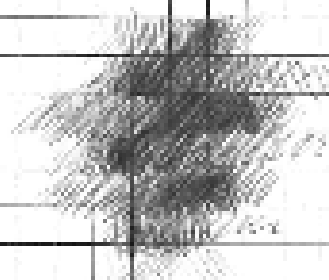


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From Page No.

This is an attempt to deconvolute an old water scan obtained by Dr. Monica Doran and Phillip Kuepp, a 20th of 28. This is an aqueous-metric water scan, showing extensive distortion.



PBS buffer + 10% glucose
(target was a cell)
Monocyte

$E = 650 \text{ mV}$ in As/Hg @
measuring B_2O_3

The data is in the format:

0	,	0.00E+00	,	1.23E-12
1	,		,	
2	,		,	
3	,		,	
4	,		,	

Annotations:

- Arrows point to the numbers 0, 1, 2, 3, 4, indicating the "number of measurement".
- An arrow points to the comma between 0 and 0.00E+00, labeled "comma separator".
- An arrow points to the comma between 0.00E+00 and 1.23E-12, labeled "comma separator".
- An arrow points to the "E" in 1.23E-12, labeled "exponent in".
- An arrow points to the "E" in 0.00E+00, labeled "exponent in".
- An arrow points to the "E" in 1.23E-12, labeled "exponent in".

The data is not in chronological order!

This should be the order:

Witnessed and understood by me

Date

Observed by

Recorded by

To Page No.

Date

2018.06.14.

From Page No. _____

Fax machine order:

1 - 2001 ✓
 1002 - 2002 ✓
 2003 - 3003 ✓
 3004 - 4004 ✓
 4005 - 5005 ✓
 5006 - 6006 ✓
 6007 - 7007 ✓
 7008 - 8008 ✓
 8009 - 9009 ✓
 9010 - 10010 ✓
 10011 - 11011 ✓
 11012 - 12012 ✓
 12013 - 13013 ✓
 13014 - 14014 ✓
 14015 - 15015 ✓
 15016 - 16016 ✓
 16017 - 17017 ✓
 17018 - 18018 ✓
 18019 - 19019 ✓
 19020 - 20020 ✓



30
 10
 10

140128.1-EL-M-3D.asc

1.0
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20

program deconvolution
 explicit mode

integer :: stat
 real :: i, j, 20, 40, 60, 80, 100

do=0.585

open(1, file='11.dat')
 open(2, file='11_deconvolution.dat')
 read(1, *) i, j, 20
 do
 read(1, *, iostat=stat) i, j, 20
 if (stat /= 0) exit
 write(2, *) i, j, 1.0 (conv = 1000000/11-2000000)
 write(2, *) 1.0
 end do

end do
 close(1)
 close(2)

end program deconvolution

To Page No. _____

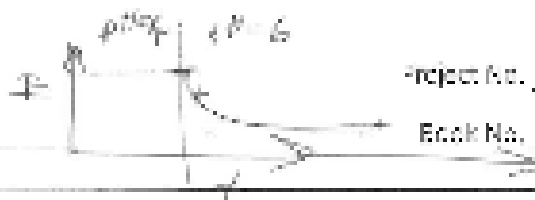
Witnessed and understood by me

Date

Invented by Andreas Kim
 Recorder by _____

Use

TITLE _____

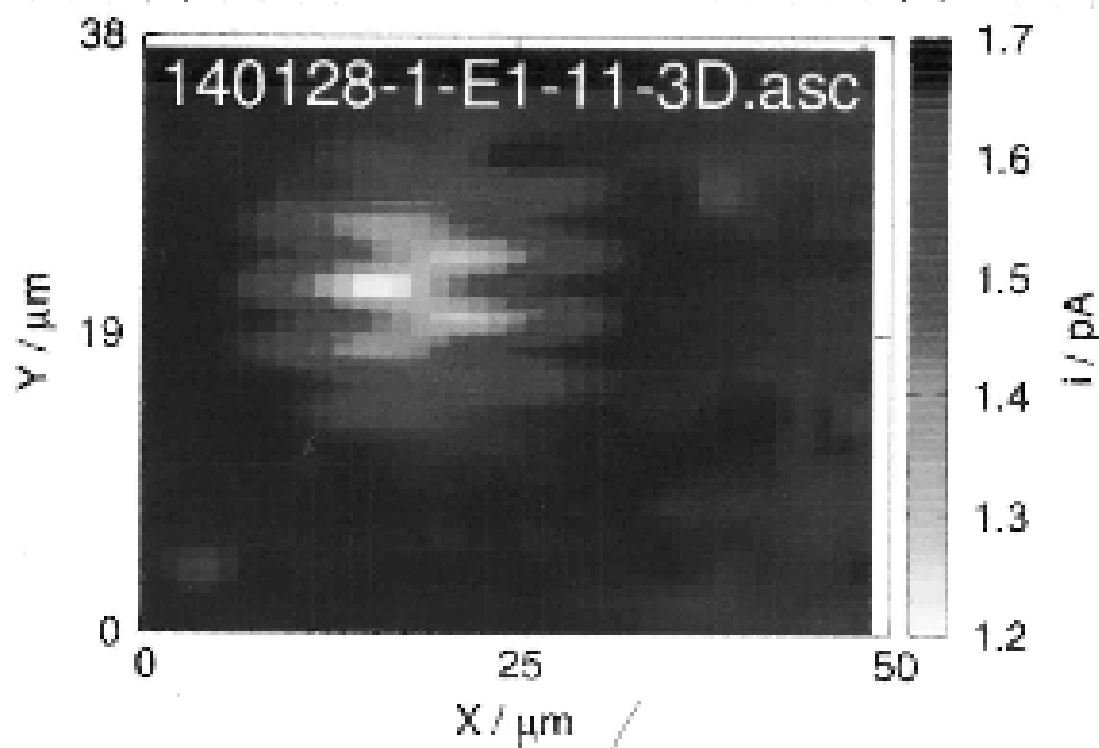


Project No. _____

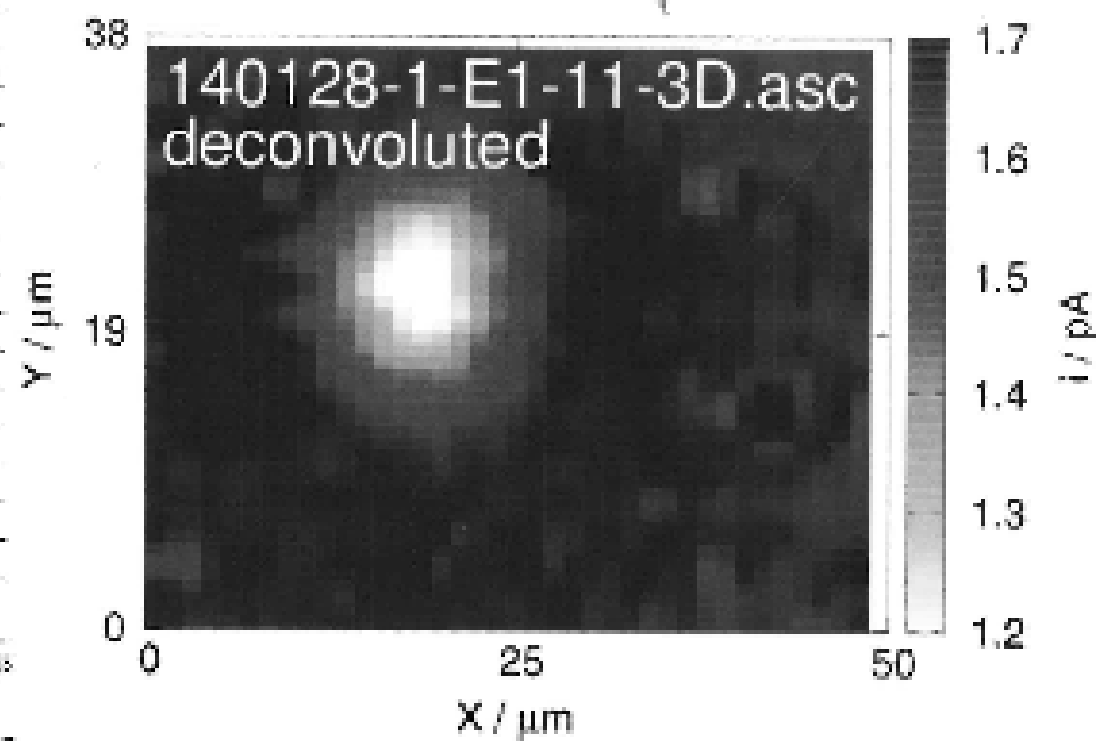
Block No. _____

From Page No. _____

$$E_z = E_0 + (E_0 - E_{sp}) e^{-\frac{z}{\lambda_c}}$$



$$\frac{z}{\lambda_c} = 0.95$$



Waters

IECA

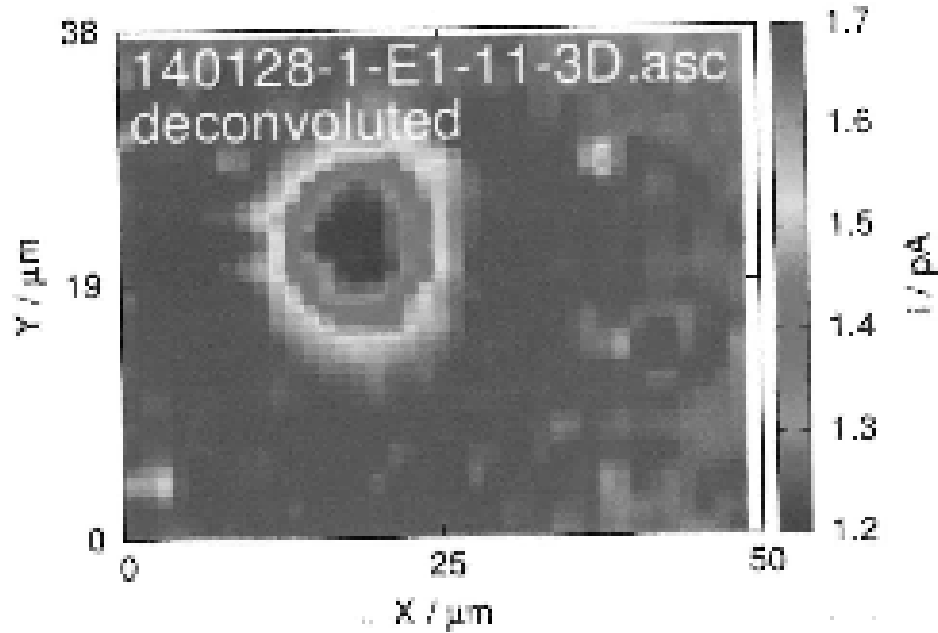
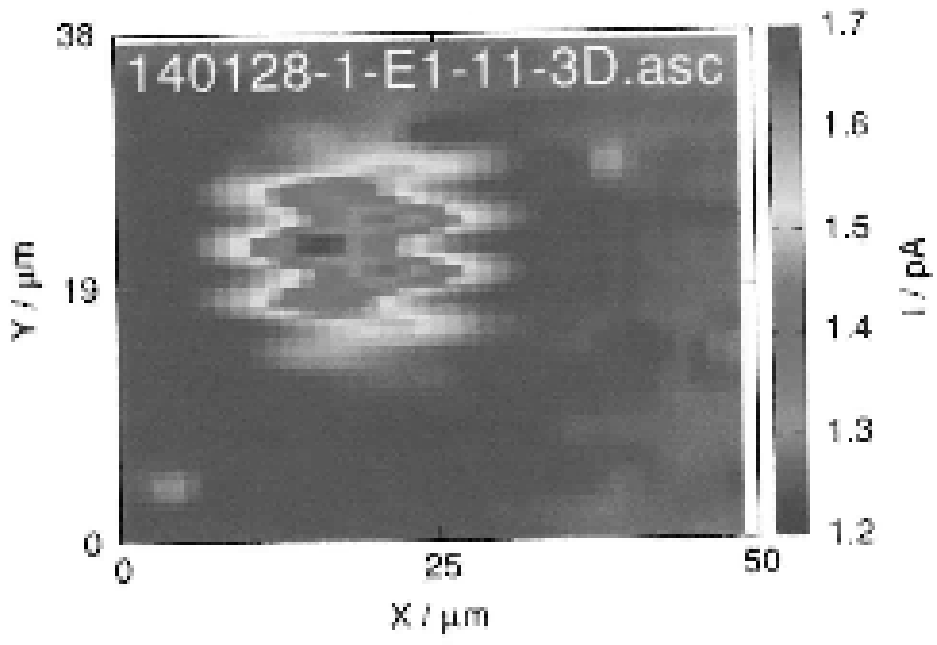
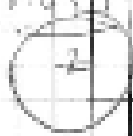
TITLE Hydrodynamic pressure

Book No. _____

From Page No. _____

1. Mount - carbon

$$f_p = \frac{F}{A} \quad \text{eg } 1.05 \text{ (N/m}^2\text{)} + \text{const.}$$



To Page No. _____

Witnessed and understood by me _____

Date _____

Entered by _____

Date _____

Recorded by _____



Project No. _____

Book No. _____

From Page No. _____

Labseminar 2018
(Biophysics)
Monday at 11.00
Auditorium CIPMM
Resonance

January, 8 th		August, 6 th	Dalia
January, 15 th	Markus	August, 13 th	Clara
January, 22 nd	Leticia	August, 20 th	Dana
January, 29 th	Katerina	August, 27 th	Reinhard
February, 5 th	Eva	September, 3 rd	Janina
February, 12 th	no seminar	September, 10 th	Lee
February, 19 th	Kim	September, 17 th	Anni
February, 26 th	Arne	September, 24 th	Maylin
March, 5 th	Renping	October, 1 st	Lucas
March, 12 th	Eva	October, 8 th	Carsten
March, 19 th	Mona	October, 15 th	Nikolina
March, 26 th	no seminar	October, 22 nd	Monika
April, 9 th	Monika	October, 29 th	Michelle
April, 16 th	general points	November, 5 th	Phillip
April, 23 rd	Maik	November, 12 th	Adrian
April, 30 th	no seminar	November, 19 th	Julia
May, 7 th		November, 26 th	Sylvia
May, 14 th	Jie Zhu	December, 3 rd	Barbara N.
May, 28 th	Ewa-J.	December, 10 th	
June, 4 th	Danica	December, 17 th	
June, 11 th	Romy		
June, 18 th	Vanessa		
June, 25.-Aug. 3.	no seminar		

to Page No. _____

Witnessed and understood by me

Date

Invented by

Date

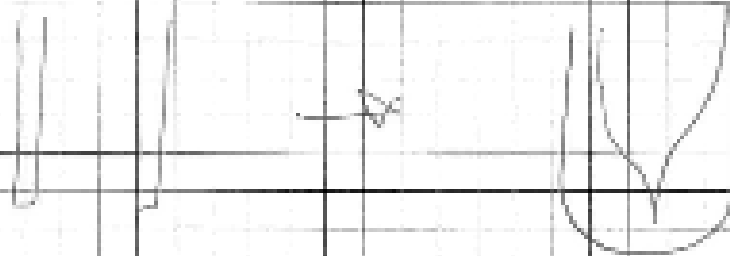
Revised by

TT: 10 μ m Pt disk electrode preparation

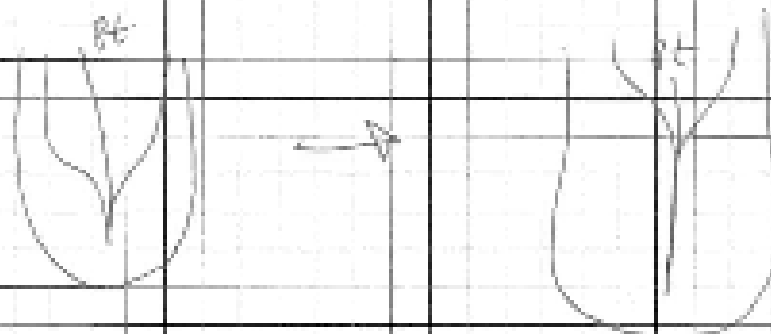
Form Page No.

I wanted to show how to make and Phillips how to prepare the UME's in this.

First, we sealed a $d_o = 2\text{mm}$ $d_i = 1\text{mm}$ borosilicate capillary at one end:



Then, I put in the $2 \times 1\text{cm}$ $d_o = 10\mu\text{m}$ Pt wire, and seal it with a propane-burner:



Then, I pushed solder into the capillary / close to the Pt wire. After that I melted it in the same flame.

To Page No.

Reviewed and accepted by

Date

Invented by

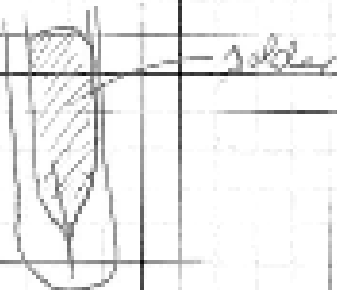
Date

Recorded by

2018.06.20.

HECA

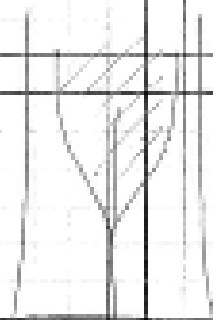
From Page No. _____



Then, while the solder was still molten, I pushed in an extra wire to provide extra connection to the system - instead.



Then, I opened the sealed end to expose the Pb-wire.



To Page No. _____

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Date

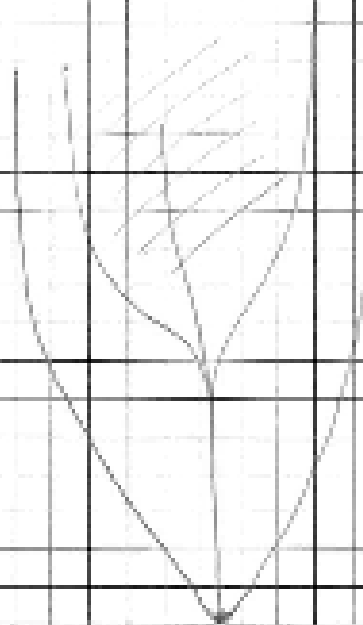
Presented by

Recorded by

Date

From Page No. _____

Then, I ground the head:



Tested with CV in 2mM Potassium / 100mM KCl.



To Page No. _____

Witnessed and named such by me

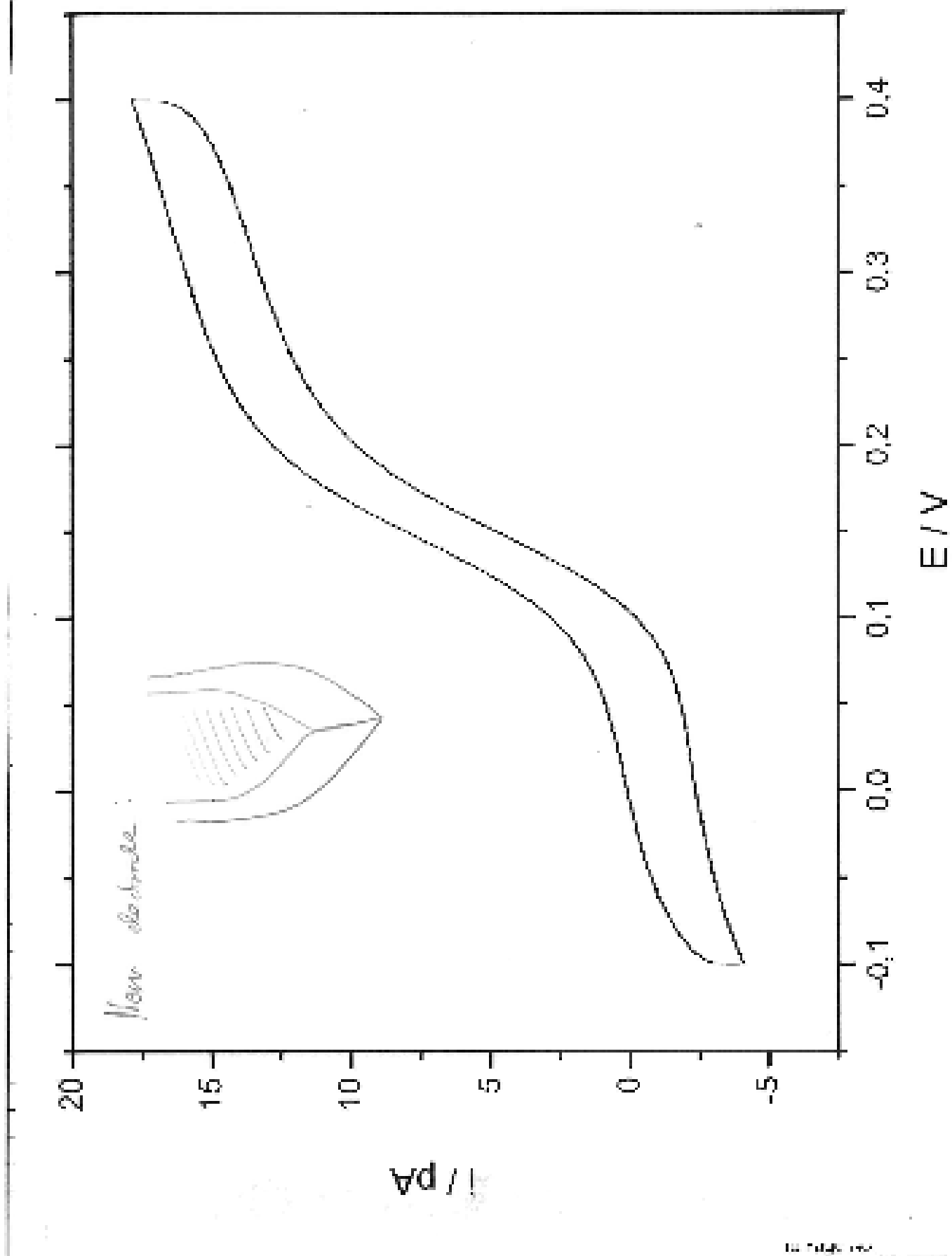
Date

Reviewed by

Date

Received by

TITLE _____



Witnessed and understood by me _____

Date _____

Invented by _____

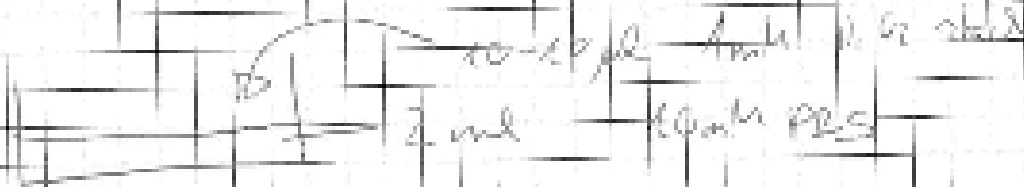
Recorded by _____

Date _____

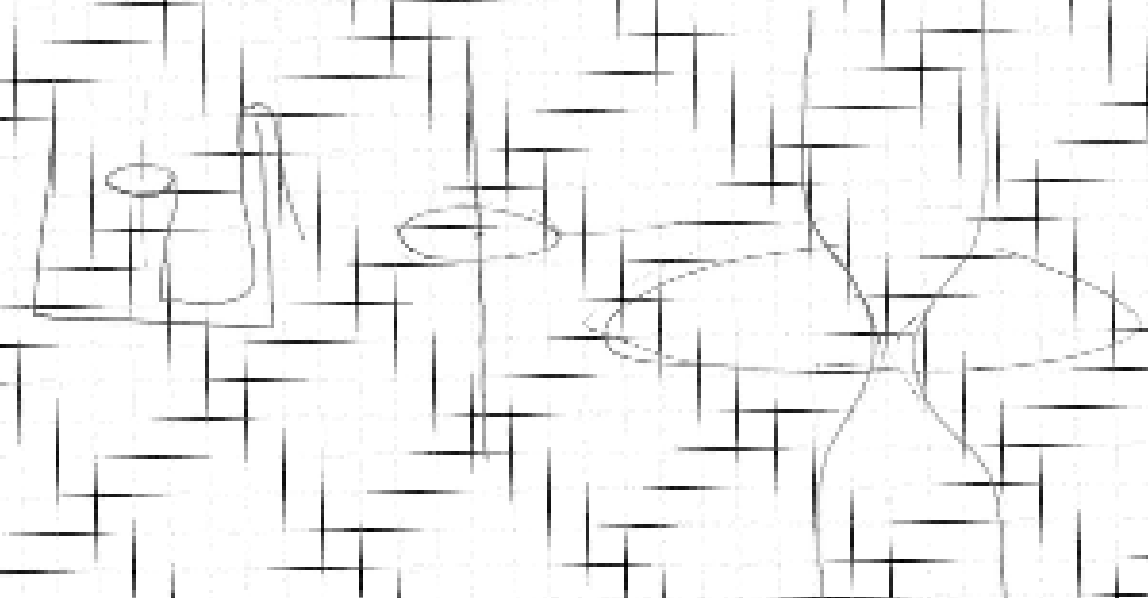
TITLE H₂O₂ Chromatographic Calibration

Draw Page No. _____

With the new discharge



increase in H₂O₂ : 10 min each addition
24.7%

H₂O₂ std solution prepared by Phillips

To Page No. _____

Witnessed and understood by me

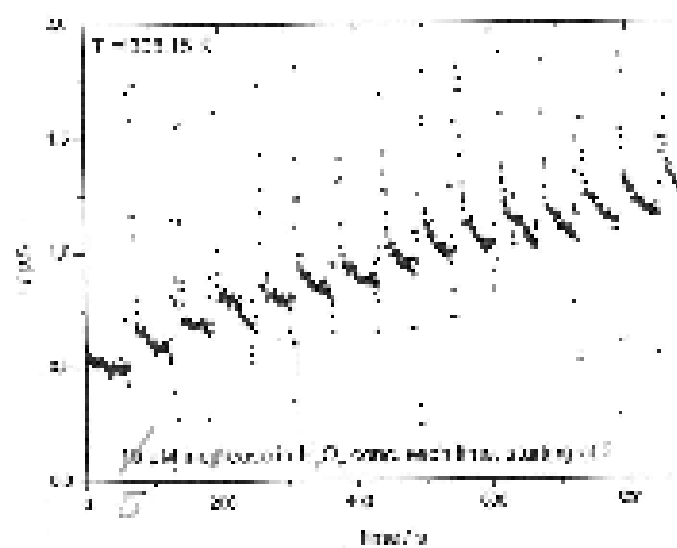
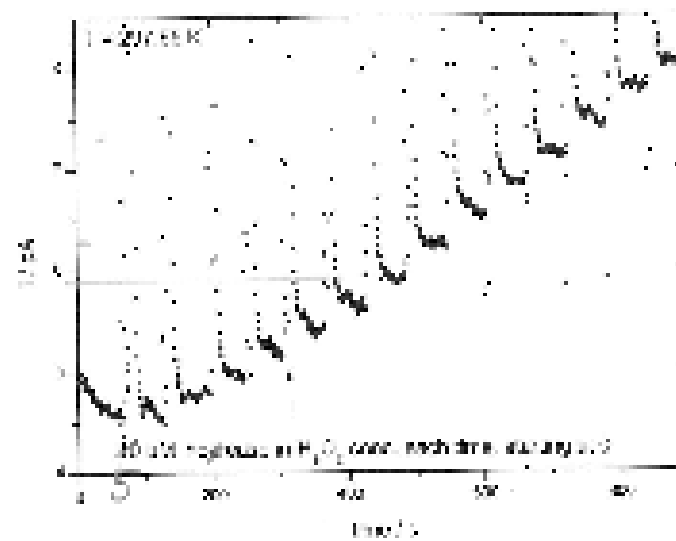
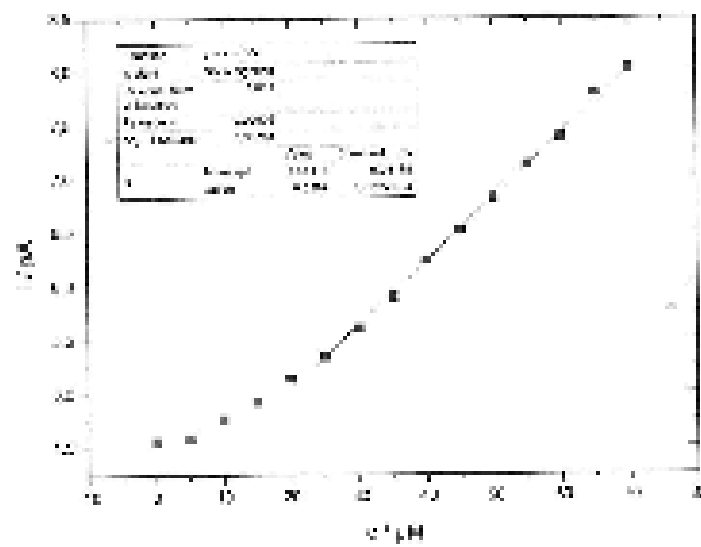
Date

Initiated by

Received by

Date

From Page No. _____



To Page No. _____

We used and understood by me

Date =

Invented by

Date

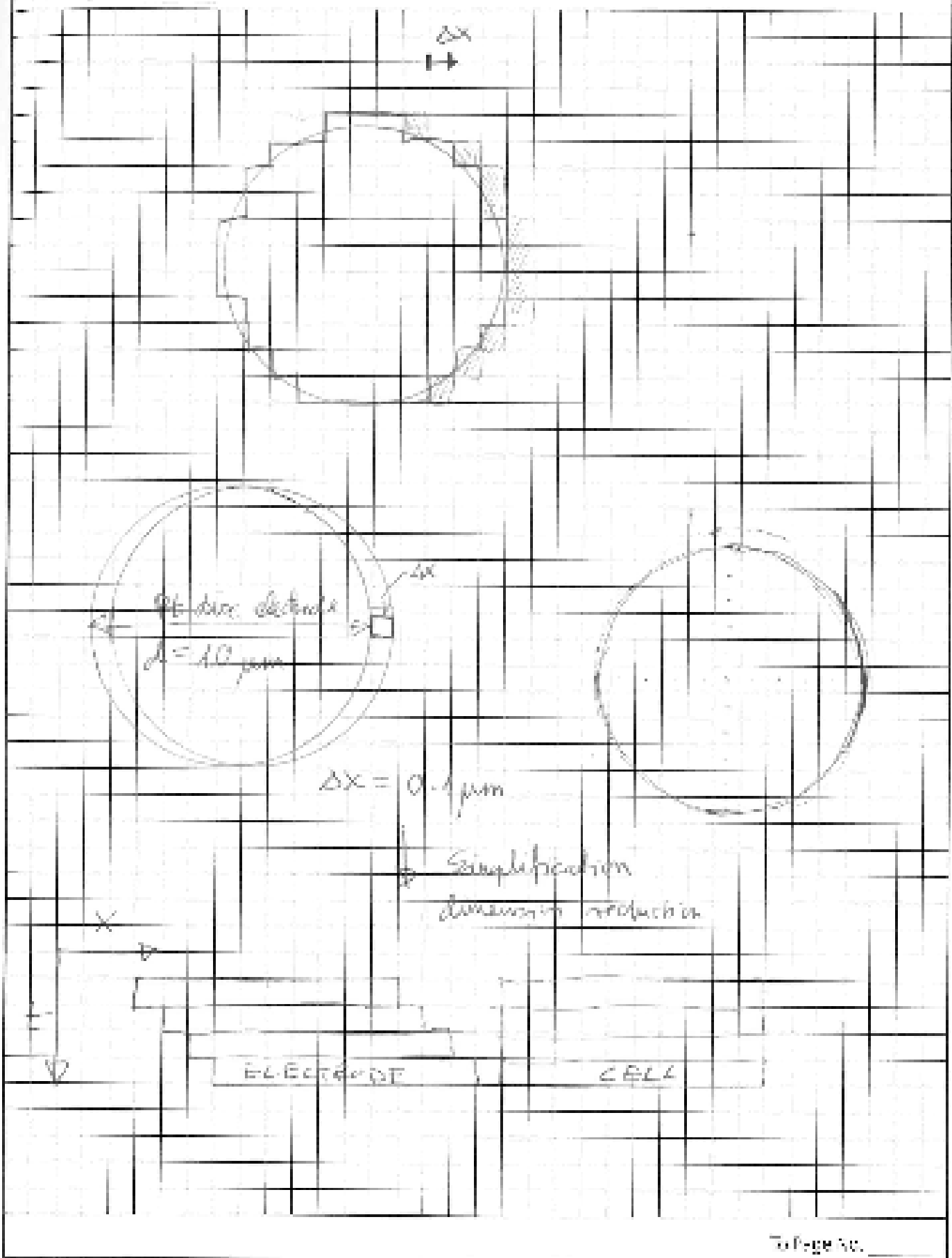
Recorded by

[illegible]

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مراجعة

Page Page No.



To Page No. _____

Witnessed and understood by me

Date

Received by

Date

Form Page No. _____

E1-7

45 μ m X 45 μ m2 μ m/2per chip : 2 μ m

26 scanlines

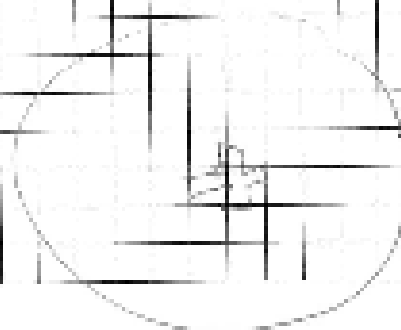
X: 0-45

(46) rows

8

Lines in the file: 13026

$$\frac{13026}{46} \approx 283$$

40 μ m45 μ m X 45 μ m

50

16 Page No. _____

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Reviewed by

Reviewed by

Date

From Page No.

91

180526

1 dat

extra

TPA

or
DTA



cell attached to plate and stopped along
outside during the run

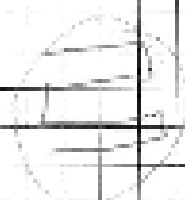
FA - 11.4

0.1 ml

TPA

+ 5 μ l

or 2 ml



1 μ M TPA for the cells
in DMSO

To Page No.

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Invented by

Date

Recorded by

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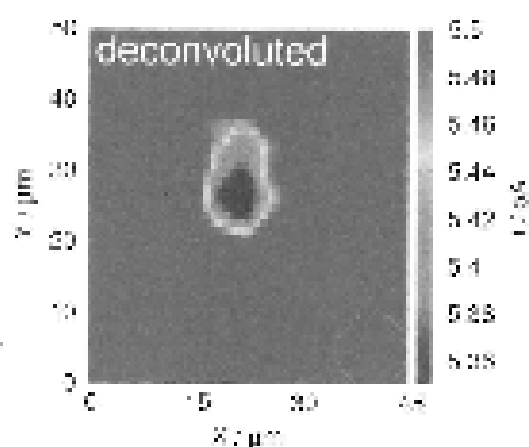
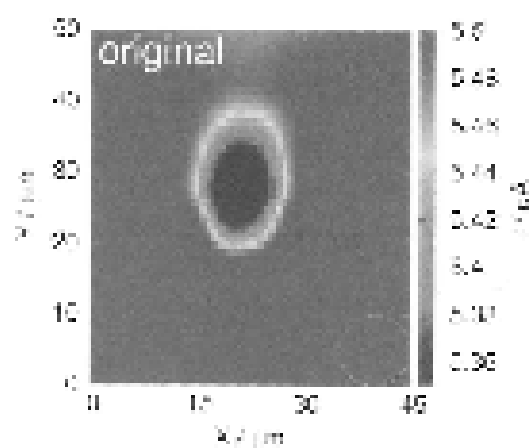


Figure 1

Glen Harrison
galactic disk

Witnessed and undersigned by me:

Date: _____

From Page No. _____

1, Wash cell culture 2ml PBS

addition

cells

at 2 ml PBS in

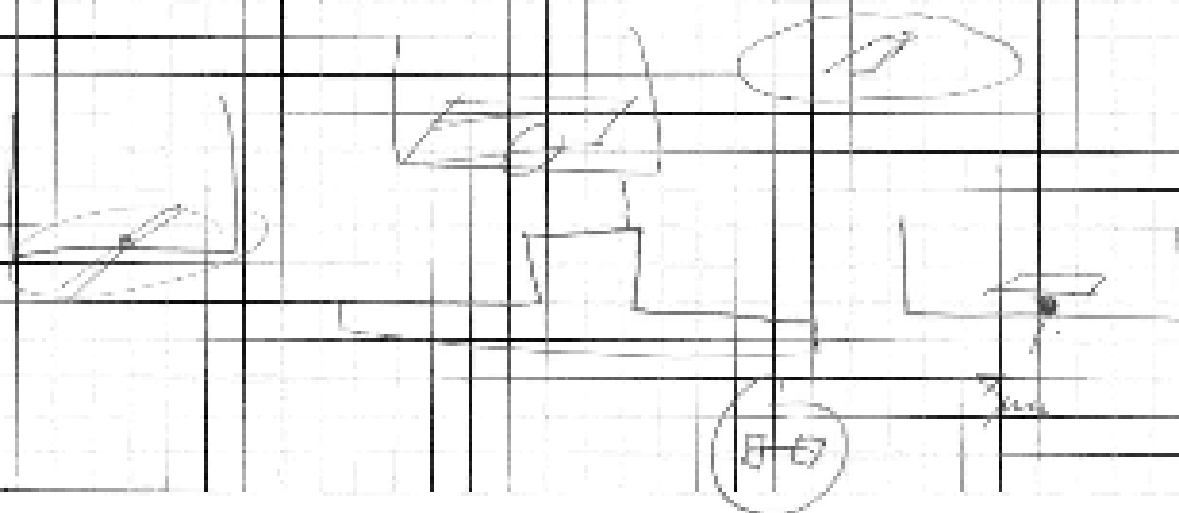
2, Place electrodes

3, Load for cells (physical mode)

4, Set origin

5, Clean electrode 970 mV (700 pA) for 10 seconds

1000 TPA



To Page No. _____

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Date

Form Page No.

5: recorder
6: fast comb 10 μ m 10 sec 5 μ m / 10

10 μ m X 50 μ m
1 μ m X 1 μ m steps 10

577:1 put 0-510

5:

5 μ m
magn

6: last 20 for
2 electrode
5 μ m / 10
51 X 51

7: even better 50-5 μ m



last photo: 0.07

8:

electrode focus 5 μ m
wire edge 5 μ m

2.5 μ m ft

last 10
step 10/10

Results: page 55



removing
in 0.1 sec

Removal

T. Page No.

Where I and one read by me

Date

180627

Entered by

Barred by

Date

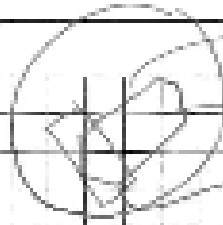
III. Image of broken microscope slide cover

Flare-Up

From 1994 to 1996

90° edge

Zahl Linsen in einer



F12

TOX-TO	100	100
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10/24/15

Alfred

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Ex 3



Food	Clothing
------	----------

E4.4



And	And
-----	-----



Ans. $\frac{1}{2}$ and $\frac{1}{4}$ are the answers.

Ex 1



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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50 m/s

ELe



10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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12/22/15

Ed	73	Age	76
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Fr. 19. Ash. 8

Ed-32 - book 13

5/2/9

Ad/Ad

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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1-33	Praxis 1	1/4
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~~4-11-2014~~

T: Day - Hi

What is not understood by me

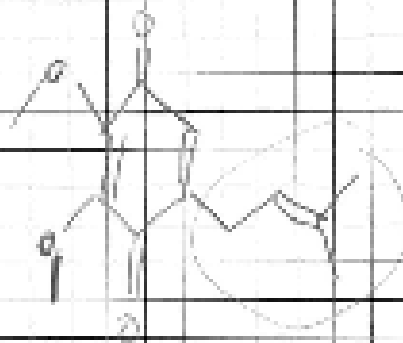
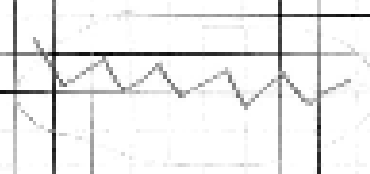
Case

Invited by

code is

180628

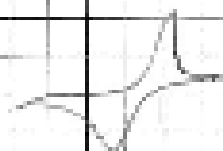
Form Page No. _____

 Q^{2+} activity of deethylquinone in organic solvent(Valentin Kirsche (EWW)
Lec 11 was his supervisor)Coenzyme Q_{10} 

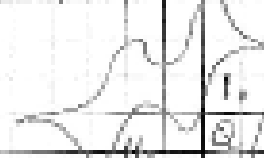
deethylquinone

Coenzyme Q_{10} aprotic \rightarrow not proton donating solvent

protic solvent:



aprotic:

 Q^{2+}/Q^{\bullet}

11
11
compare: SWV \rightarrow SWV
activity instead of conc.
temp!

T. Page No. _____

Where I and understood by me

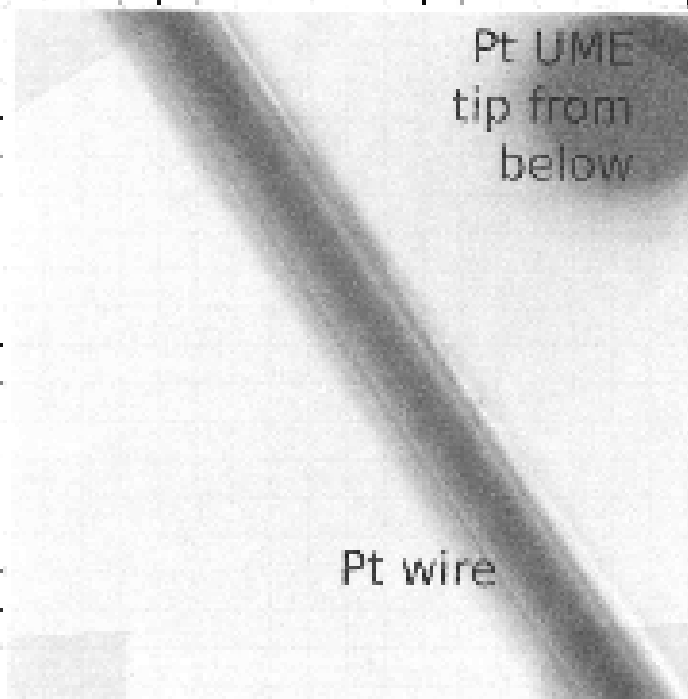
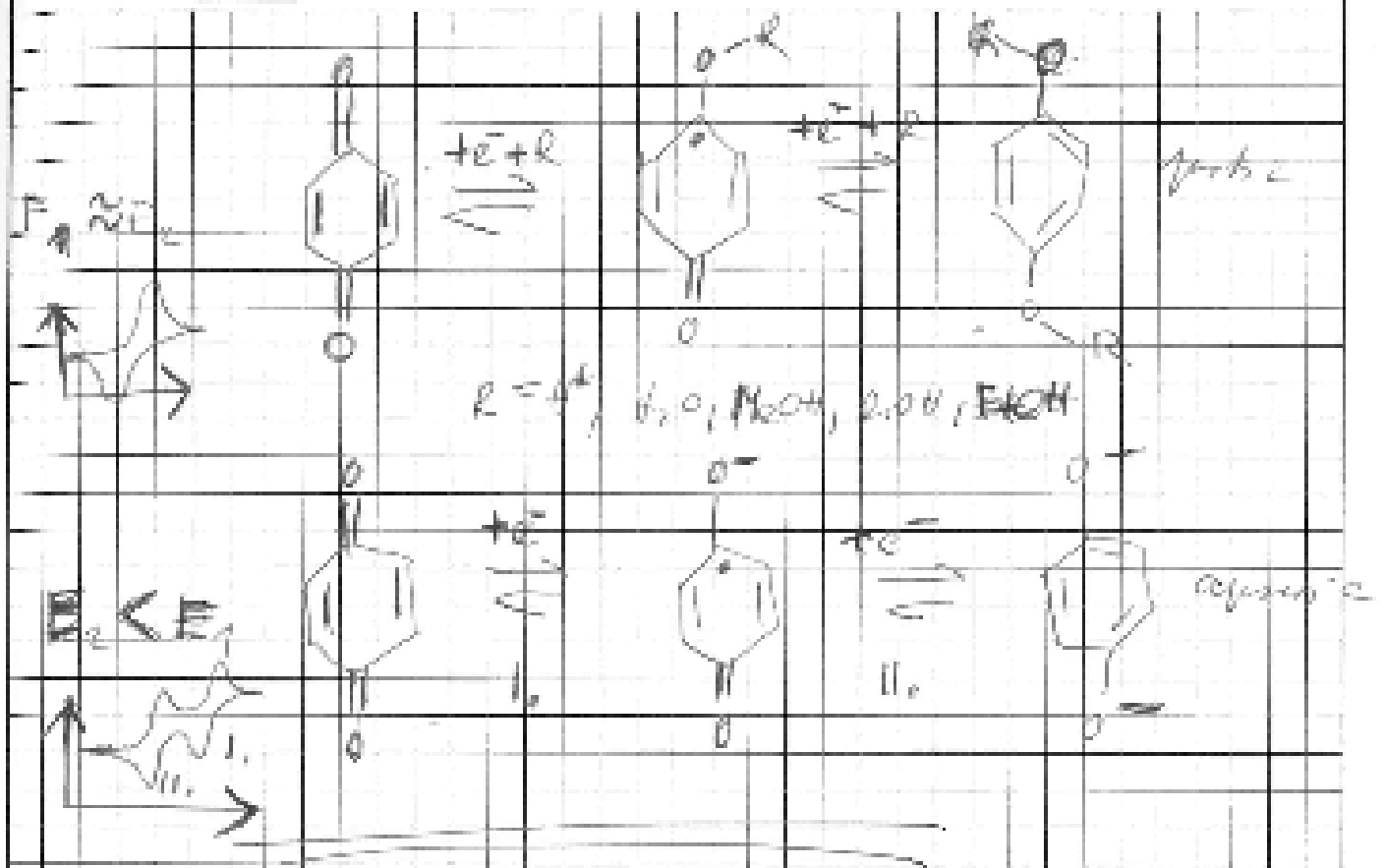
Date

Exponentially

Recorded by

Date

From Page No. _____



referred to on
page 19

To Page No. _____

Witnessed and understood by me

Date

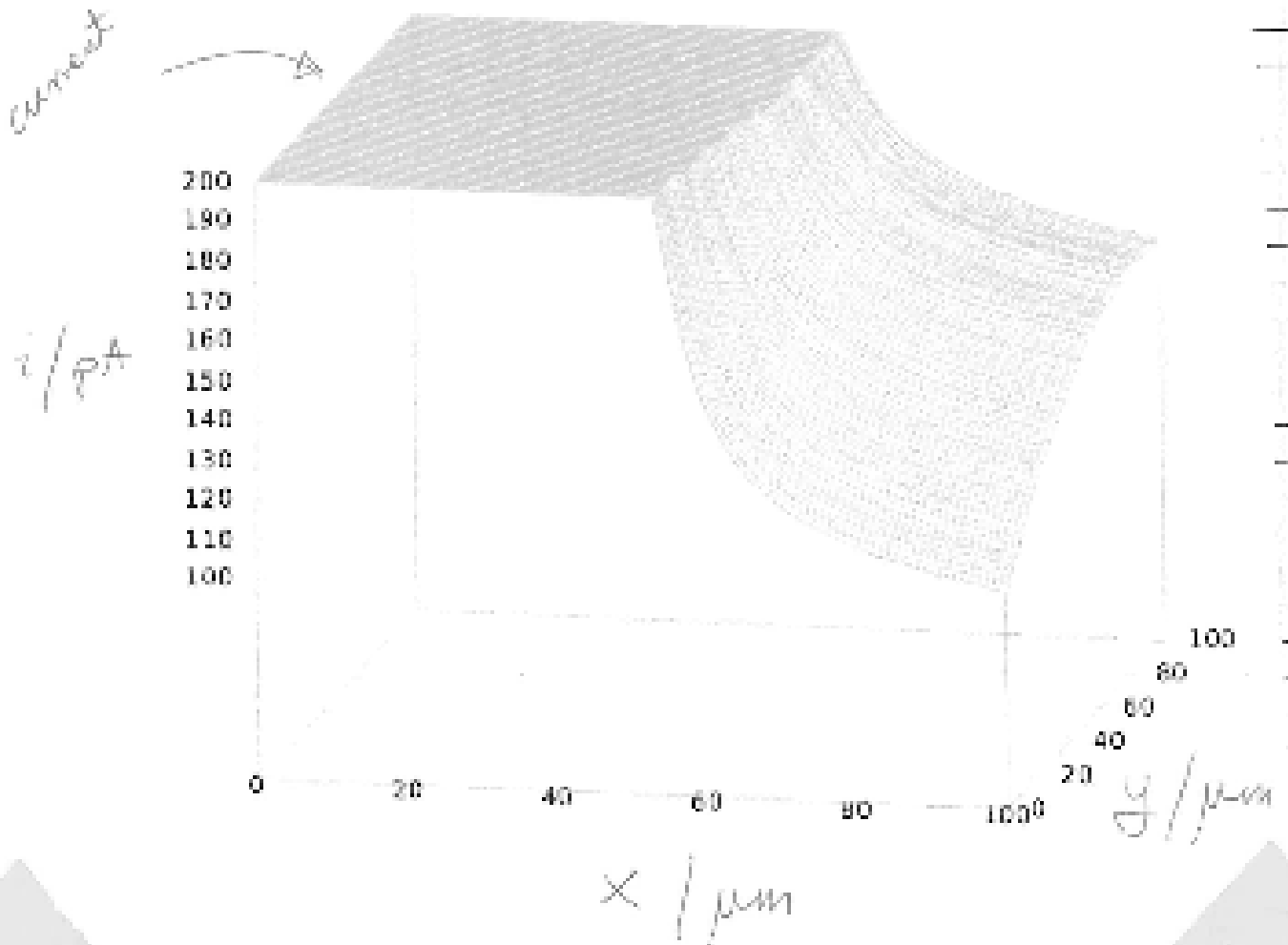
Entered by

Date

Recorded by

'32_xpt_separated_lines.tbl'

current is out of range!



Set of the scans from 130628 are clipped at $\sim 200 pA$!

Witnessed and understood by me _____

Date _____

Reviewed by _____

For cause by _____

To Page No. _____

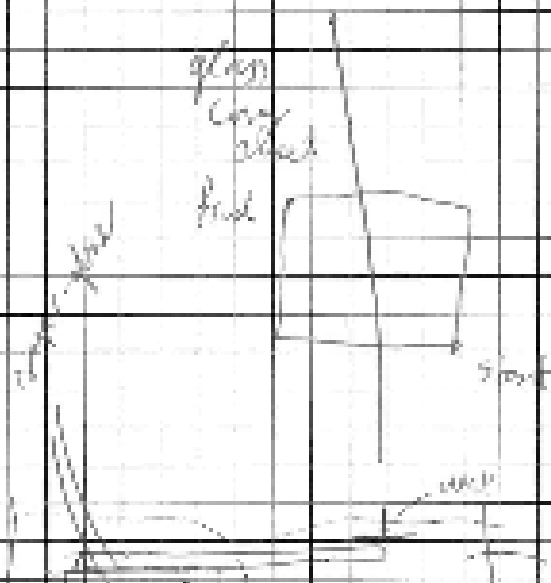
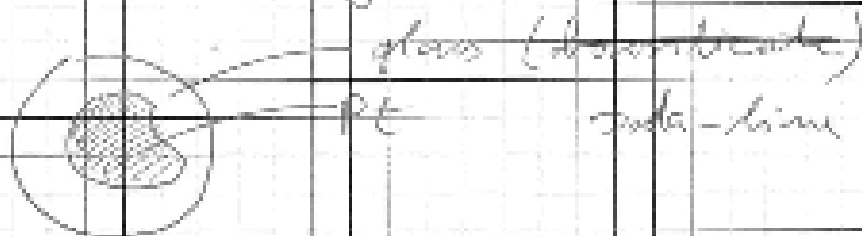
Date _____

Form Page No. _____

Butter Instrument P-1000

Program 88

120704. Scanning with electron # 8 prepared yesterday



100 points X 100 points
100 μm X 100 μm
10 μm 5 μm/s
fast scan scanning speed

2 volt lamp in 0.1 MCL
E = 300 mV/m. 1/100 μm

d = 100 μm glass cover sheet

gain : 20 mV / μm

To Page No. _____

Witnessed and understood by me

Date

Invented by

Date

Reviewed by

Continued on next page

From Page No. _____

Continued from previous page

13070406 EA 1

finish: Cell 13070406-001, 117-

13070406
130704065 $\mu\text{m}/\text{s}$
fast cut

13070406 EA 2

10 $\mu\text{m}/\text{s}$

meander

Pt wire
glass sealing

connection

glass cover sheet

Pt wire
In 0.1 N KOH

glass cover sheet

Pt wire



III.5 Auting microelectrode tests

From Page No.

Hannan instruments

pH meter

pH 2.14

microelectrode pH meter

pH 4

-250

-550 mV

30mV / 3

26mV / pH

pH	fresh E/mV	2.14 E/mV
4	-210	
7	-320	
4	-520	
4	-260	
4	-260	
4	-260	

fresh E/mV	2.14 E/mV
-210	
-320	
-520	
-260	
-260	
-260	

Buffers were kindly
provided by Katherine

4	-210
7	-320
4	-520

-260

4 -260

11mV / 3

39mV / pH

4	-260
4	-260



To Page No.

Witnessed and understood by me

Date

Received by

Date

1000 Writing - a script to fix the memory algorithm

Page No. _____

Problem :

X	Y	Z
0	0	
1	0	
2	0	
3	0	
4	0	
0	1	
1	1	
2	1	
3	1	
4	1	

1st line

2nd line

START

The direction should be reversed for the even numbered lines, like this:

X	Y	Z
0	0	
1	0	
2	0	
3	0	
4	0	
0	1	
1	1	
2	1	
3	1	
4	1	

Page No. _____

Witnessed and Understood by me

Date

Entered by

Entered by

Date

180703

HECA



From Page No. _____

fe2m.sh "Font code to meander"

inputs : 1, # of point points in a line (x)

example from the left: $x=5$

2, # of lines (y)

example from the left: $y=2$

```
usage: fe2m -x 5 -y 2 -f test.txt
       -o test_o.txt
```

bash arguments : getopt

```
while getopt u:d:p:f:q:wn
do
case "$OPTARG"
in
u) USER=$OPTARG;;
d) DATE=$OPTARG;;
*)
break
done
```

↘ finished script on next page!

o Page No. _____

Witnessed and Understood by me

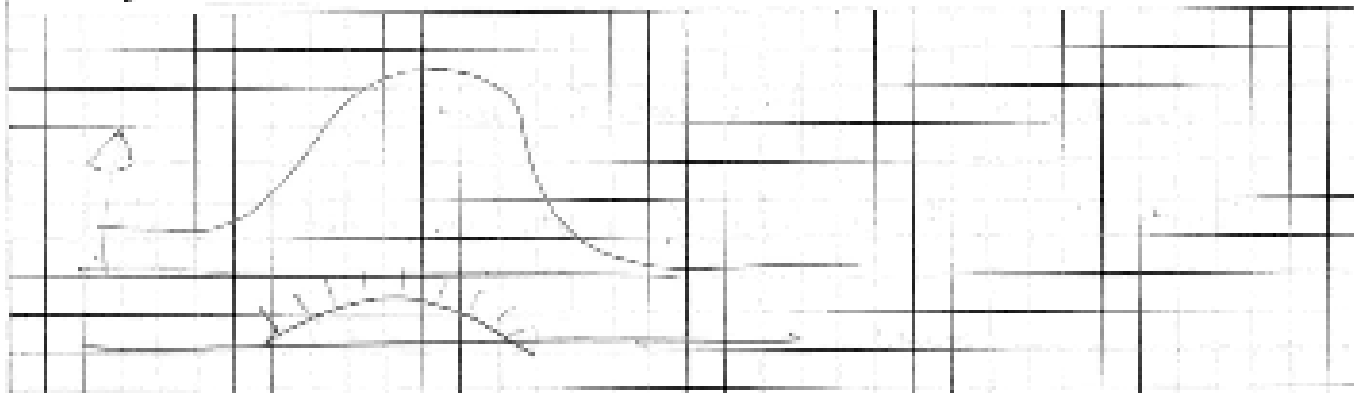
Date

Reviewed by

Date

Sincerely

Form Page No. _____



```

//this/branch

```

```

//XXXXXXXXXX

```

```

while (1) { // go 0-1

```

```

do

```

```

loop "01"

```

```

//end 0-1 to

```

```

x| = 1

```

```

x = 0.01

```

```

shift # past argument

```

```

shift # past value

```

```

if

```

```

{ // yes

```

```

{ // yes

```

```

shift # past argument

```

```

shift # past value

```

```

if

```

```

{ // yes, 100%

```

```

input 100%

```

```

shift # past argument

```

```

shift # past value

```

```

if

```

```

{ // yes, 100%

```

```

output 100%

```

```

shift # past argument

```

```

shift # past value

```

```

if

```

```

{ // yes, 100%

```

```

XXXXXXXXXX "01" // yes, 100%

```

```

shift # past argument

```

```

if

```

```

done

```

```

done

```

```

//end -- //XXXXXXXXXX // XXXXXX past argument

```

```

//end -- //XXXXXXXXXX // XXXXXX past argument

```

```

//end -- //XXXXXXXXXX // XXXXXX past argument

```

```

//end -- //XXXXXXXXXX // XXXXXX past argument

```

```

//end -- //XXXXXXXXXX // XXXXXX past argument

```

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//end -- //XXXXXXXXXX // XXXXXX past argument

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//end -- //XXXXXXXXXX // XXXXXX past argument

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//end -- //XXXXXXXXXX // XXXXXX past argument

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//end -- //XXXXXXXXXX // XXXXXX past argument

```

To Page No _____

Witnessed and understood by me _____

Date _____

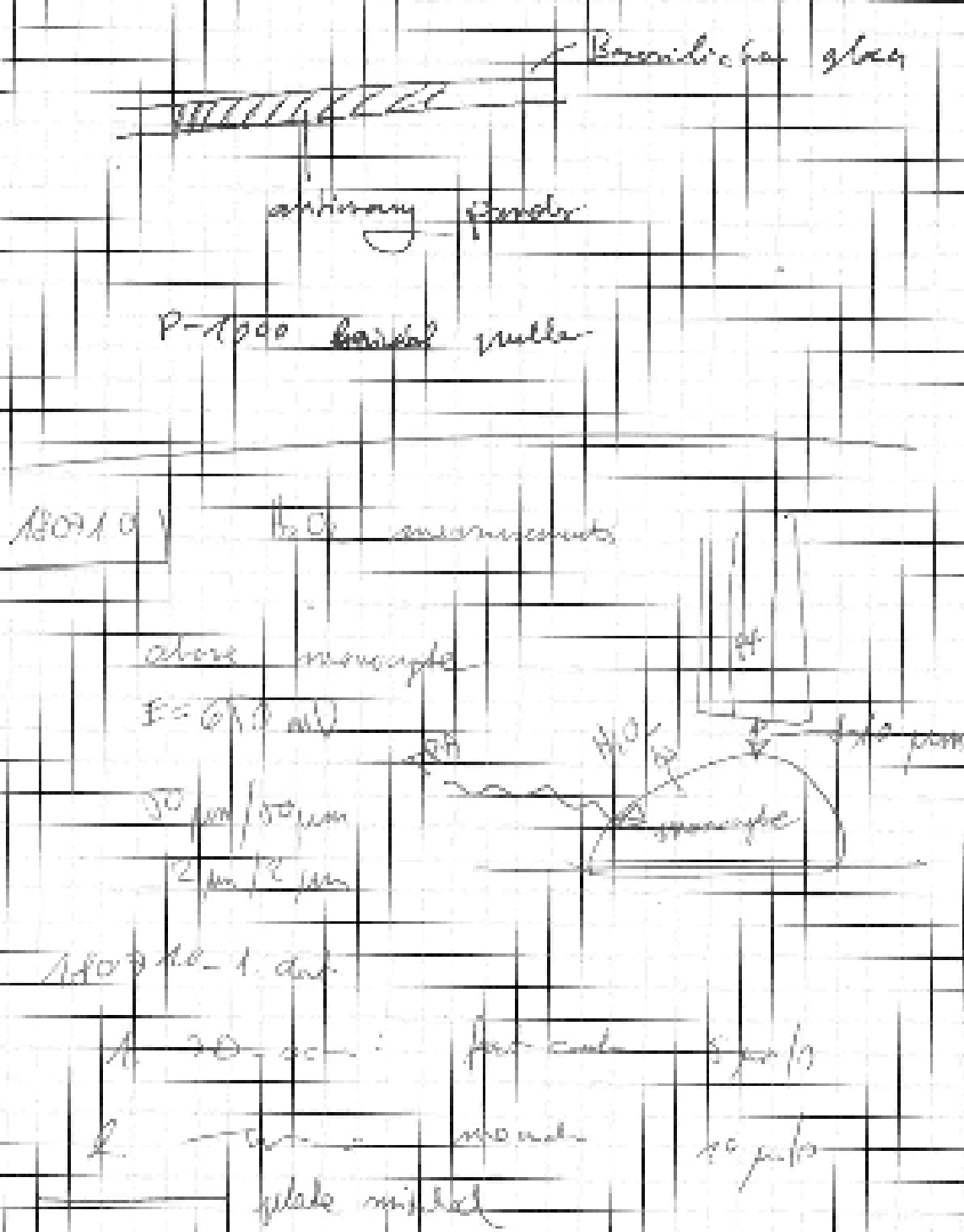
checked by _____

Date _____

Reviewed by _____

Topic: Trying out a new technique to fabricate Si microelectrodes

Page No. _____



To Page No. _____

Witnessed and understood by me

Date

Invented by

Date

Reviewed by

TT-3 Testing autologous microdermalles prepared yesterday

Test Page No. _____

	$E @ pH=7$	ΦBS	(mV)
1			
2	-403	16	
3	-384		
4	-378		
5	-362		
6	-352		
7	-350		
8	-350		
9	-388		
10	-377		

9/10

62 pins = 10 μm (40X)

all	bulk
-415	-413
-416	-413

17th	bulk
24	cell
25	bulk

+400

21	bulk
35	cell (monocyte)

41	4:30
52	6:30

-430 mV

-636 mV

300 μl

1N NaOH

To Page No. _____

Witnessed and understood by me

Date

Received by

Date

Received by

TITLE Attempting to image yeast cell CO₂ output

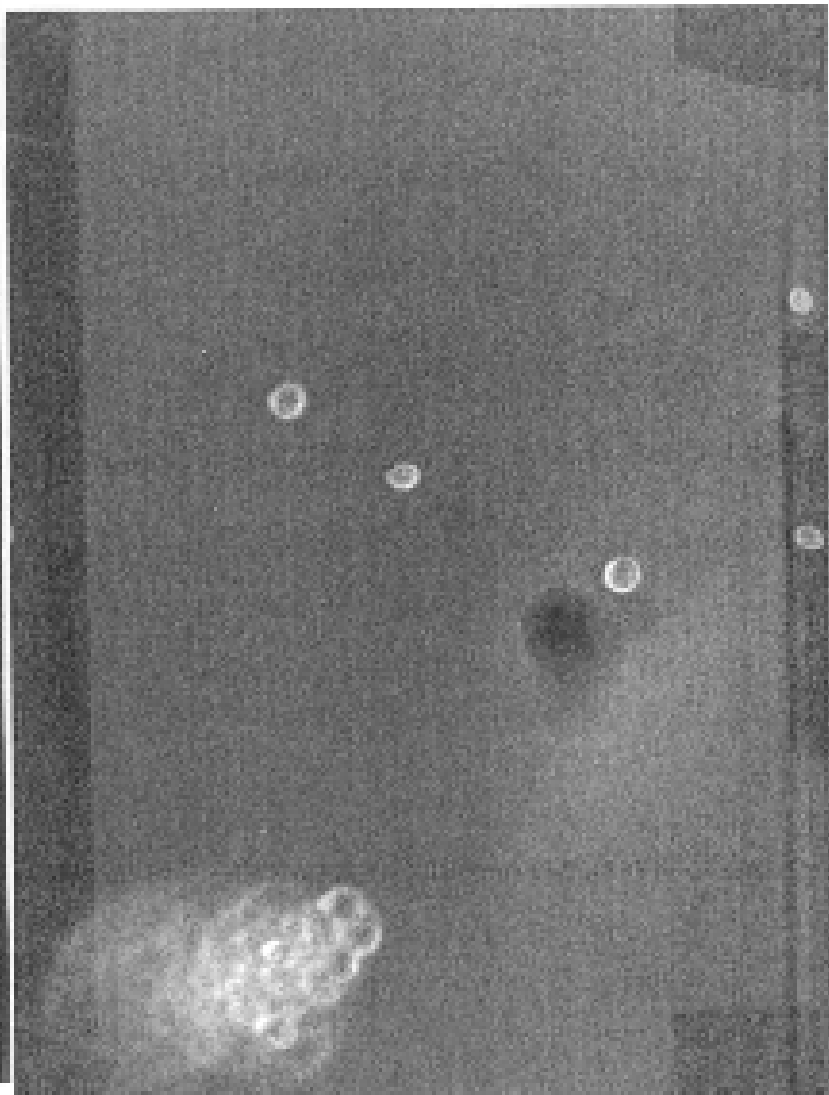
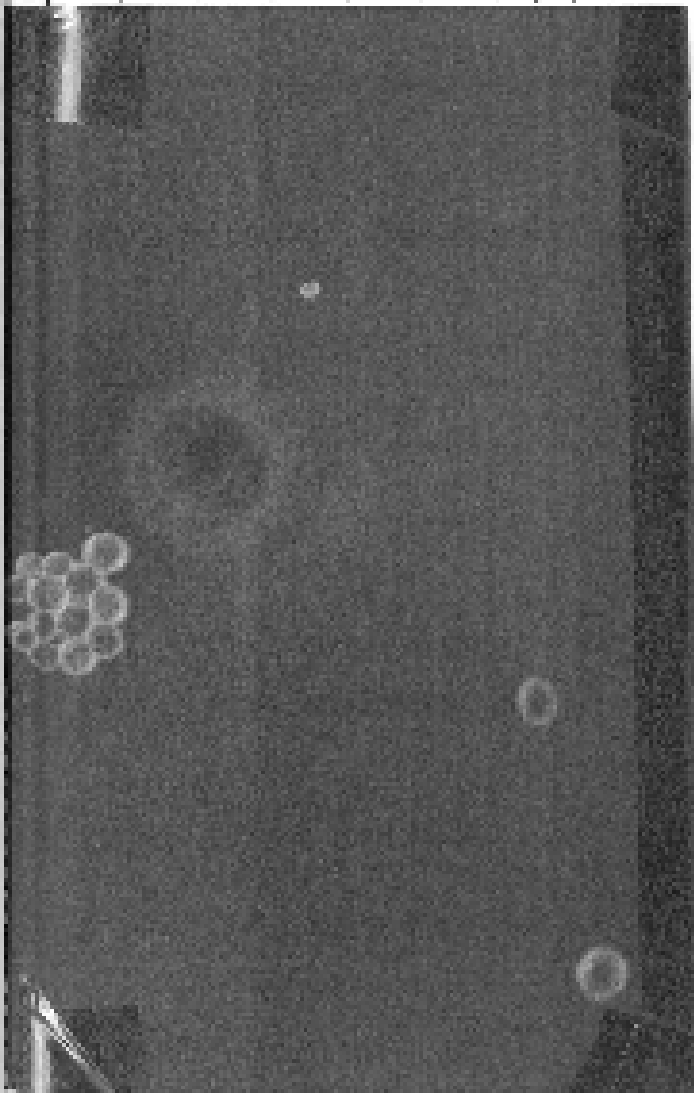
Page Page No

Broth : 2g glucose in 100 ml dist.

Yeast : "Oxoid Yeast Universal" from Edebo

I could not observe any pH change above the yeast cells.

(pH electrode #7 broke)



Recorded by

11 LL measuring oxygen above the
human macrocytes

Page No. _____

180716-01

E1-3

incomplete

monocyte 6 days old

100 μ m \times 100 μ m area

100 μ m \times 100 μ m width

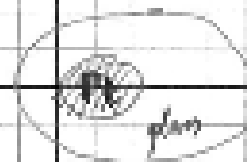


1 μ m \times 1 μ m step size

10 μ m/s scanning speed

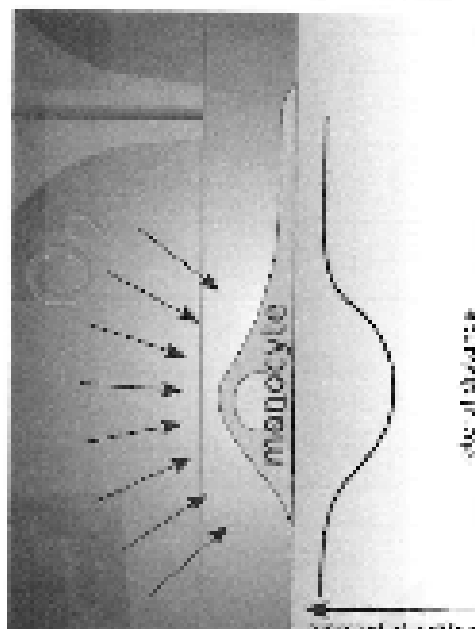
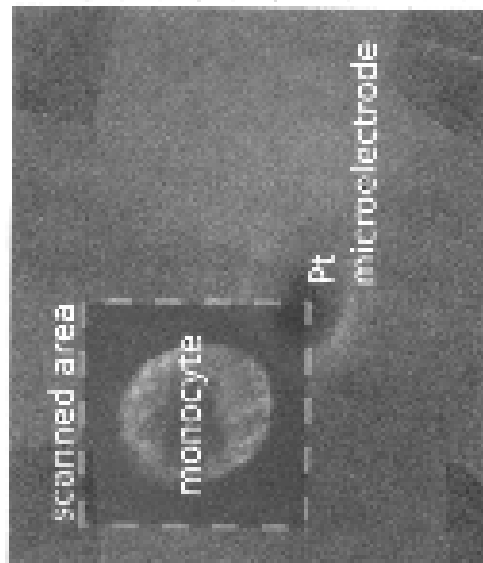
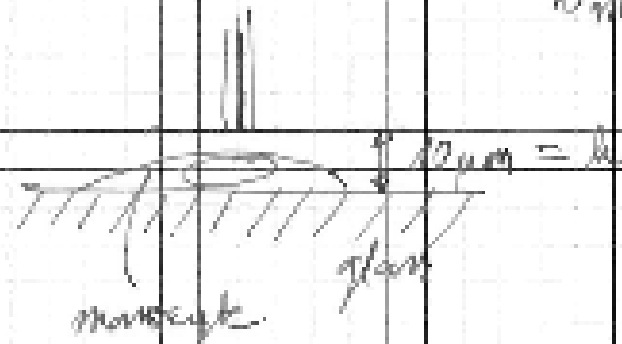
meander algorithm

electrode #3



$E = -700$ mV vs. quasi-reference
(calibrated in this way)

media + electrolyte: PBS
10 mM glucose



NO PHOTOCOPYING OR REPRODUCTION

To Page No. _____

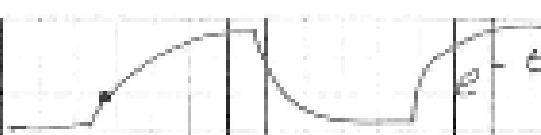
Date

Invented by

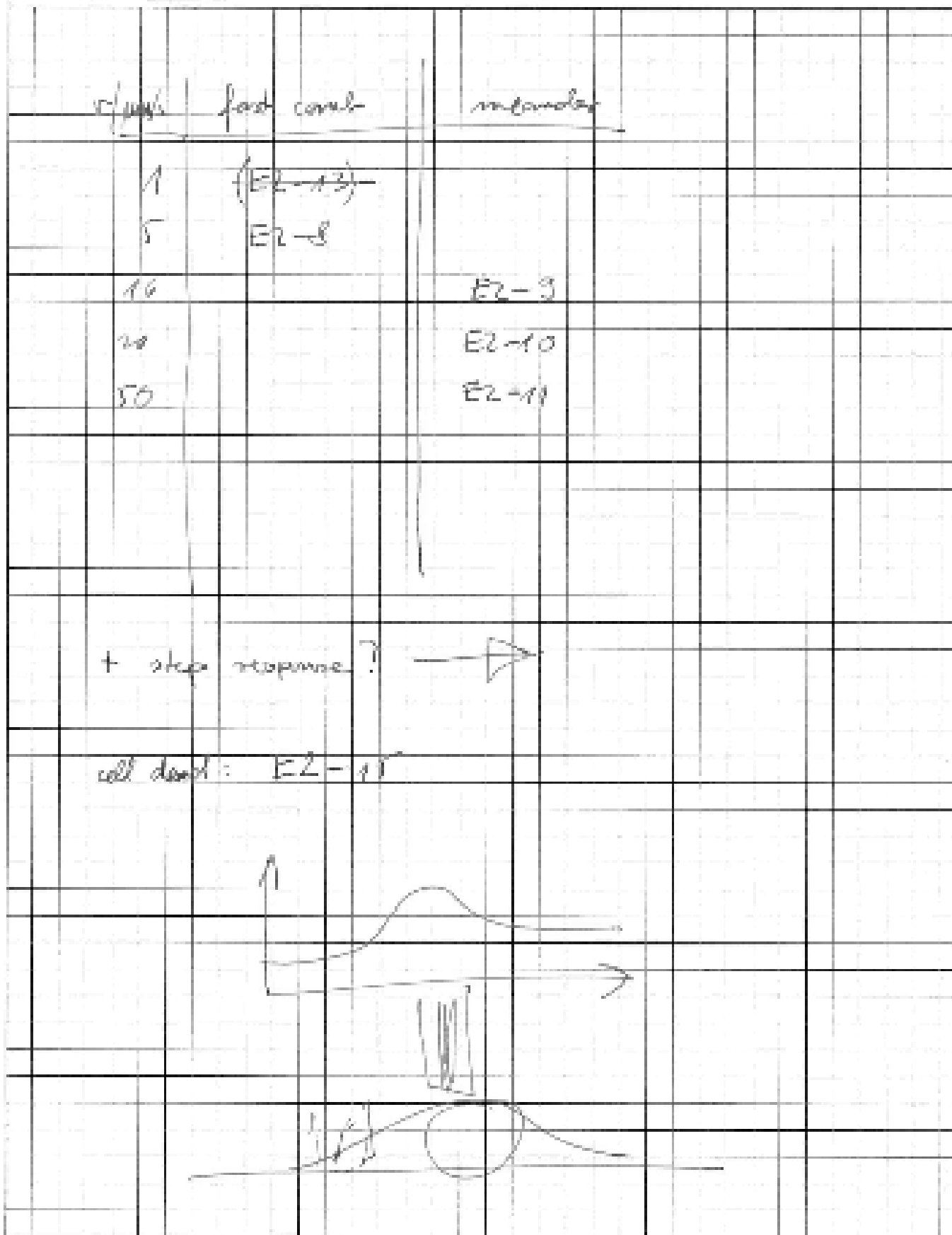
Date

Recorded by

180716

From Page No. _____			
E1 - 3	40 μ m / 40 μ m 41 x 41		
	5 μ m/s	meander	incomplete
	Start: 3 Finish: 4	(Cell 110216 003.TIF)	
E1 - 4	40 μ m x 40 μ m 41 x 41	incomplete	
	1 μ m/s	fast count	
E1 - 5	40 μ m x 40 μ m 41 x 41	$R = 3.5 \mu$ m	
	10 μ m/s	meander	
E2 - 1	80 μ m x 80 μ m 81 x 81	0.5 μ m/s fast count	
meander cell $Z = -26.71 \mu$ m		E2 - 8	40 x 40 41 x 41 fast count 1 μ m/s
E2 - 11 - 11	80 μ m/s meander	E2 - 8	40 x 40 41 x 41 meander 40 μ m/s
Witnessed and understood by me		Only 401, because it's 40 times faster Invented by _____ Recorded by _____	
Date _____		To Page No. _____ Date _____	

From Page No. _____



To Page No. _____

Witnessed and understood by me

Date

Invented by
Received by

Date

+ 20 μ l of 100 mM HCl

$$V_{\text{photon}} = 2 \text{ mV}$$

$$20 \cdot 10^{-6} \text{ dm}^3 \cdot 0.1 \frac{\text{mol}}{\text{dm}^3}$$

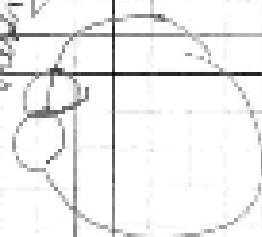
275

2. $\frac{1}{2} \times 10^{-7}$ cm

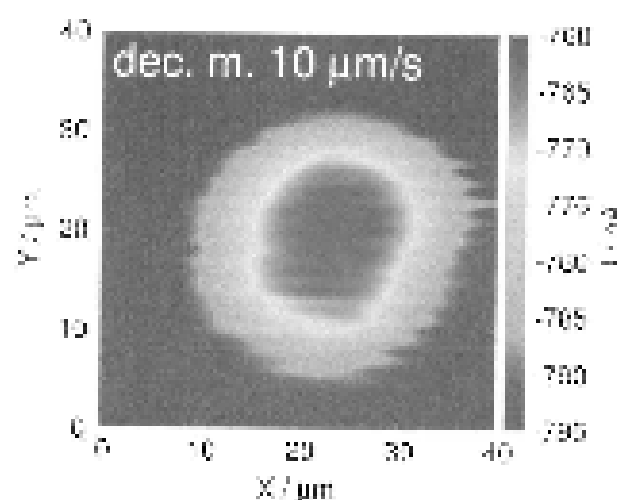
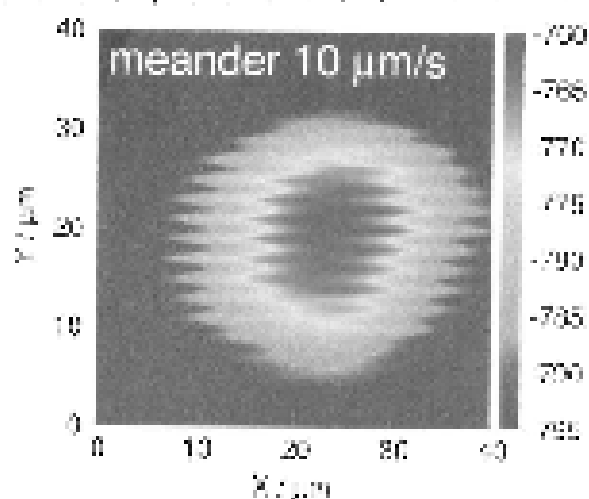
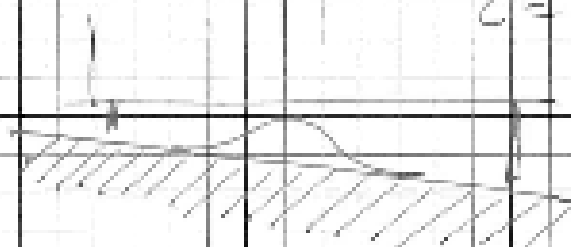
2/10/6 Prod

2. $\mu_{\text{mol}} = 0.002 \text{ mol}^3$

$$C = \frac{0.00002 \text{ mol}}{0.002 \text{ dm}^3}$$



$$C = \text{only } H_2O_2$$



Oxygen partial pressure / atm

E2-2

From Page No. _____

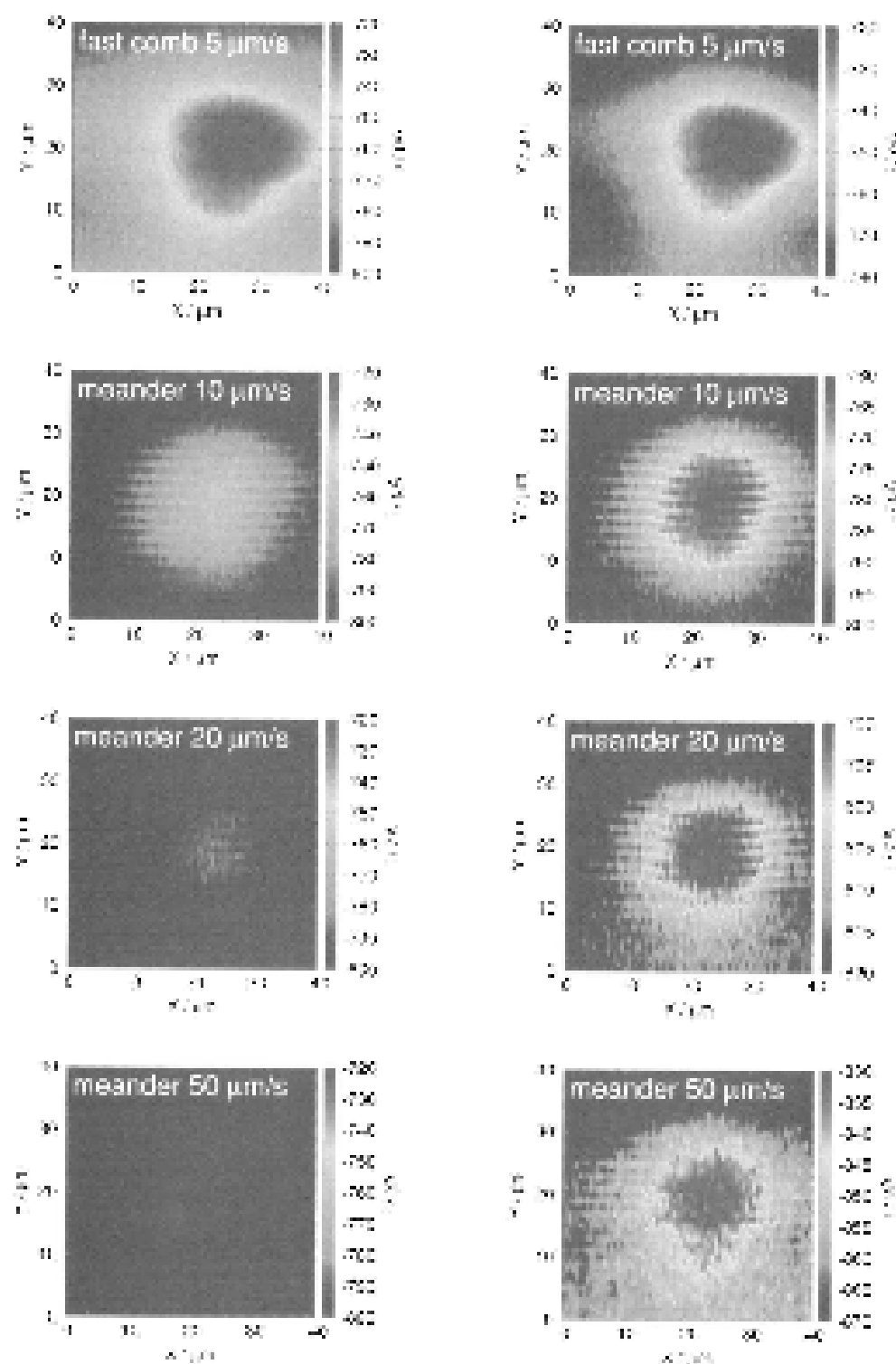


Figure 1: Glucose concentration current above a human microorganism ($h = 10 \mu\text{m}$) relative to the glass bottom of the Petri dish. Working electrode: $d = 10 \mu\text{m}$ Pt-UVF-763 (3.5), $E = 100 \text{ mV}$ vs. Ag/AgCl quasi-reference electrode. Working electrolyte: PBS + 10 mM glucose. Date: 2018/7/15. Left column: fixed scale: 500 pA to -200 pA . Right column: auto-scale.

16 Page 16/16

Worked and understood by me

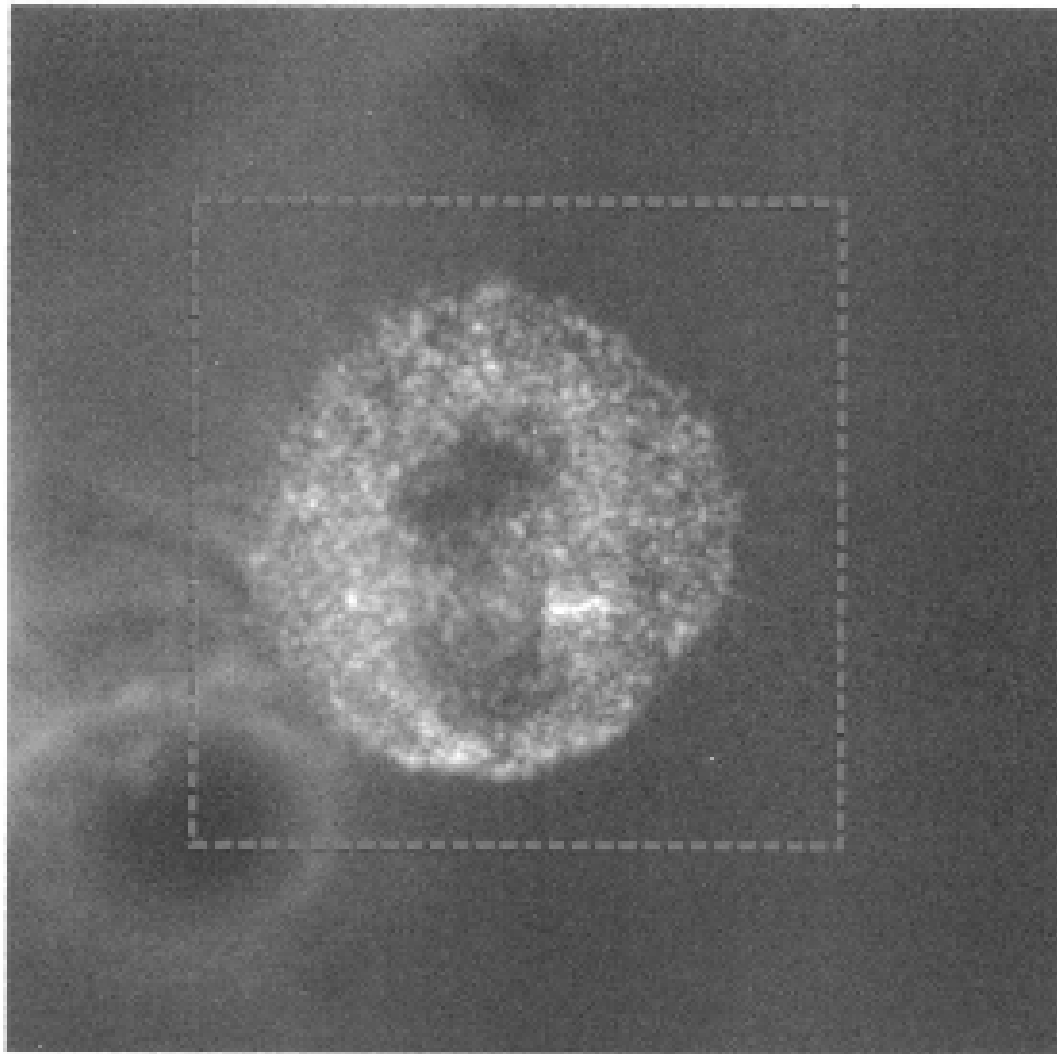
Date

Invented by

Date

Received by

From Page No. _____



To Page No. _____

Witnessed and undersigned by me _____

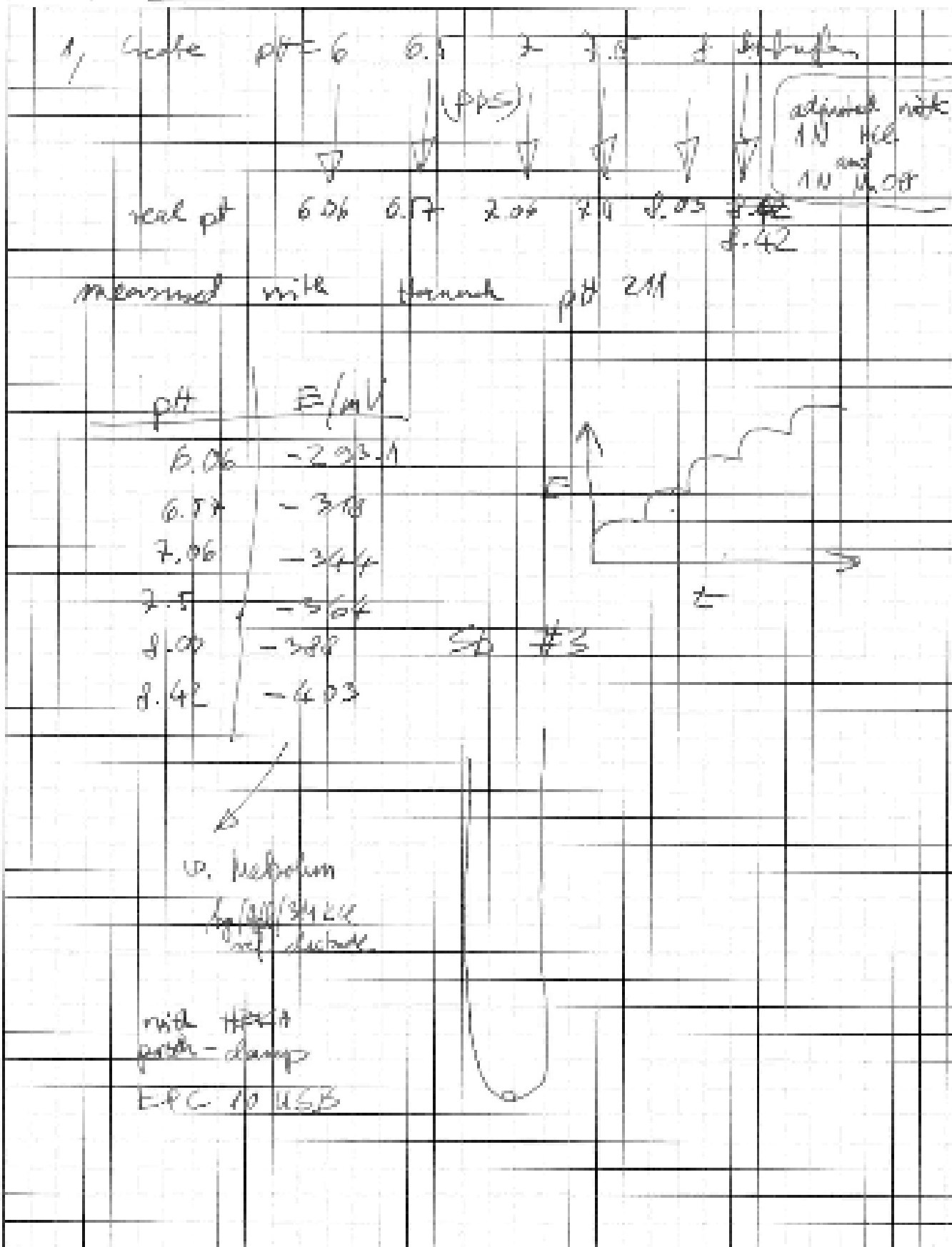
Date _____

Invented by
recorded by _____

Date _____

11.3 Slc microelectrode calibration

From Page No. _____



Witnessed and understood by me

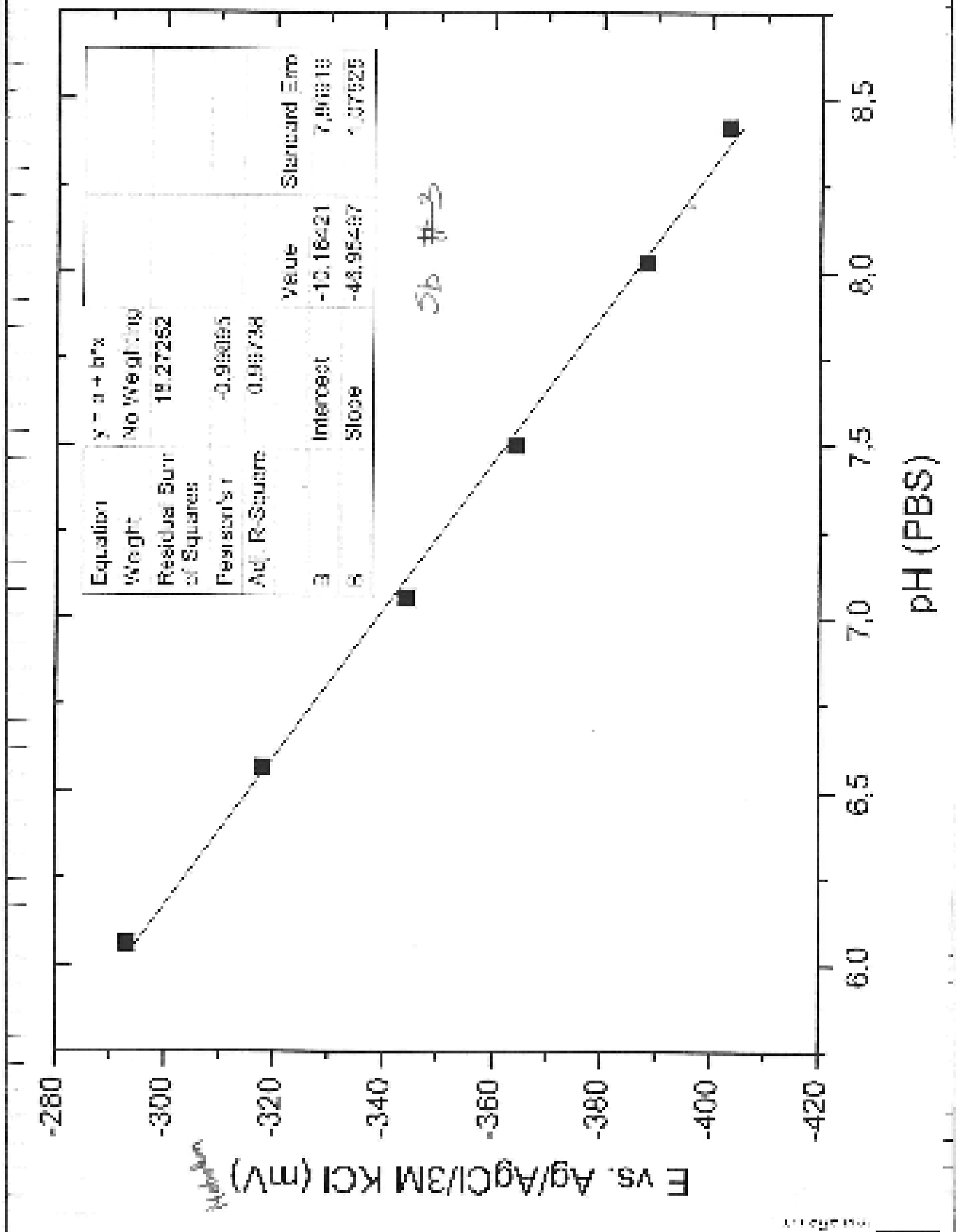
Date

Invented by

recorded by

To Page No. _____

Date



Witnessed and approved by me

Date

Entered by
Reviewed by

Date

From Page No. _____

pH	E (mV) vs Ag/AgCl quasi-ref. (de-aerated silver wire)
6.06	-315
6.14	-336
7.06	-358
7.5	-377
8.03	-397
8.42	-415

The slope is similar to that ^{the one} measured ^{against} with an $\text{Ag}/\text{AgCl}/\text{KCl}$ saturated ref. electrode.

The potentials are shifted by about -20 mV, as a consequence of the shift in the potential of the reference half-cell.

The minor difference ⁱⁿ pH of the buffers doesn't seem to affect the response noticeably.

to Page No. _____

Witnessed & acknowledged by me

Date

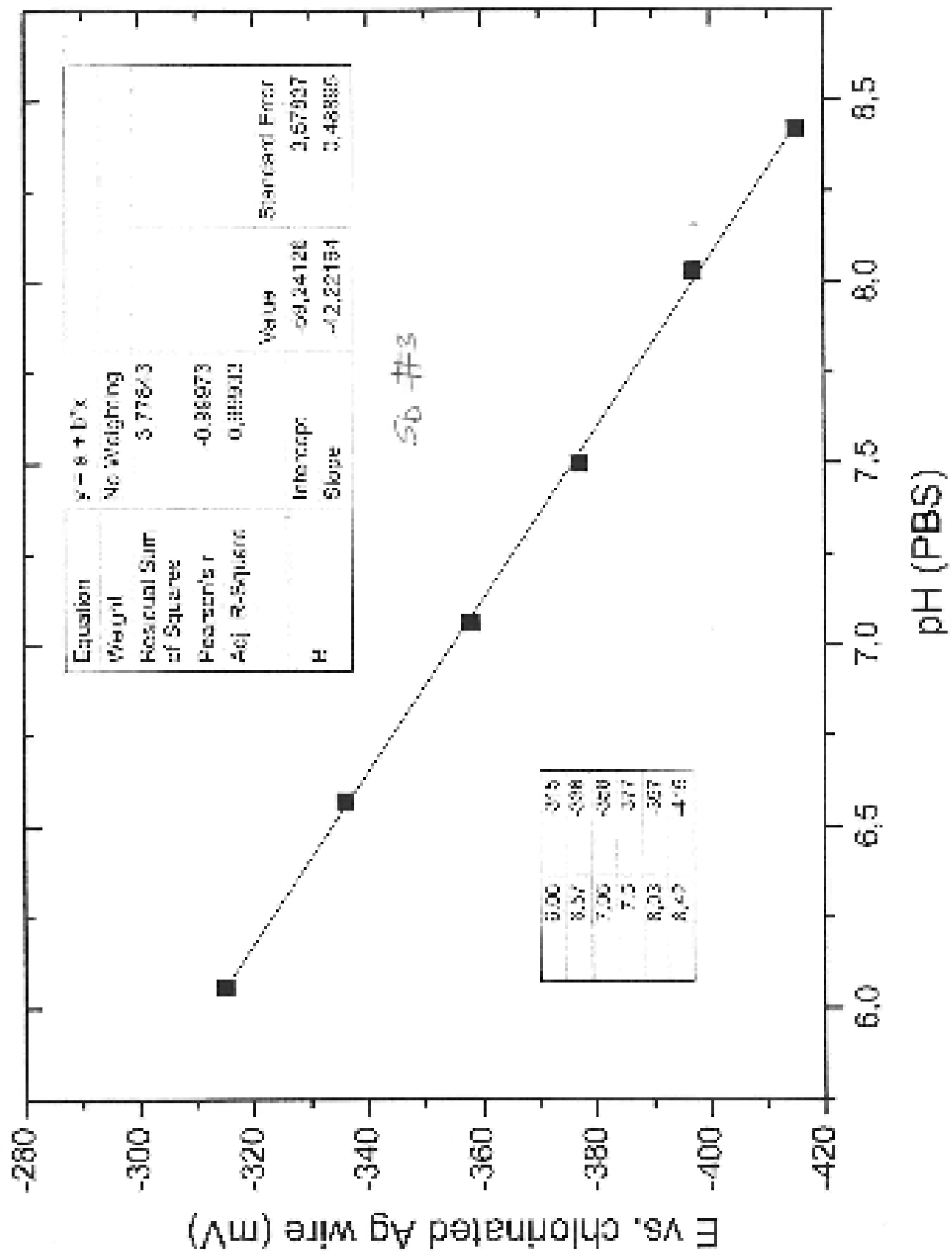
Invented by

Date

Recorded by

TITLE _____

From Page No. _____



Witnessed and understood by me _____

Date _____

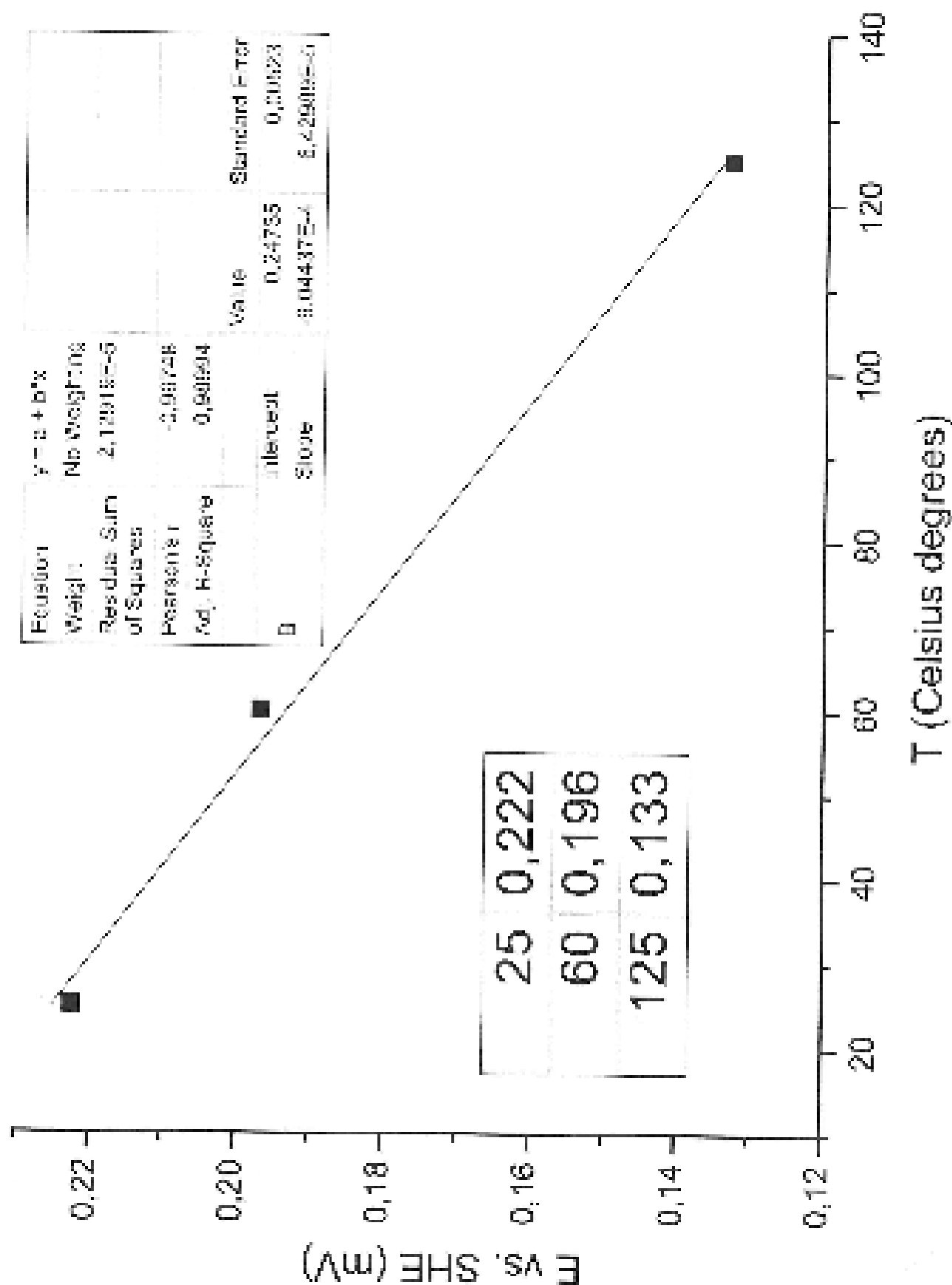
Invented by _____

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To Page No. _____

Date _____

Figure Name: Fig. _____



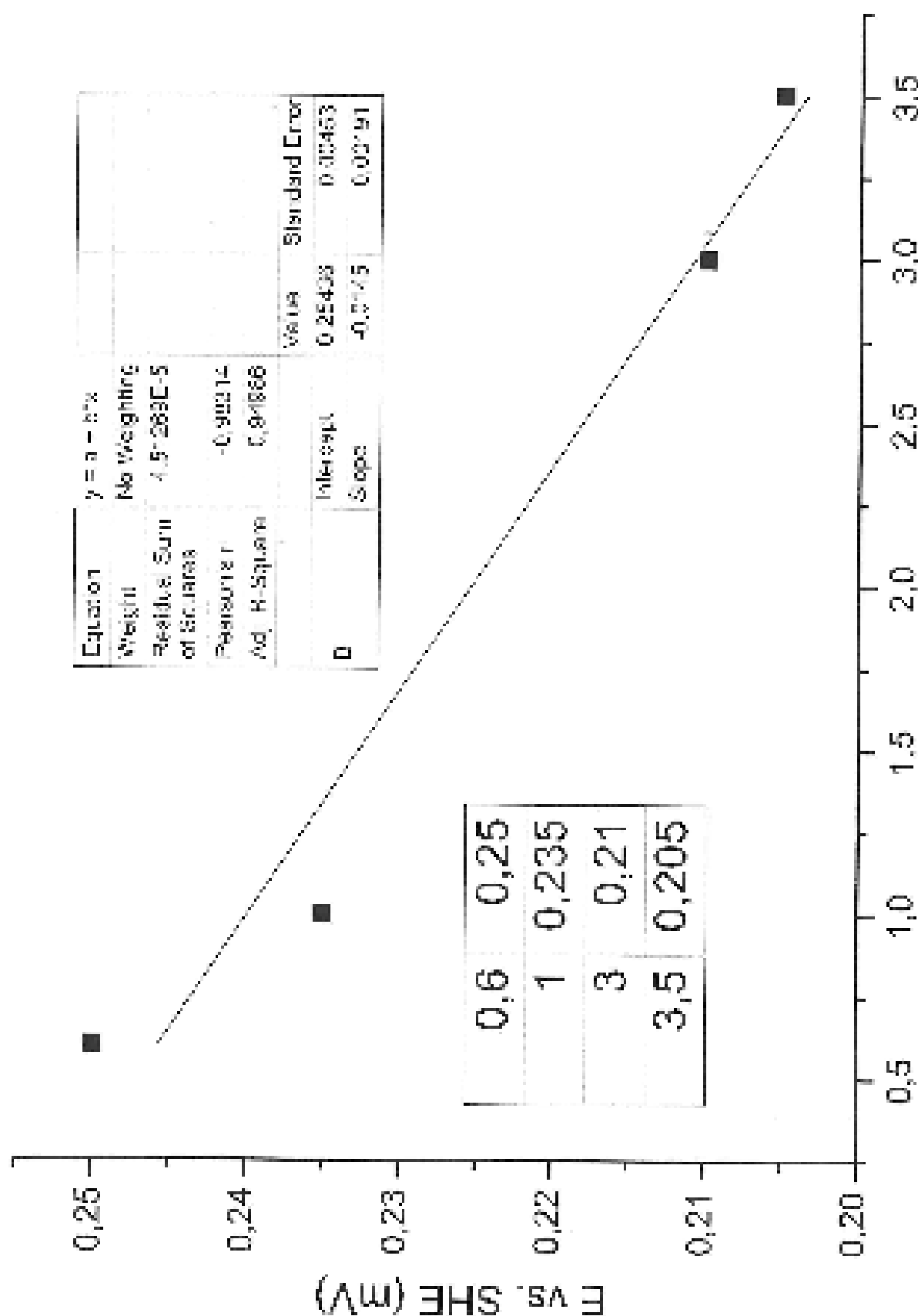
Witnessed and undersigned by me

Date

Invented by
Reviewed by

Date

Form Page No. _____



Ag/AgCl/X mol/kg KCl

Witnessed and understood by me

Date

Invented by

Date

Recorded by

TIF Investigating the noise problem

Form Page No. _____

The noise in chromocapillary-measurements increases as temperature increases

2nd PBS

 $R = 650 \Omega$

ft. WKE = 8

 $t = 36.8^\circ\text{C}$ noise \approx $1.46 \mu\text{A} - 3.83 \mu\text{A} \approx 305 \mu\text{A}$

1:22:30 thermostat off

 $t / ^\circ\text{C}$

noise

~~36.8~~~~305 μA~~

32.8

270 μA

31.7

240 μA

30.0

~~150 μA~~ 110 μA

28.0

190 μA

22.0

110 μA

26.0

90 μA

23.0

60

Arrhenius equation

$$k = A e^{-\frac{E_a}{RT}}$$

(1:50:00 + ice $\sim 10^\circ\text{C}$)
 (1:51:00 + ice)

16°C

53 μA

To Page No. _____

Witnessed and understood by me

Date

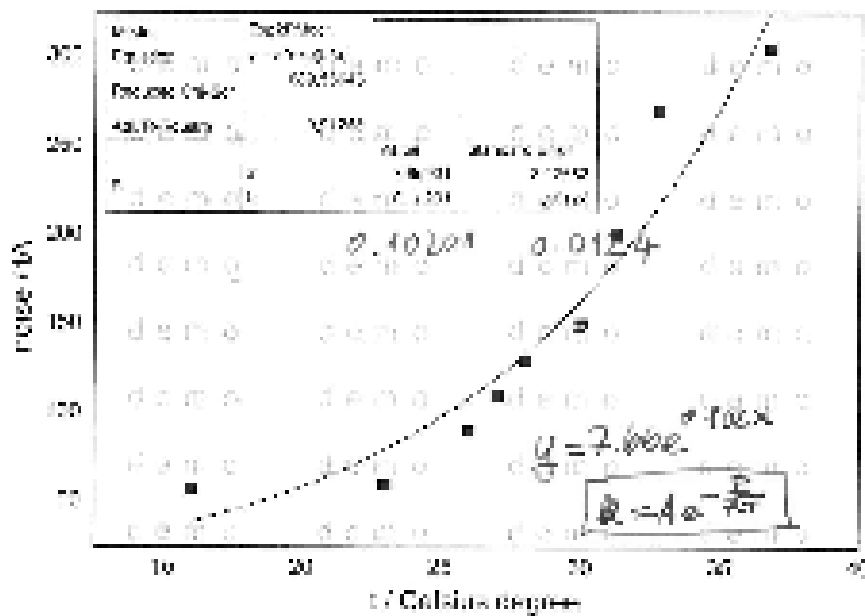
Invented by

Date

Received by

120715

Exam Page No. _____



The observed noise might be caused by the increased reaction rate. It appears that the magnitude of the noise follows the Arrhenius Law.

$$R = A e^{-\frac{E}{RT}}$$

Note on 2018.08.04:

The signal is not increasing with time as much, because the rate limiting step is not the electrode reaction (its transport limited).

Witnessed and understood by me _____

Date _____

Entered by _____

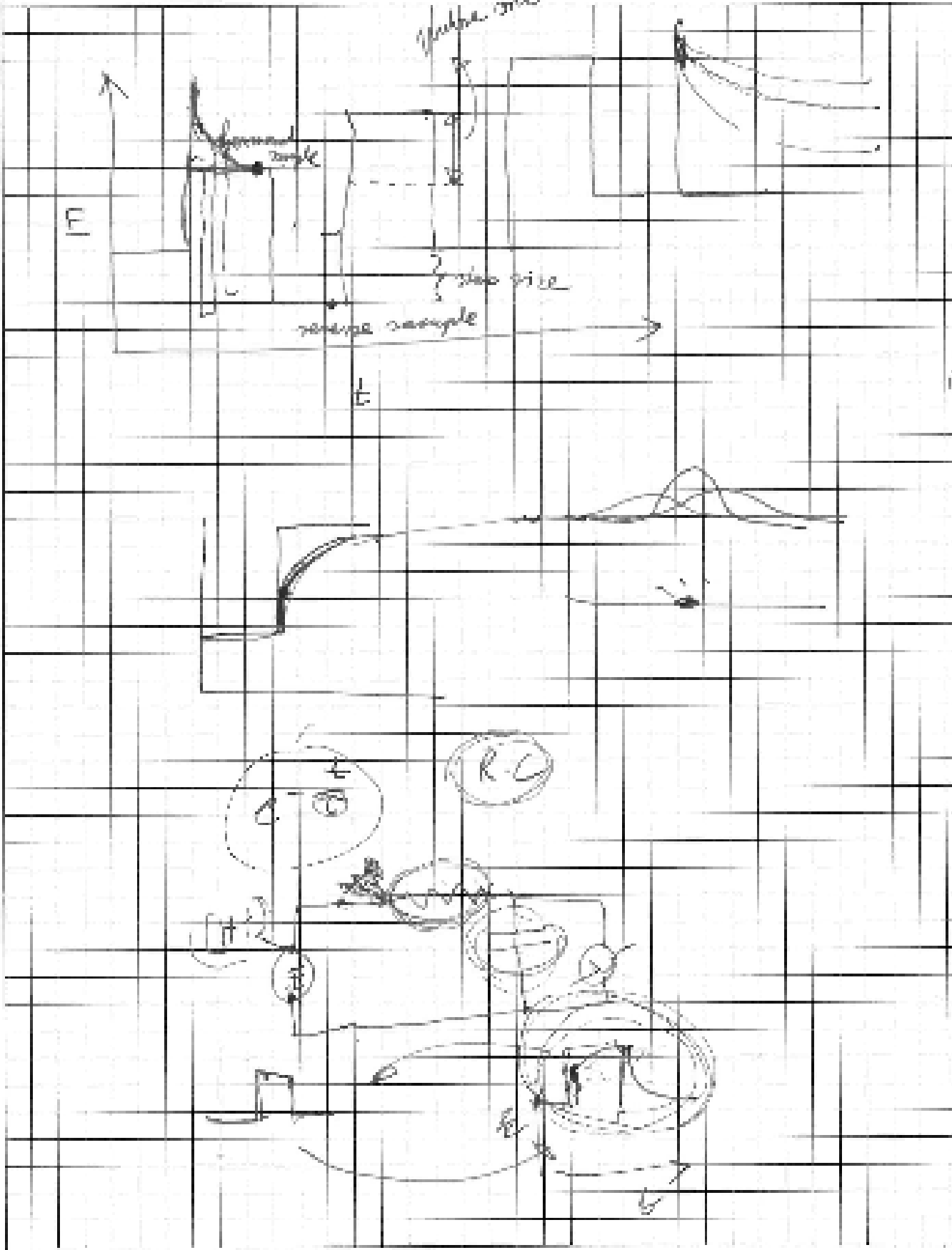
Recorded by _____

Date _____

TITLE Square wave voltage

Back up
(Drawing with Valtankin)

From Page No. _____



To Page No. _____

Witnessed and understood by me

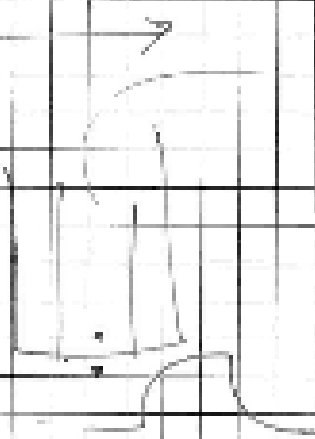
Date

Inventor by

Recorder by

Date

From Page No. _____

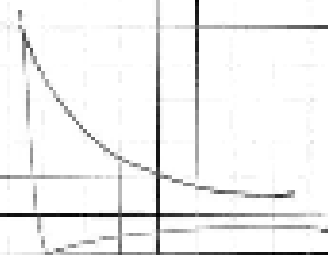
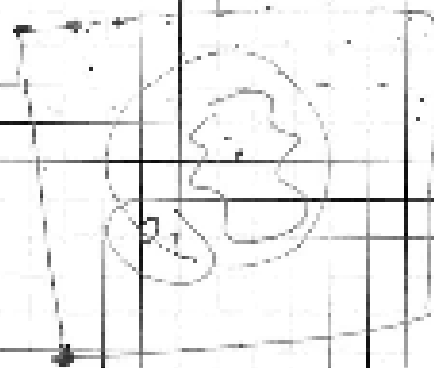
Discussion with Vladimir

B



$$I_E = ae^{-\frac{1}{\sqrt{t}}}$$

$$\frac{1}{\sqrt{t}} \rightarrow \infty$$



$$\frac{1}{\sqrt{t}}$$

$$\frac{d}{dt} = \frac{1}{\sqrt{t}}$$

$$x = \left(\frac{1}{y}\right)^2$$

To Page No. _____

Witnessed and approved by me

Date

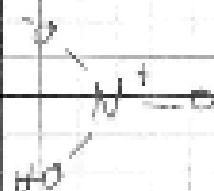
Reviewed by
Battagelli

Date

ILL Platinum etching in aqua regia

Form Page No.

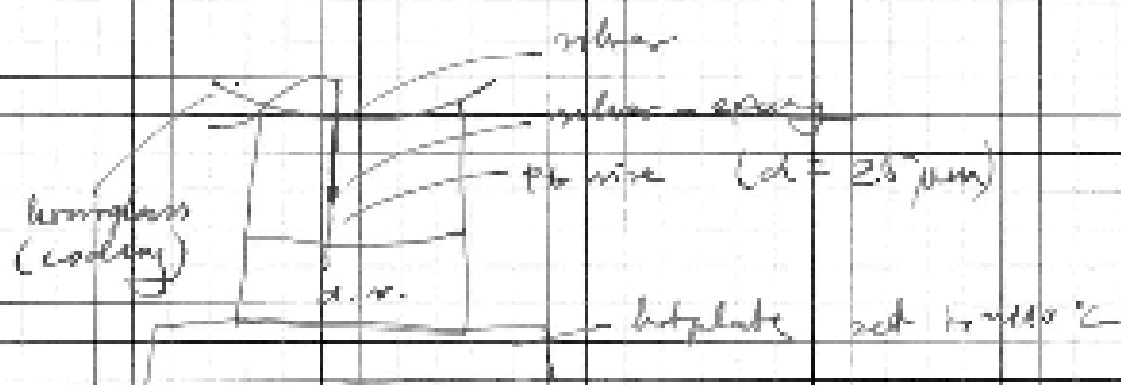
Aqua regia: 1:3 ^{mole ratio} ~~consists of~~ HNO_3 and HCl
cc. cc.

 HCl HCl HCl 

(Molar) $[\text{HNO}_3] = 6.66 \frac{\text{mol}}{\text{dm}^3}$ (not cc.) this was a very old solution
 $[\text{HCl}] = 19.65 \frac{\text{mol}}{\text{dm}^3}$ 3:1. (cc.)

 $t \approx 100^\circ\text{C}$

2 mol HNO_3 and
 7.3 mol HCl and



etch start: 12:00
 finish: 13:00

10 μm Pt wire was etched
 down to $\sim 2.5 \mu\text{m}$

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Date

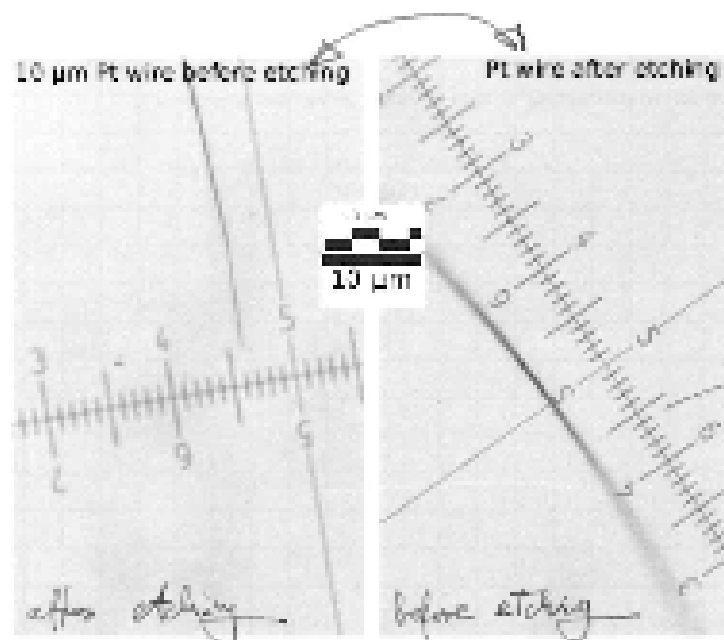
180924

checked by

Reviewed by

Date

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Presented by

Date

Recorded by

From Page No.

1, introduction

2, previous work

what is SECM
potentiometry

3, SECM conferences Vienna

4, question: "Can it be done for amperometric SECM?"

5, YES: page 3. \swarrow amperometric cell, feedback...

6, I've started a vigorous study

4, glass sheet

5, Pt wire



$i-t$ decoupling



deconvolution worked
surprisingly well!

7, cells: H_2O_2 rich

disturbance H_2O_2 source
one O_2 rich \checkmark
2 cells

8, spatial deconvolution

437

9, thank you

photos from 1985

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Date

110726

Revised by

From Page No.

1, O₂ reduction above glass sheet / bulk2, ~~10~~ O₂ charge response3, very slow scan (O₂ reduction) for
spatial deconvolution (lowest possible)0.4 $\mu\text{m/s}$?with circular Pt electrode 10 μm electrolyte: PBS + 10 mM glucose (same as for
monomers)

algorithm

speed
 $\mu\text{m/s}$

memory

fast conv

1

12

2

5

10

E2-4

E2-3

0.1 $\mu\text{m/s}$ sample

20

E2-7

E2-6

1 $\mu\text{m/s}$ sample

50

E2-8 & 7

E2-3

1 $\mu\text{m/s}$ sample

100

E2-11

E2-10

data not
shown
consistency
by
software

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Date

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To Page No.

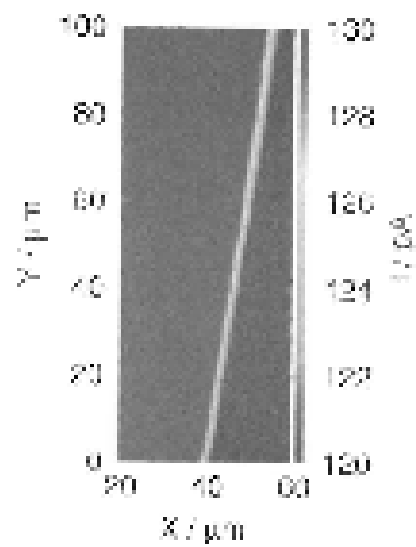
Date

Recorded by

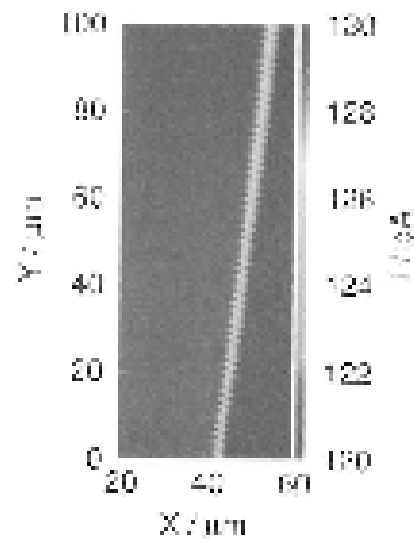
E2-3

E2-13 is for spatial deconvolution!

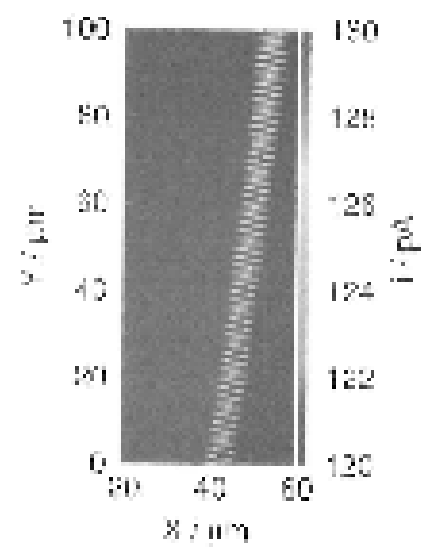
From Page No. _____



5 $\mu\text{m/s}$

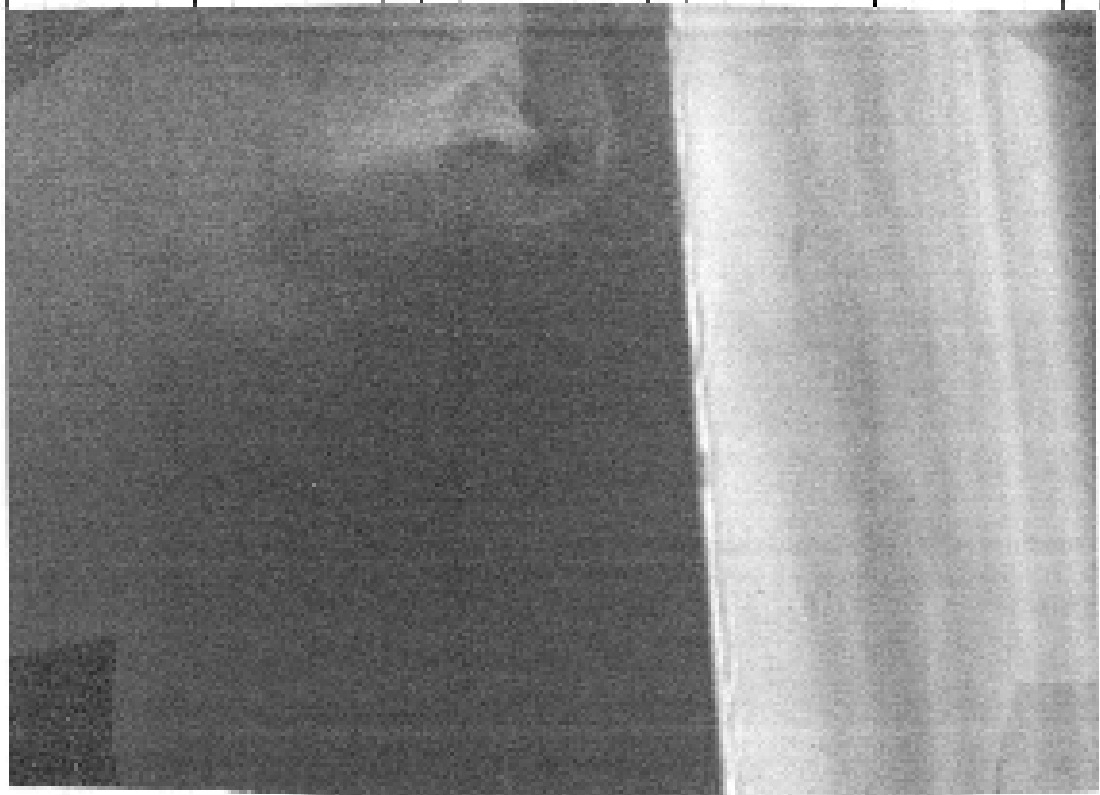


10 $\mu\text{m/s}$



10 $\mu\text{m/s}$ deconvoluted

Refered to from page 24.



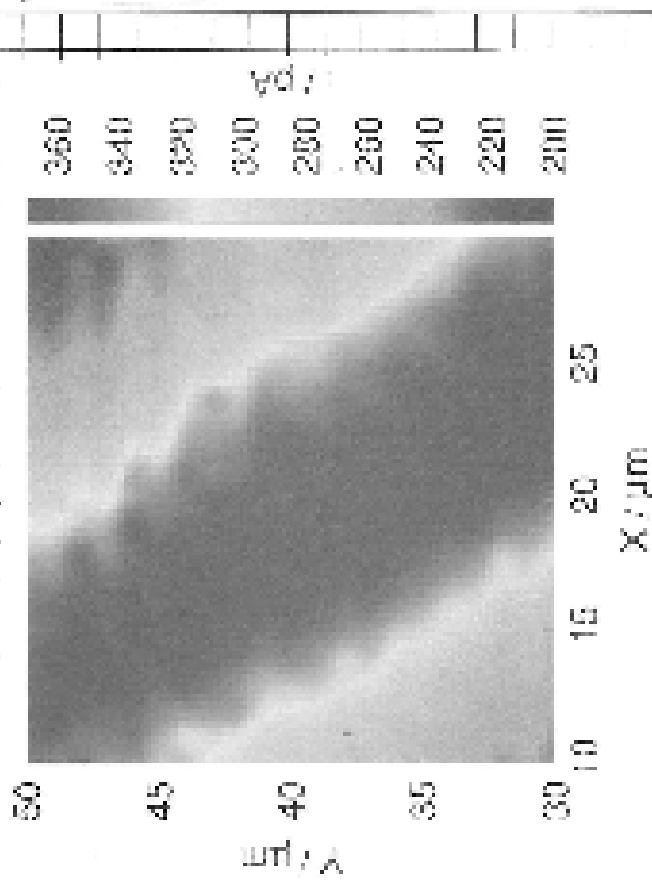
Optical image is much
better than SEM because
it's taken with the camera
and it's more detailed.

c No

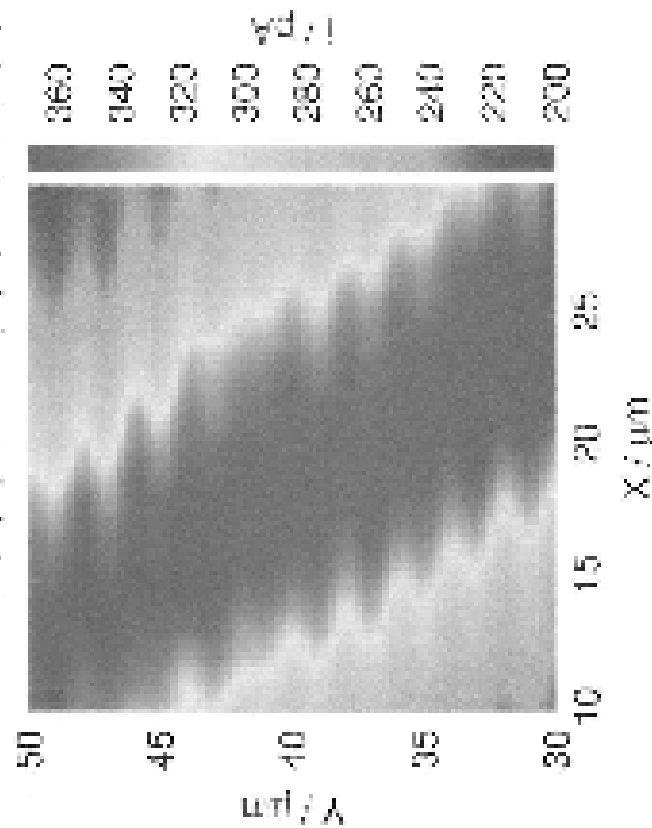
W/b

TITLE _____

Scan Page No. _____



10 $\mu\text{m/s}$ deconvoluted



10 $\mu\text{m/s}$

Referred to on page 1st.

To Page No. _____

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Date _____

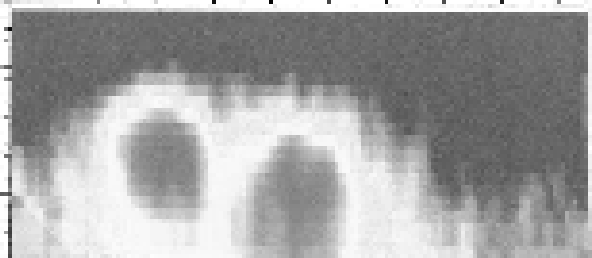
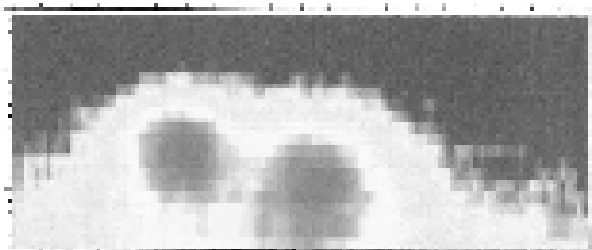
From Page No. _____

Targets: 2 macrocytes stimulated with TPA.

↓

extracellular H_2O_2
conc. increases.

scan rate: 2 $\mu m/s$



Focus: 2014, april 1.

There isn't much improvement. The image was already
pretty good.

To Page No. _____

Witnessed and understood by me

Date

Invented by

Date

Revised by

