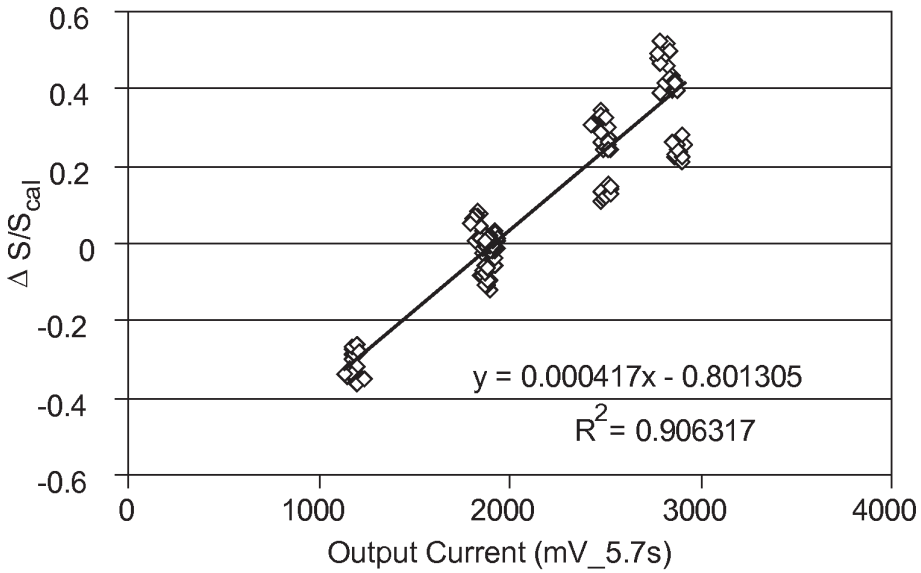

0.6
0.4
0.2
0
-0.2
-0.4
-0.6
Δ S/S$_{cal}$
y = 0.000417x - 0.801305
R^2= 0.906317
0
1000
2000
3000
4000
Output Current (mV_5.7s)

Fig.5A

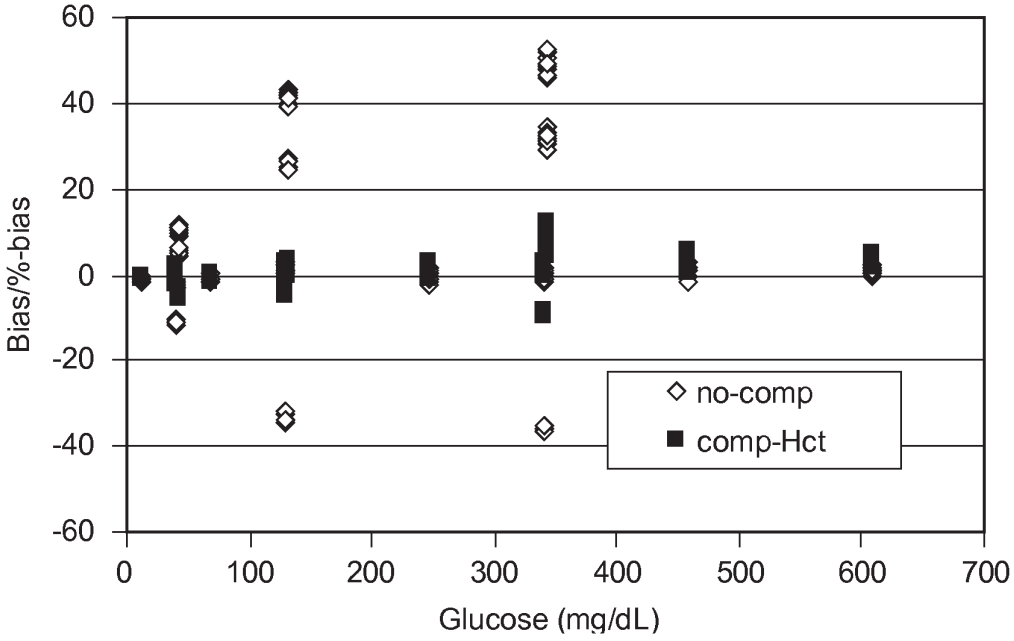

60
40
20
0
-20
-40
-60
Bias/%-bias
no-comp
comp-Hct
0
100
200
300
400
500
600
700
Glucose (mg/dL)

Fig.5B

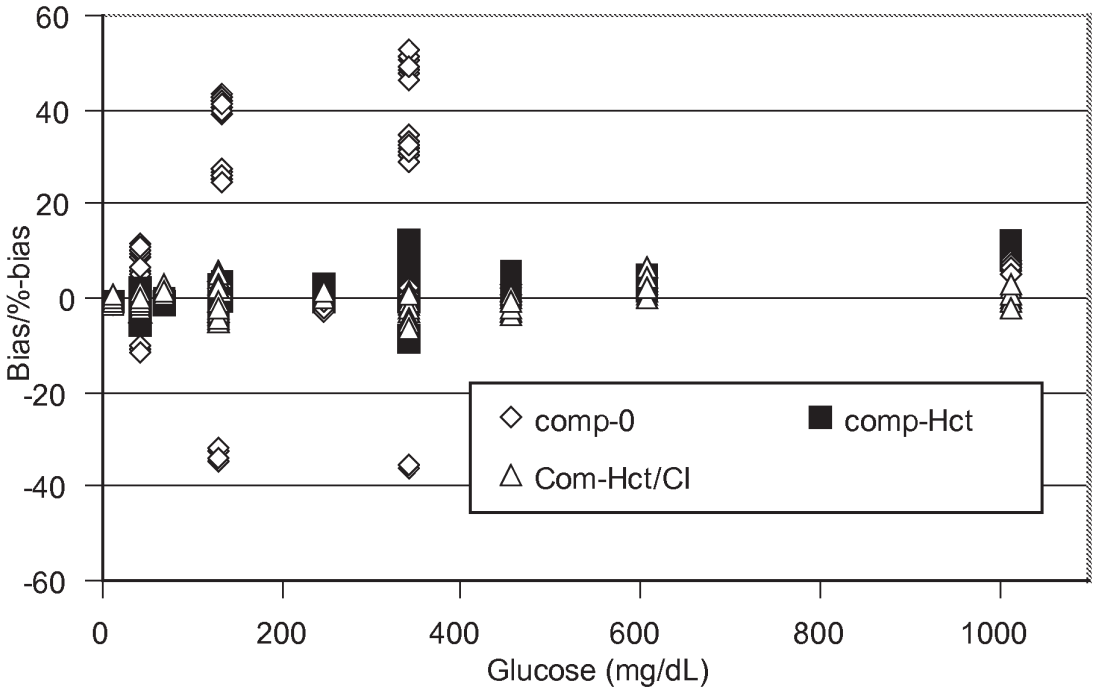

60
40
20
0
-20
-40
-60
Bias/%-bias
0
200
400
600
800
1000
Glucose (mg/dL)
comp-0
comp-Hct
Com-Hct/CI

Fig.5C

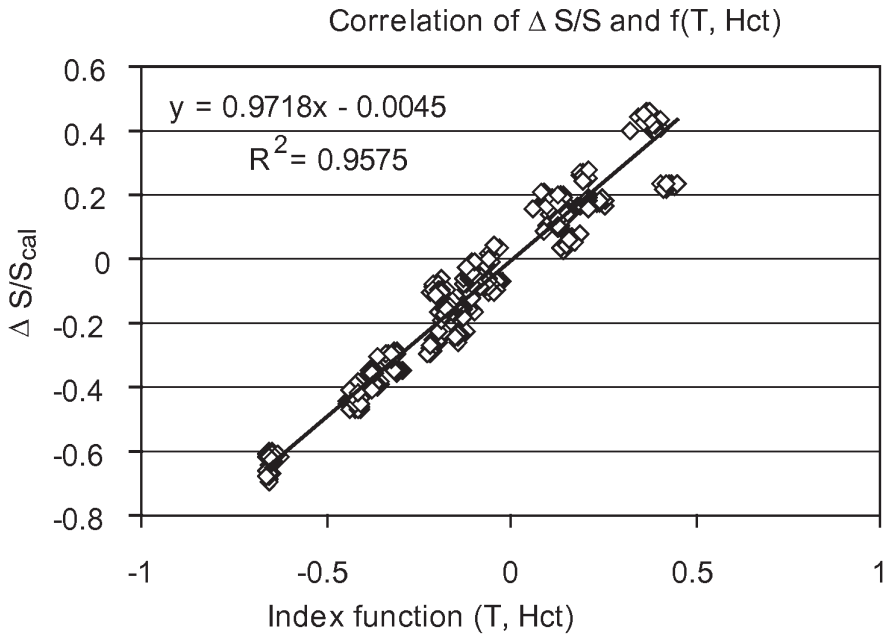

Correlation of Δ S/S and f(T, Hct)
y = 0.9718x - 0.0045
R2= 0.9575
Δ S/Scal
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-0.5
0
0.5
1
Index function (T, Hct)

Fig.6A

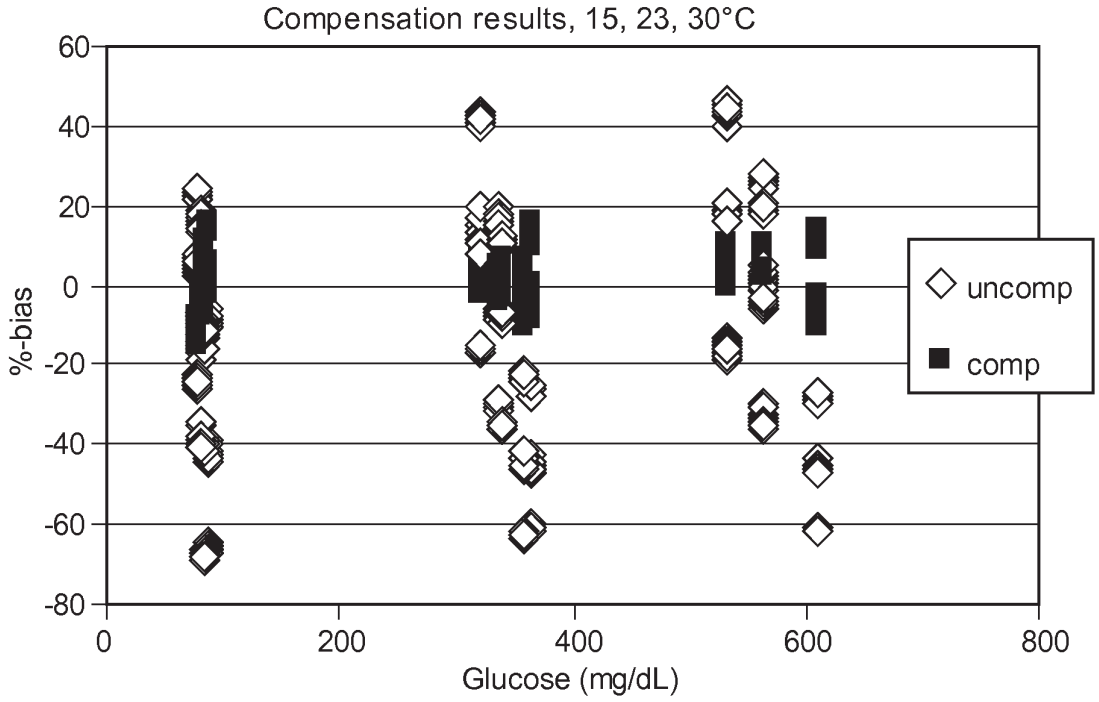

Compensation results, 15, 23, 30°C
60
40
20
0
-20
-40
-60
-80
%-bias
0
200
400
600
800
Glucose (mg/dL)
uncomp
comp

Fig.6B

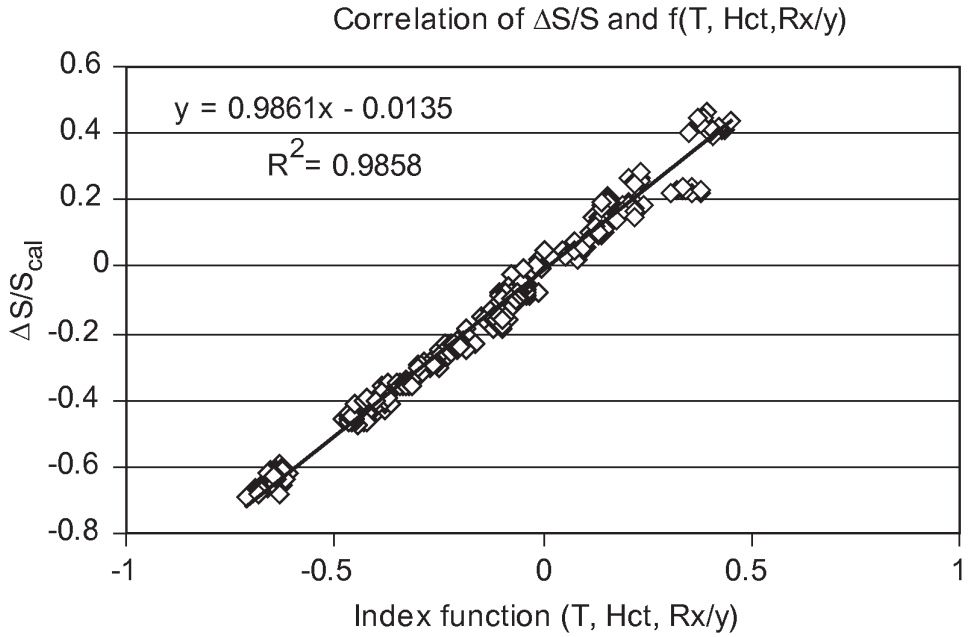

Correlation of ΔS/S and f(T, Hct,Rx/y)
y = 0.9861x - 0.0135
R2= 0.9858
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
ΔS/Scal
-1
-0.5
0
0.5
1
Index function (T, Hct, Rx/y)

Fig.6C

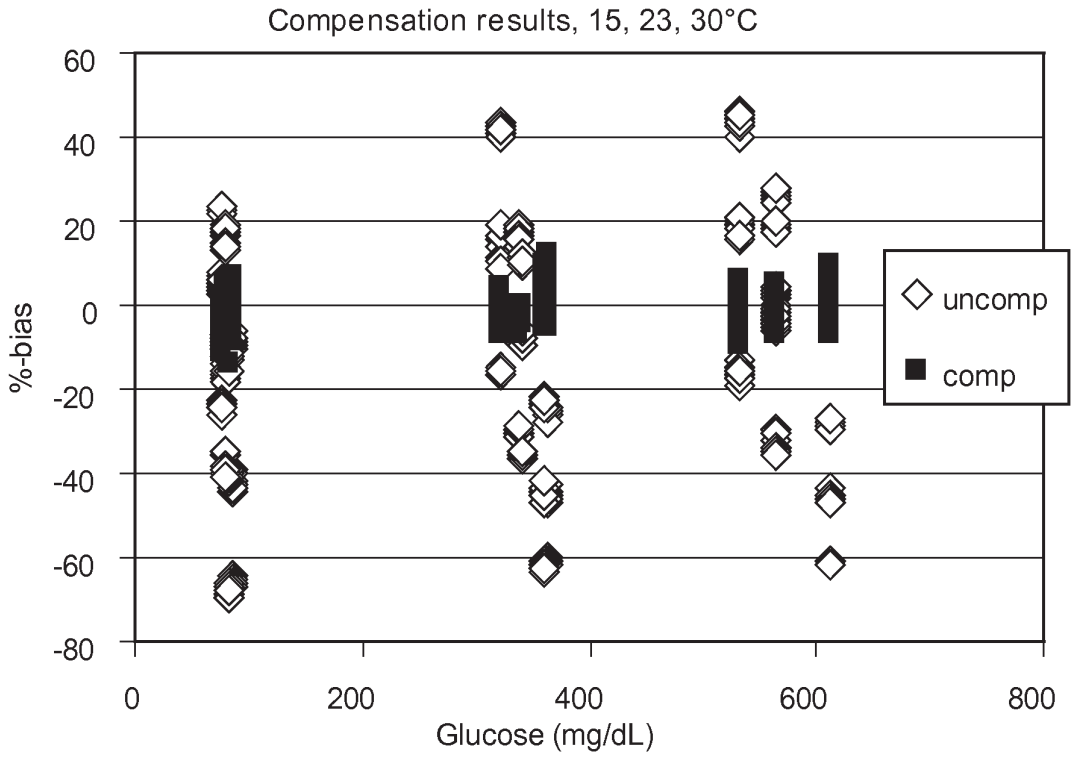

Compensation results, 15, 23, 30°C
60
40
20
0
-20
-40
-60
-80
%-bias
0
200
400
600
800
Glucose (mg/dL)
uncomp
comp

Fig.6D

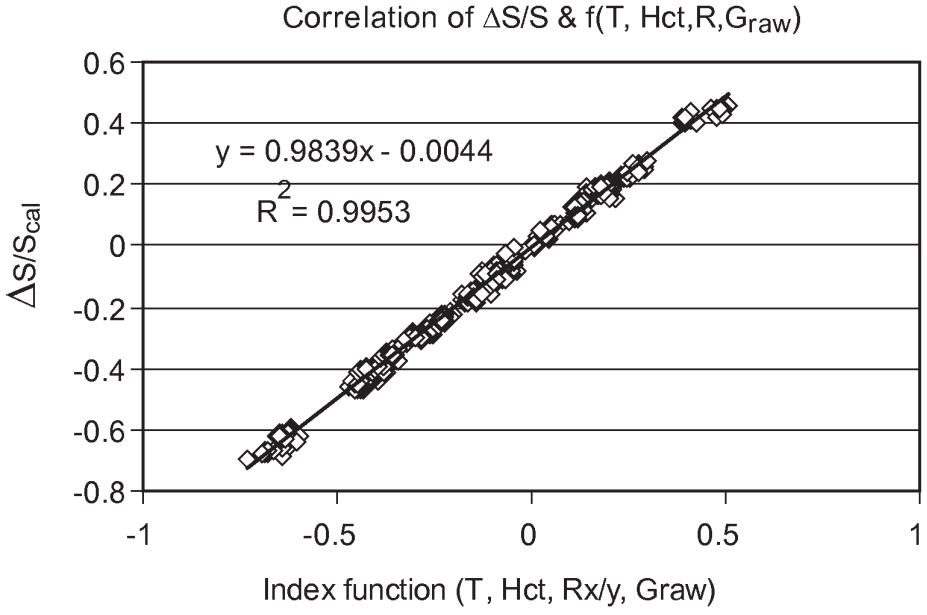

Correlation of ΔS/S & f(T, Hct,R,Graw)
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
ΔS/Scal
y = 0.9839x - 0.0044
R2 = 0.9953
-1
-0.5
0
0.5
1
Index function (T, Hct, Rx/y, Graw)

Fig.6E

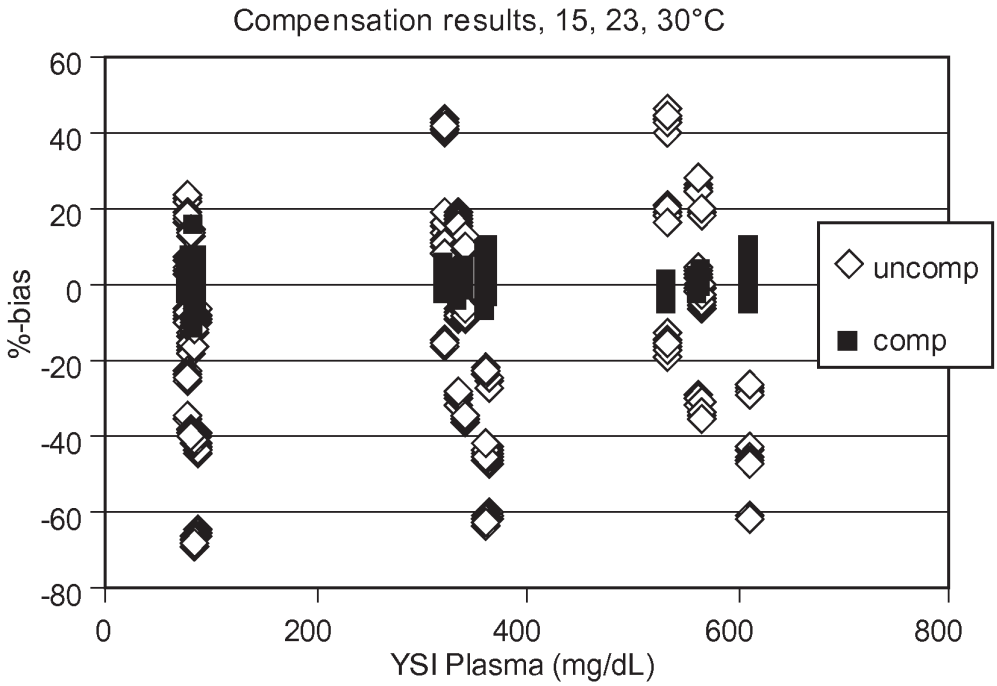

Compensation results, 15, 23, 30°C
60
40
20
0
-20
-40
-60
-80
%-bias
0
200
400
600
800
YSI Plasma (mg/dL)
uncomp
comp

Fig.6F

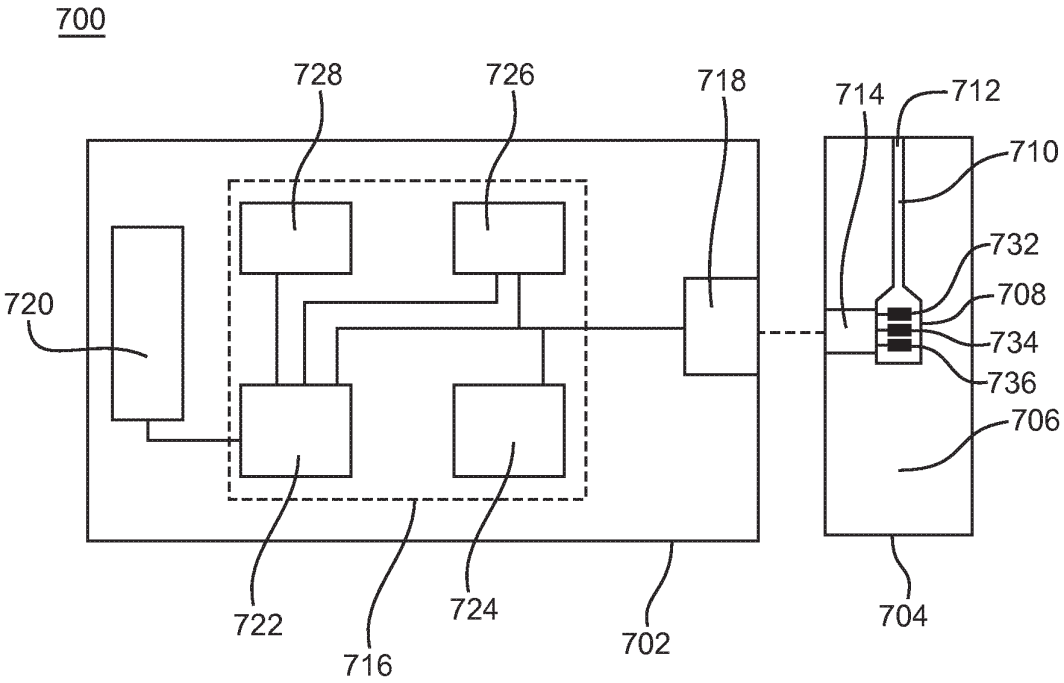

700
728
726
718
714
712
710
732
708
734
736
706
720
722
716
724
702
704

Fig.7A