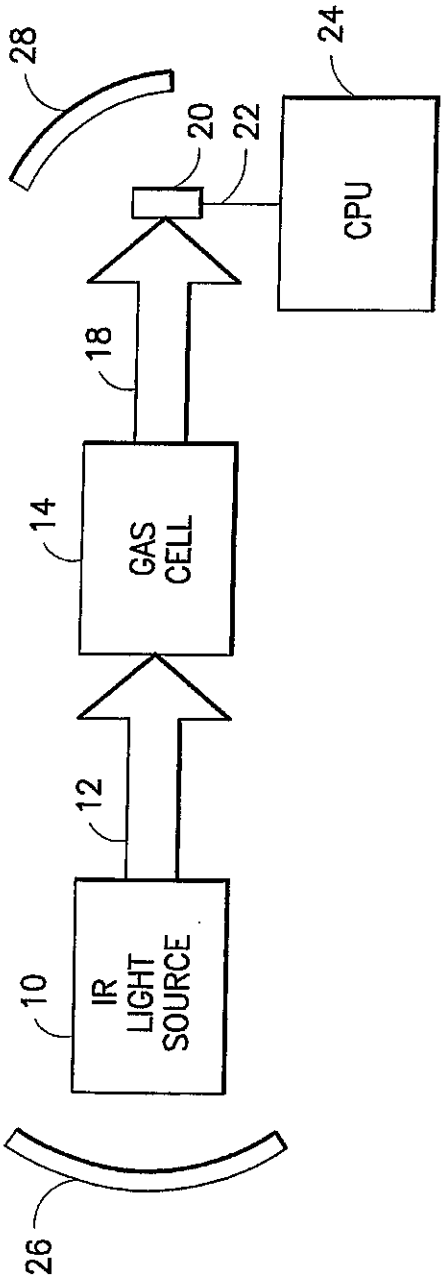


FIG. 1

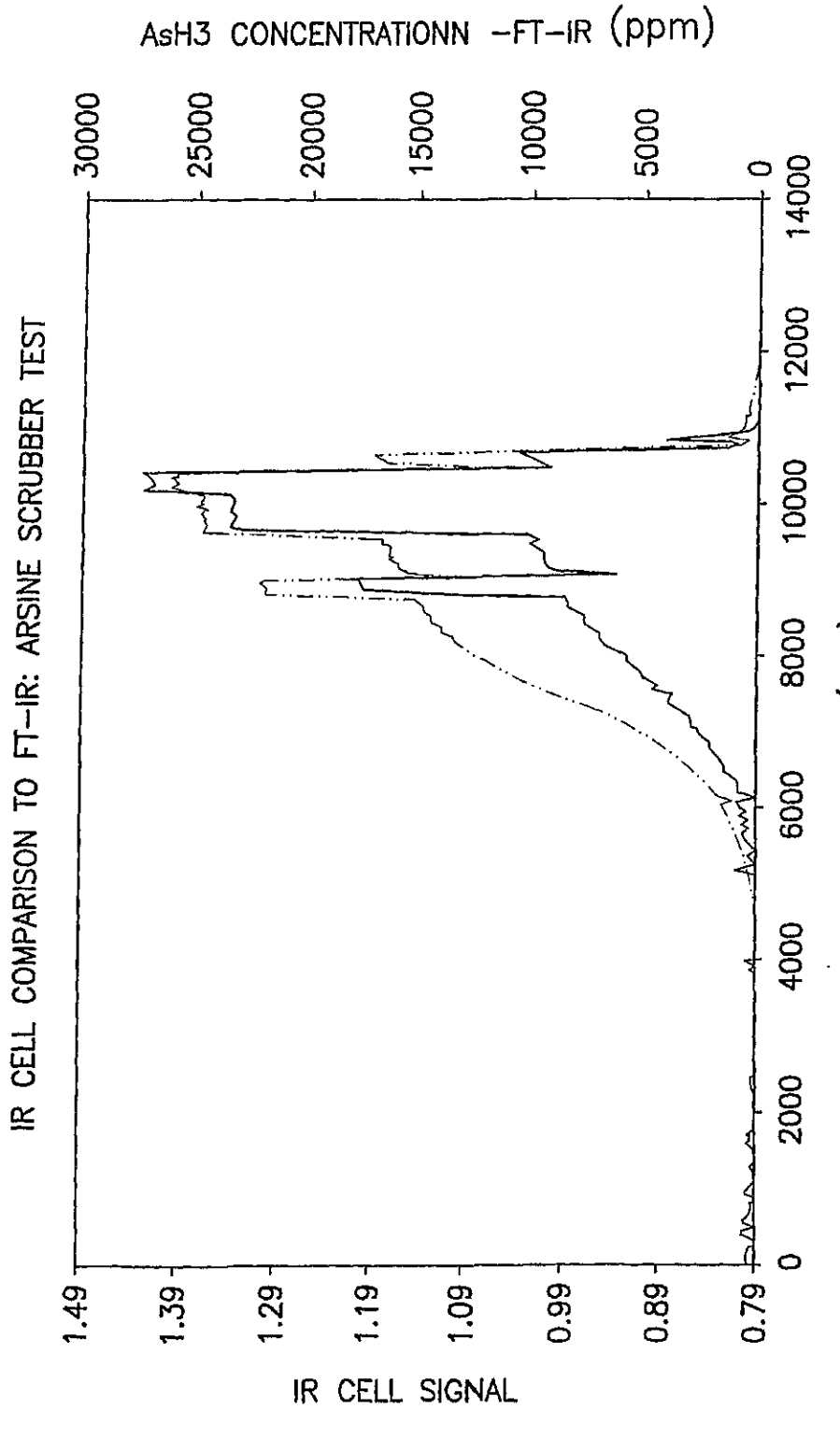

AsH3 CONCENTRATIONN -FT-IR (ppm)
30000
25000
20000
15000
10000
5000
0
IR CELL COMPARISON TO FT-IR: ARSINE SCRUBBER TEST
1.49
1.39
1.29
1.19
1.09
0.99
0.89
0.79
IR CELL SIGNAL
0
2000
4000
6000
8000
10000
12000
14000
TIME (sec)
THERMOPILE
FT-IR

FIG.2

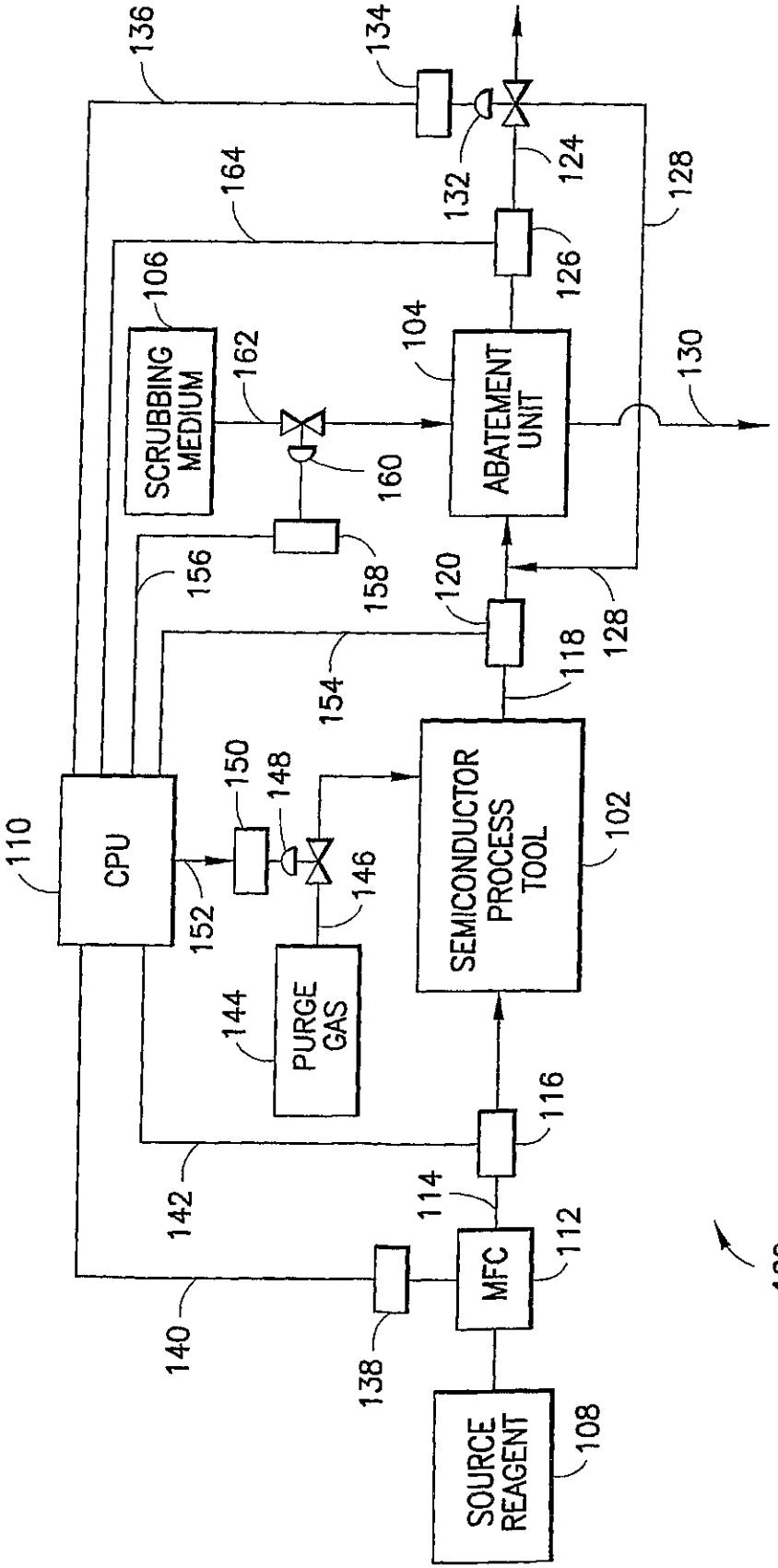

136
134
132
124
128
164
126
106
104
130
SCRUBBING MEDIUM
162
ABATEMENT UNIT
160
158
156
120
128
154
118
150
148
110
CPU
SEMICONDUCTOR PROCESS TOOL
102
152
146
144
PURGE GAS
116
142
114
112
MFC
100
140
138
SOURCE REAGENT
108

FIG.3

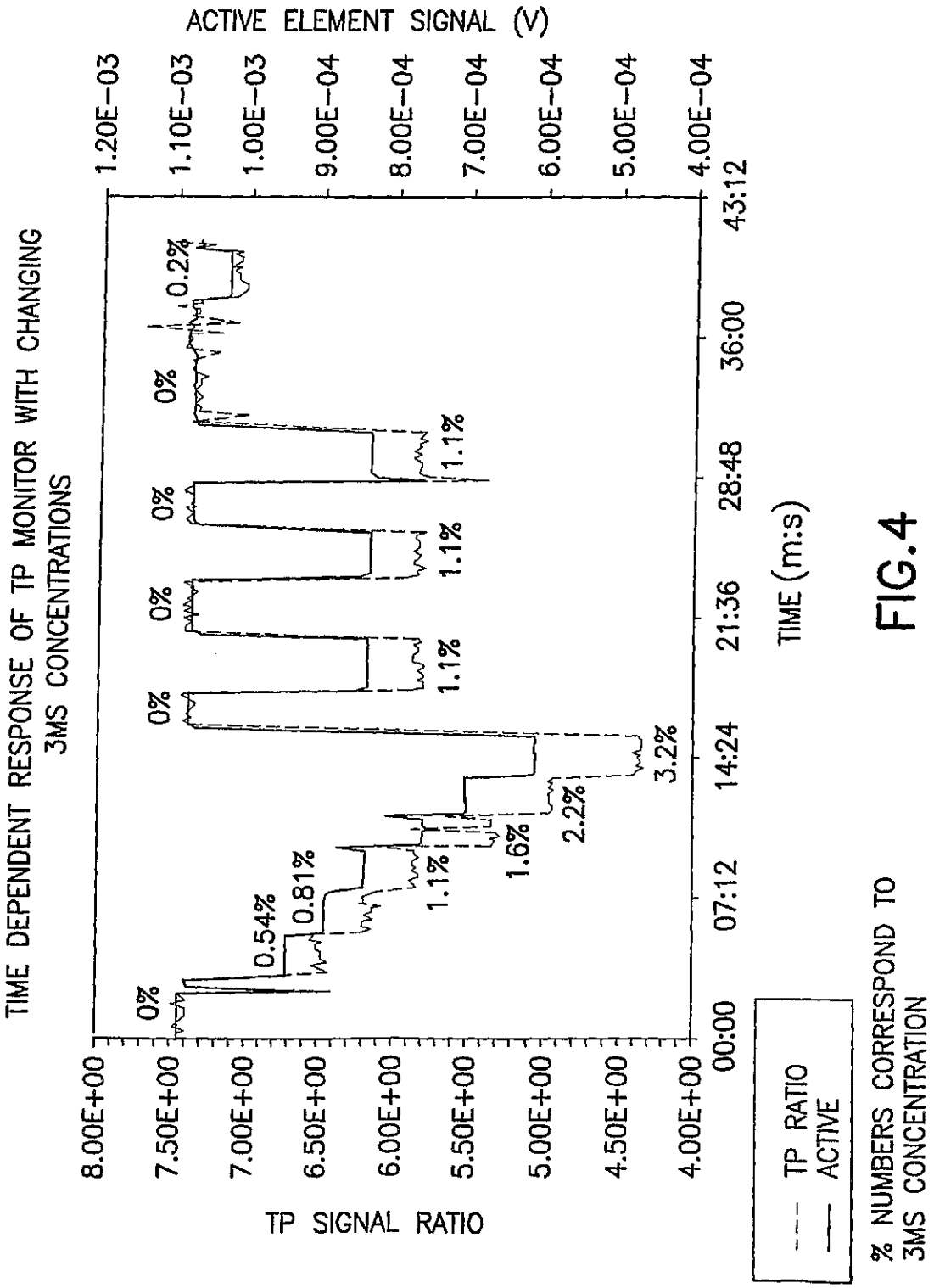

TIME DEPENDENT RESPONSE OF TP MONITOR WITH CHANGING 3MS CONCENTRATIONS
ACTIVE ELEMENT SIGNAL (V)
1.20E-03
1.10E-03
1.00E-03
9.00E-04
8.00E-04
7.00E-04
6.00E-04
5.00E-04
4.00E-04
TP SIGNAL RATIO
8.00E+00
7.50E+00
7.00E+00
6.50E+00
6.00E+00
5.50E+00
5.00E+00
4.50E+00
4.00E+00
TIME (m:s)
00:00
07:12
14:24
21:36
28:48
36:00
43:12
0%
0.54%
0.81%
1.1%
1.6%
2.2%
3.2%
0%
1.1%
0%
1.1%
0%
1.1%
0%
0.2%
TP RATIO
ACTIVE
% NUMBERS CORRESPOND TO 3MS CONCENTRATION

FIG.4

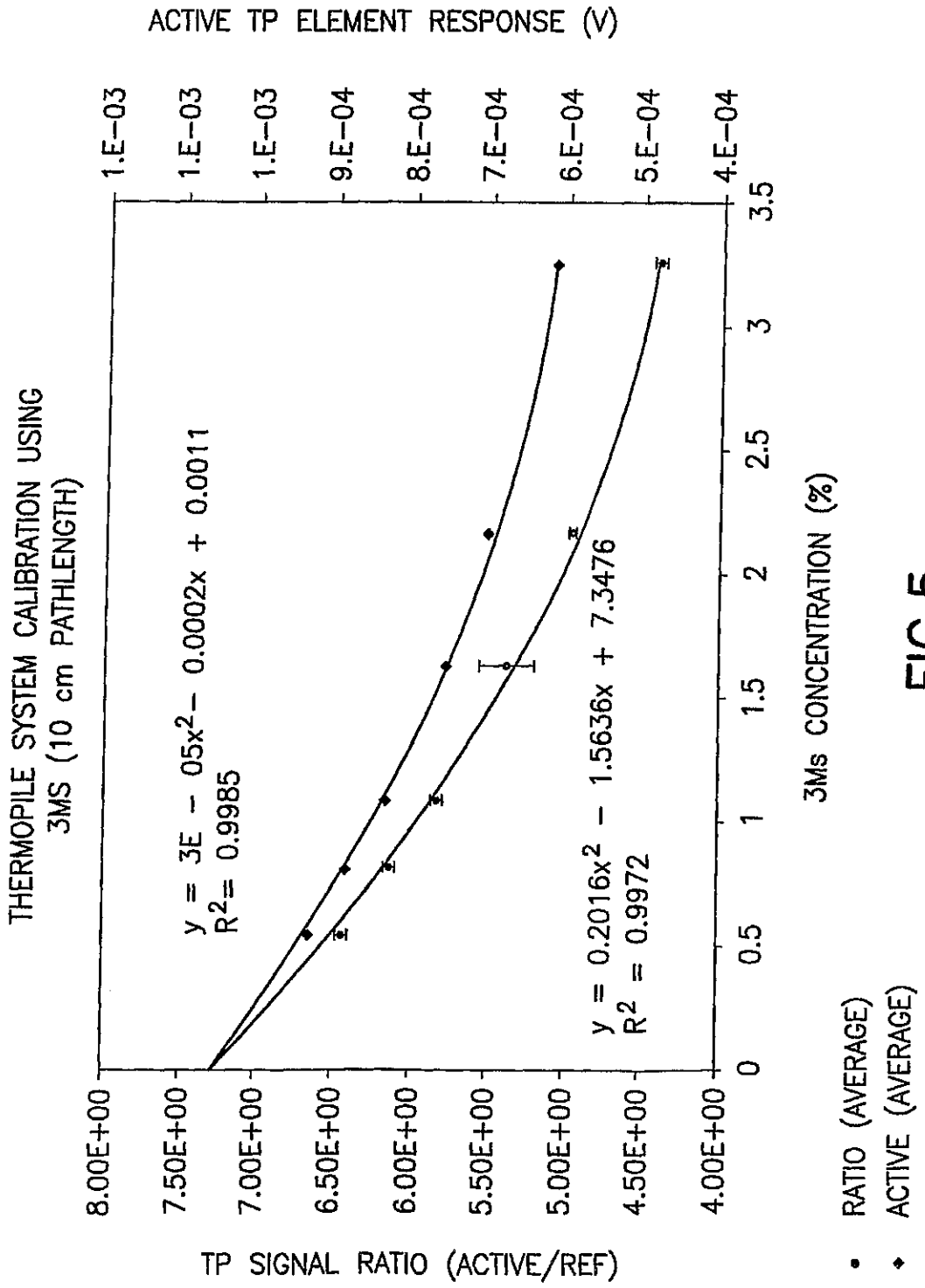

THERMOPILE SYSTEM CALIBRATION USING
3MS (10 cm PATHLENGTH)
ACTIVE TP ELEMENT RESPONSE (V)
TP SIGNAL RATIO (ACTIVE/REF)
3Ms CONCENTRATION (%)
y = 3E - 05x2 - 0.0002x + 0.0011
R2 = 0.9985
y = 0.2016x2 - 1.5636x + 7.3476
R2 = 0.9972
RATIO (AVERAGE)
ACTIVE (AVERAGE)
1.E-03
1.E-03
1.E-03
9.E-04
8.E-04
7.E-04
6.E-04
5.E-04
4.E-04
8.00E+00
7.50E+00
7.00E+00
6.50E+00
6.00E+00
5.50E+00
5.00E+00
4.50E+00
4.00E+00
0
0.5
1
1.5
2
2.5
3
3.5

FIG.5