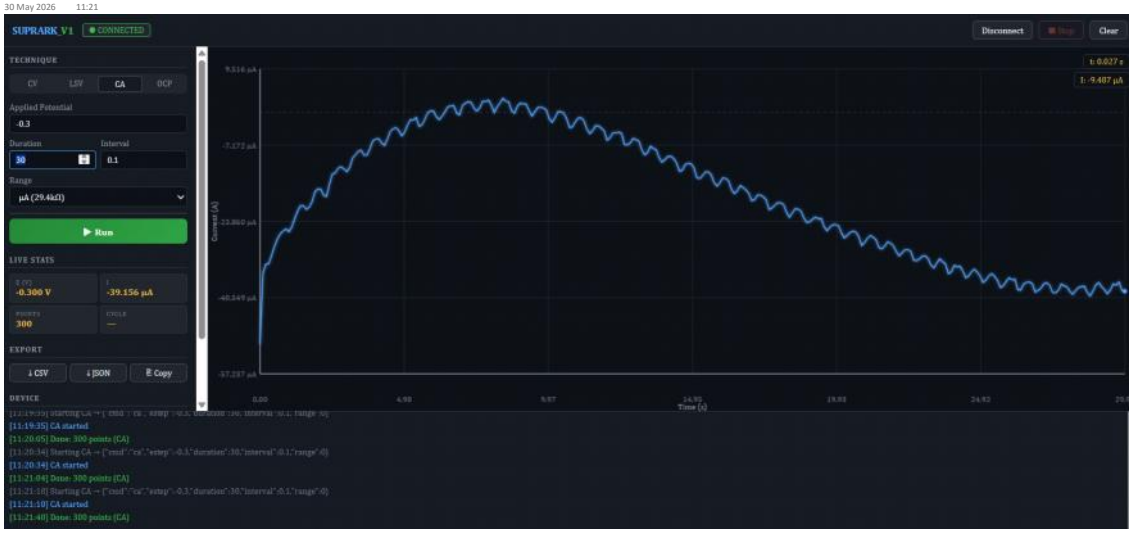
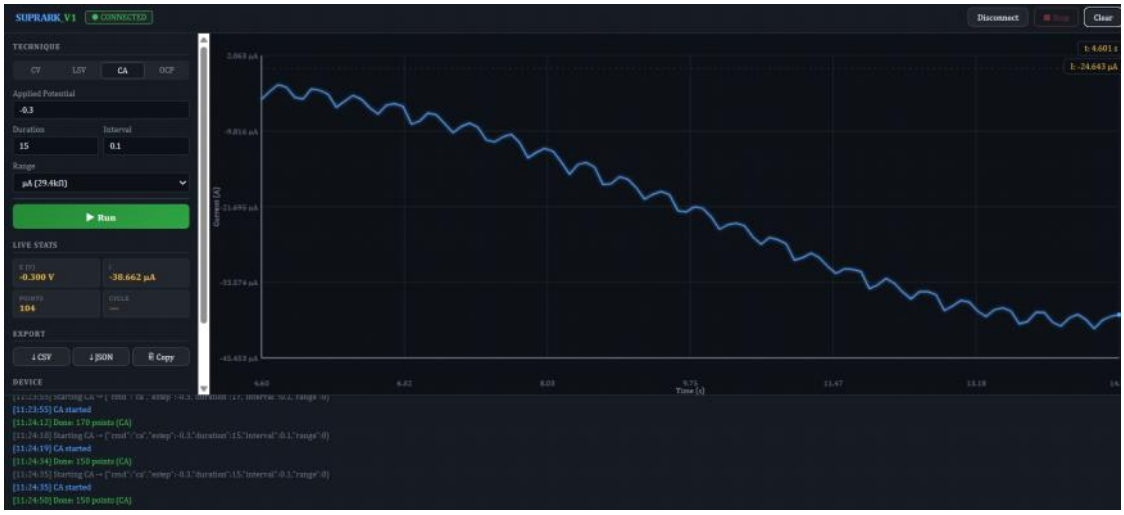
Thesis Experiments

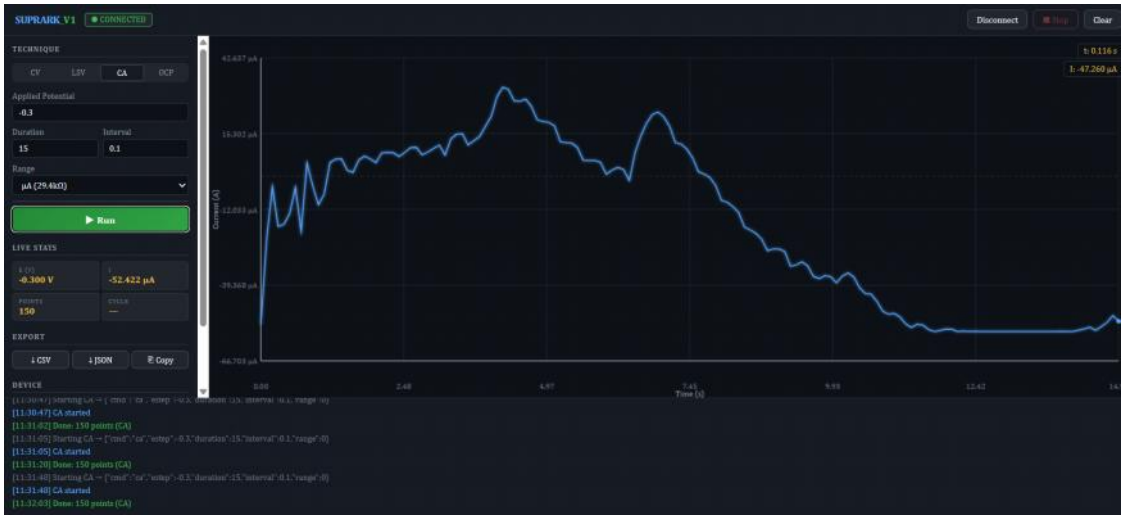
30 May 2026 11:21

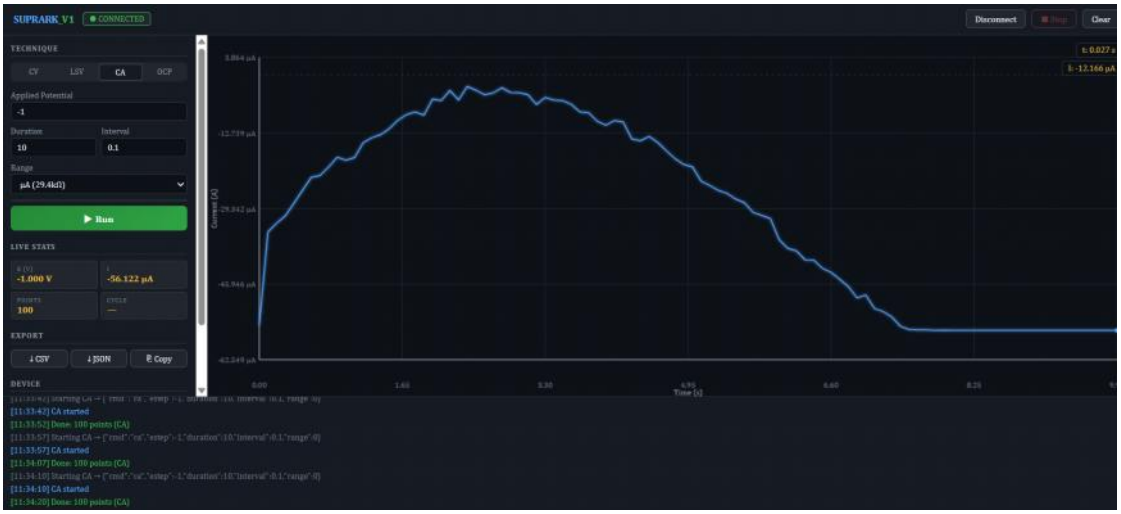


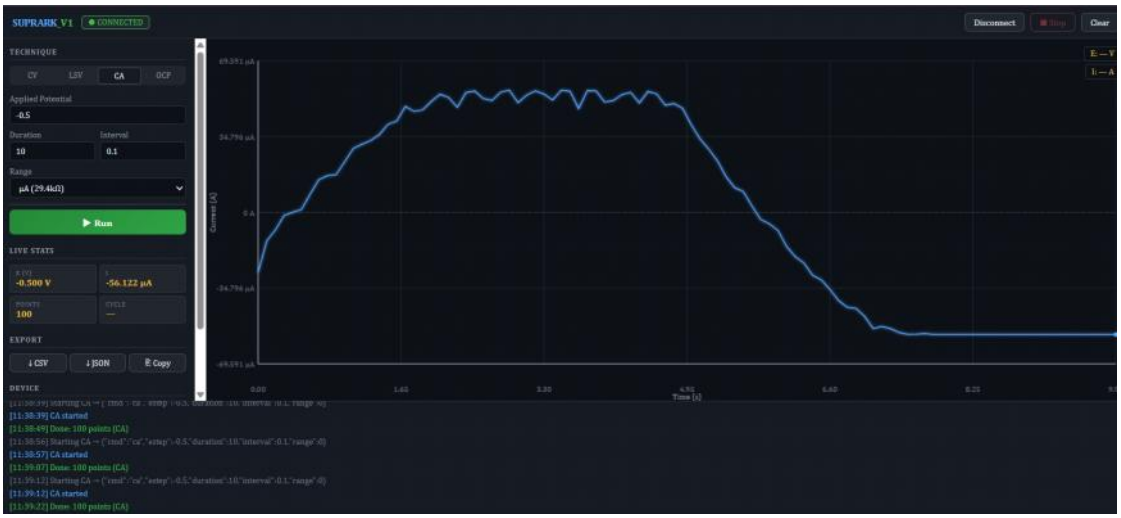
Diluted Zobell

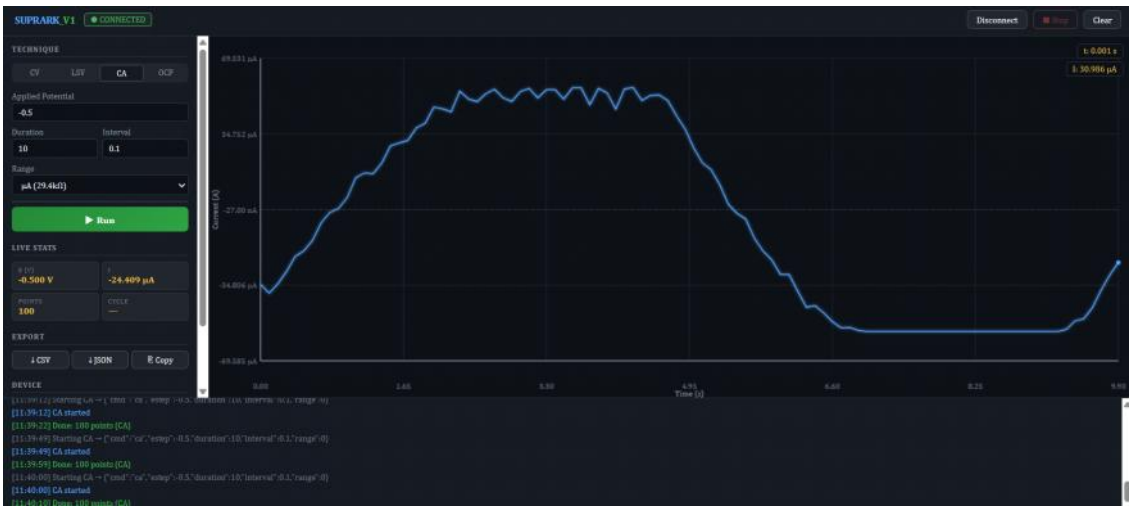


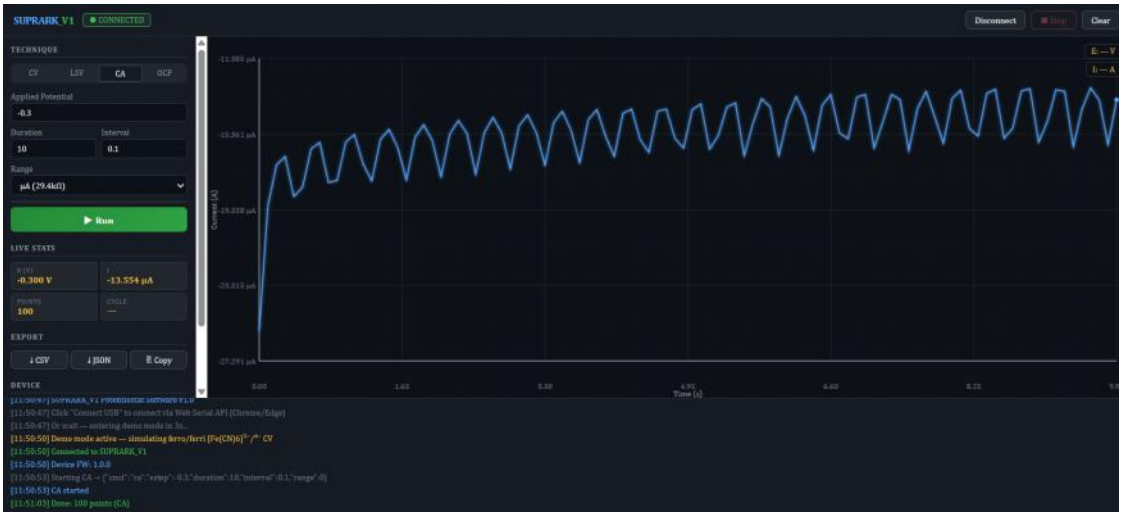
zobell

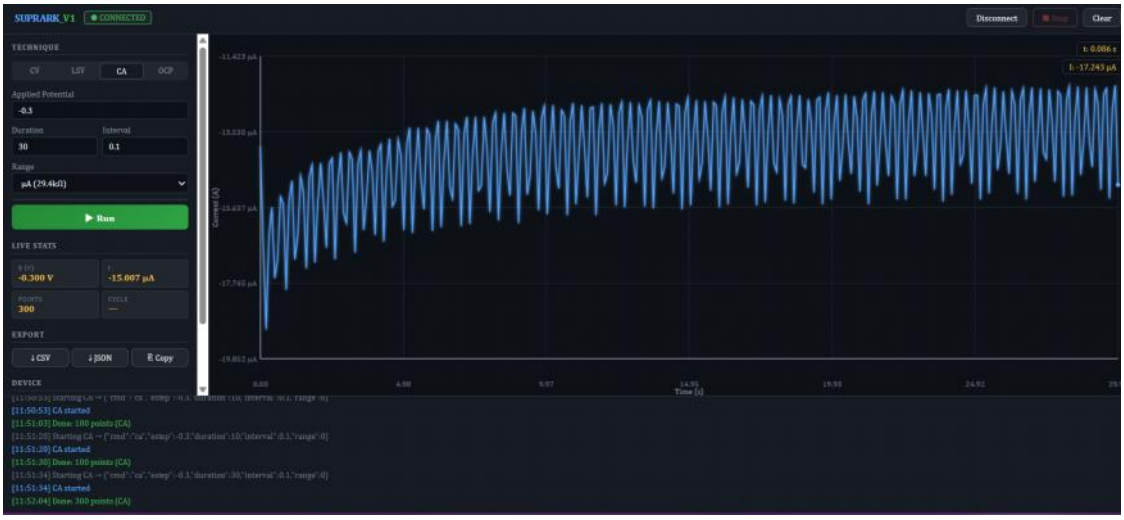


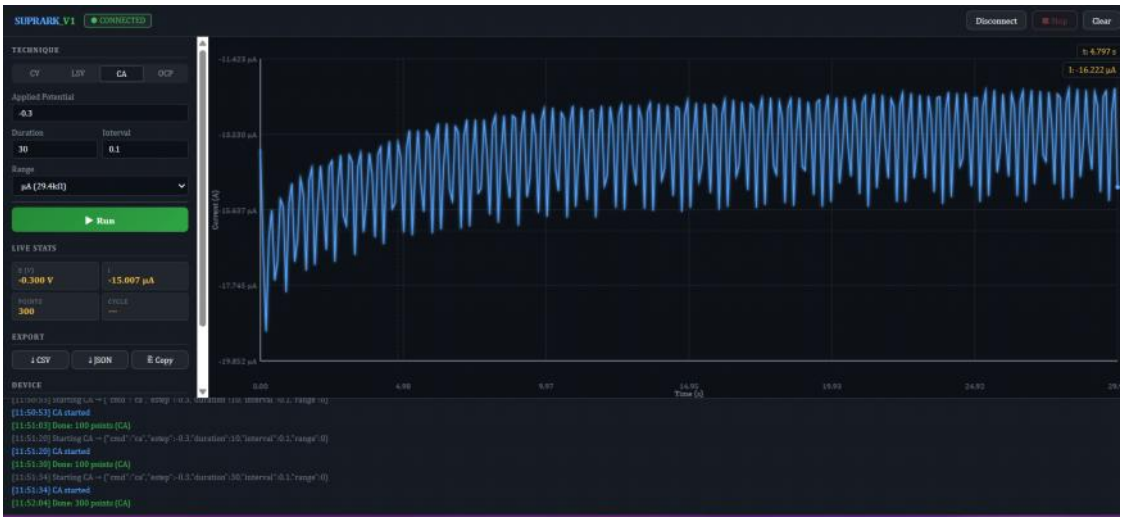

SUPRARK_V1
CONNECTED
Disconnect
Stop
Clear
TECHNIQUE
CV
LSV
CA
OCP
Applied Potential
-1
Duration
10
Interval
0.1
Range
µA (29.4kΩ)
Run
LIVE STATS
E (V)
-1.000 V
I
-56.122 µA
POINTS
100
CYCLE
—
EXPORT
CSV
JSON
Copy
DEVICE
t: 0.027 s
I: -12.166 µA
Current (A)
Time (s)
[11:33:42] CA started
[11:33:52] Done: 100 points (CA)
[11:33:57] Starting CA → {"cmd":"ca","estep":-1,"duration":10,"interval":0.1,"range":0}
[11:33:57] CA started
[11:34:07] Done: 100 points (CA)
[11:34:10] Starting CA → {"cmd":"ca","estep":-1,"duration":10,"interval":0.1,"range":0}
[11:34:10] CA started
[11:34:20] Done: 100 points (CA)

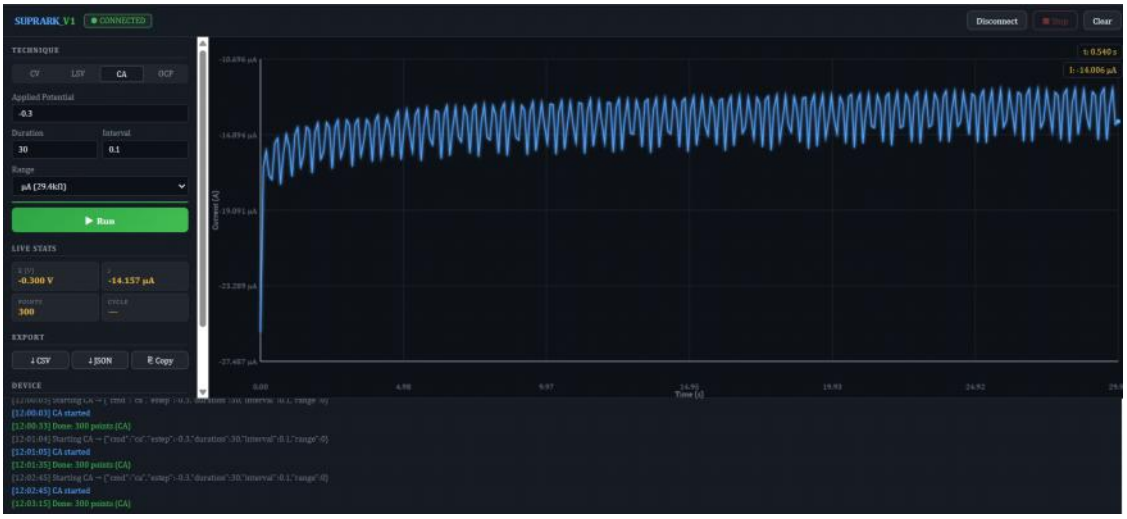

SUPRARK_V1
CONNECTED
Disconnect
Stop
Clear
TECHNIQUE
CV
LSV
CA
OCP
Applied Potential
-0.5
Duration
10
Interval
0.1
Range
µA (29.4kΩ)
Run
LIVE STATS
E (V)
-0.500 V
I
-56.122 µA
POINTS
100
CYCLE
—
EXPORT
CSV
JSON
Copy
DEVICE
E: — V
I: — A
Current (A)
Time (s)
[11:38:39] CA started
[11:38:49] Done: 100 points (CA)
[11:38:56] Starting CA → {"cmd":"ca","estep":-0.5,"duration":10,"interval":0.1,"range":0}
[11:38:57] CA started
[11:39:07] Done: 100 points (CA)
[11:39:12] Starting CA → {"cmd":"ca","estep":-0.5,"duration":10,"interval":0.1,"range":0}
[11:39:12] CA started
[11:39:22] Done: 100 points (CA)

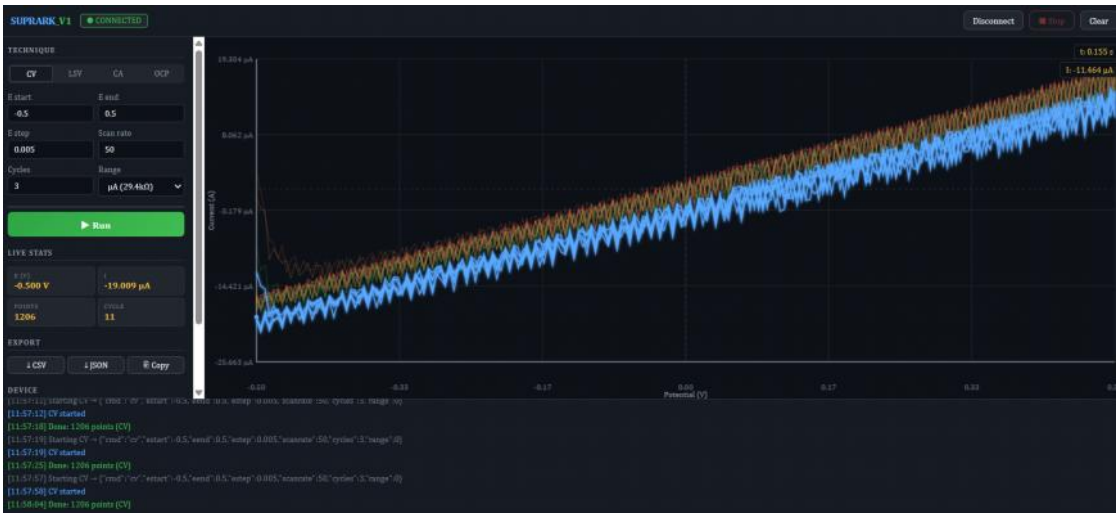

SUPRARK_V1
CONNECTED
Disconnect
Stop
Clear
TECHNIQUE
CV
LSV
CA
OCP
Applied Potential
-0.5
Duration
10
Interval
0.1
Range
µA (29.4kΩ)
Run
LIVE STATS
E (V)
-0.500 V
I
-24.409 µA
POINTS
100
CYCLE
—
EXPORT
CSV
JSON
Copy
DEVICE
t: 0.001 s
I: 30.986 µA
Current (A)
Time (s)
[11:39:12] CA started
[11:39:22] Done: 100 points (CA)
[11:39:49] Starting CA → {"cmd":"ca","estep":-0.5,"duration":10,"interval":0.1,"range":0}
[11:39:49] CA started
[11:39:59] Done: 100 points (CA)
[11:40:00] Starting CA → {"cmd":"ca","estep":-0.5,"duration":10,"interval":0.1,"range":0}
[11:40:00] CA started
[11:40:10] Done: 100 points (CA)


SUPRARK_V1
CONNECTED
Disconnect
Stop
Clear
TECHNIQUE
CV
LSV
CA
OCP
Applied Potential
-0.3
Duration
10
Interval
0.1
Range
µA (29.4kΩ)
Run
LIVE STATS
-0.300 V
-13.554 µA
100
EXPORT
CSV
JSON
Copy
DEVICE
E: — V
I: — A
Current (A)
Time (s)
[11:50:47] Click "Connect USB" to connect via Web Serial API (Chrome/Edge)
[11:50:50] Demo mode active — simulating ferro/ferri [Fe(CN)6]3-/4- CV
[11:50:50] Connected to SUPRARK_V1
[11:50:50] Device FW: 1.0.0
[11:50:53] CA started
[11:51:03] Done: 100 points (CA)

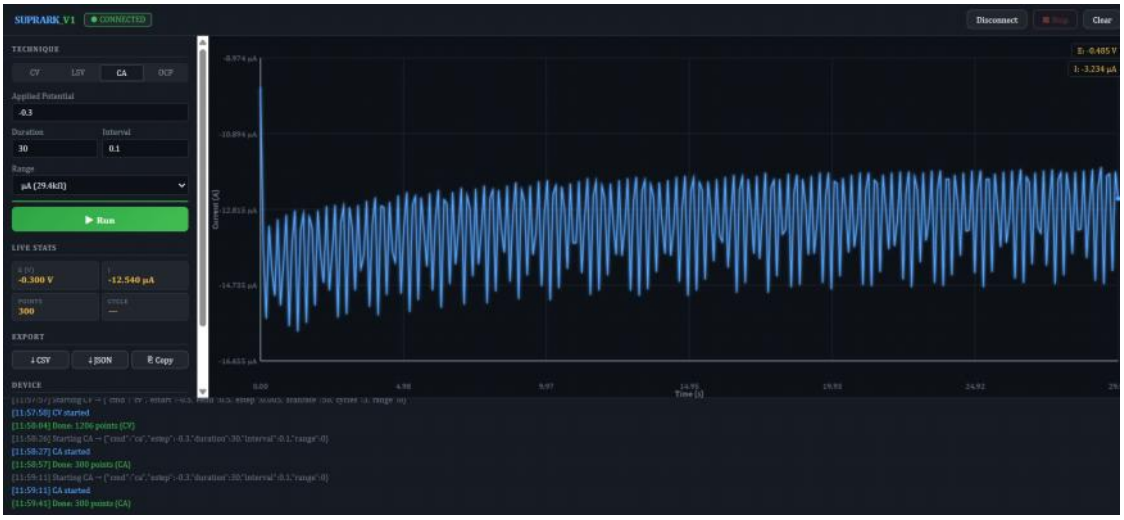

SUPRARK_V1
CONNECTED
Disconnect
Stop
Clear
TECHNIQUE
CV
LSV
CA
OCP
Applied Potential
-0.3
Duration
30
Interval
0.1
Range
µA (29.4kΩ)
Run
LIVE STATS
-0.300 V
-15.007 µA
300
EXPORT
CSV
JSON
Copy
DEVICE
t: 0.086 s
I: -17.243 µA
Current (A)
Time (s)
[11:50:53] CA started
[11:51:03] Done: 100 points (CA)
[11:51:20] CA started
[11:51:30] Done: 100 points (CA)
[11:51:34] CA started
[11:52:04] Done: 300 points (CA)

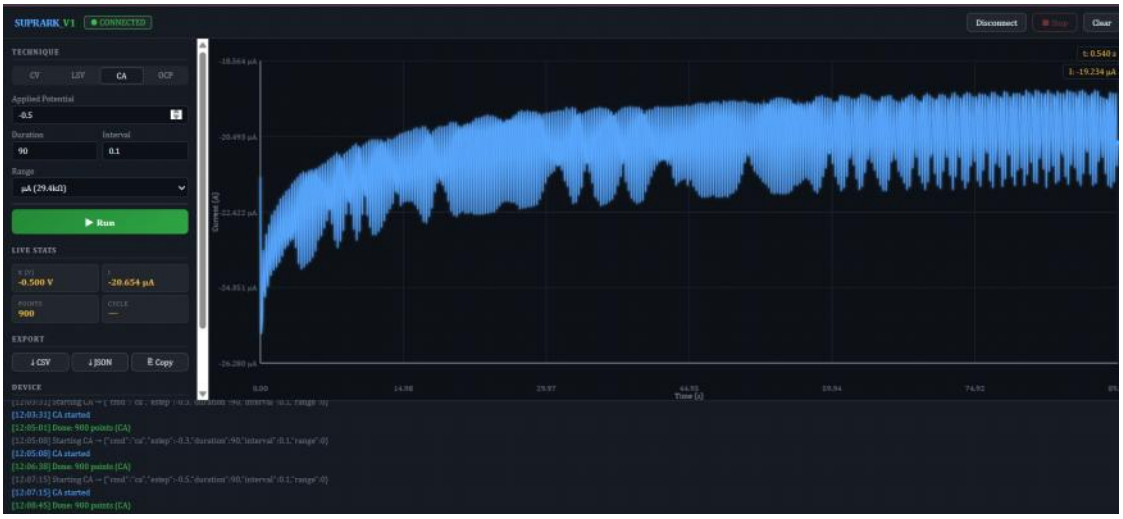

SUPRARK_V1
CONNECTED
Disconnect
Stop
Clear
TECHNIQUE
CV
LSV
CA
OCP
Applied Potential
-0.3
Duration
30
Interval
0.1
Range
µA (29.4kΩ)
Run
LIVE STATS
-0.300 V
-15.007 µA
300
EXPORT
CSV
JSON
Copy
DEVICE
t: 4.797 s
I: -16.222 µA
Current (A)
Time (s)
[11:50:53] CA started
[11:51:03] Done: 100 points (CA)
[11:51:20] CA started
[11:51:30] Done: 100 points (CA)
[11:51:34] CA started
[11:52:04] Done: 300 points (CA)

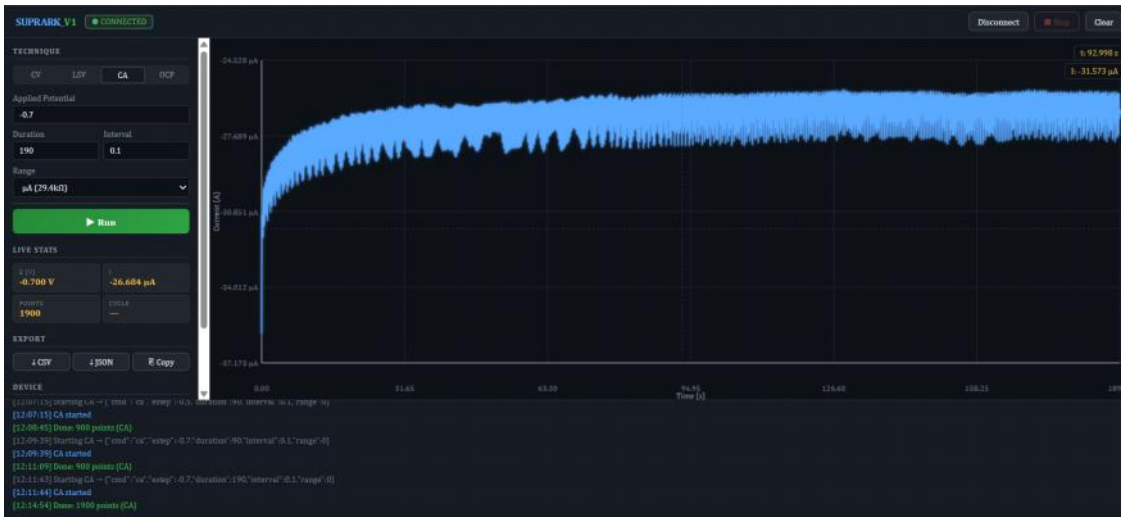


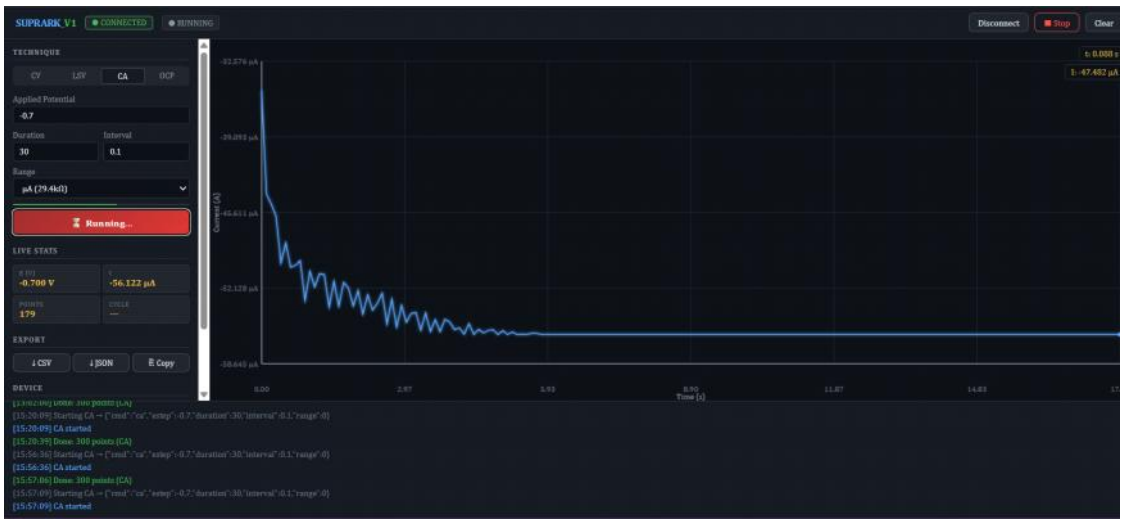


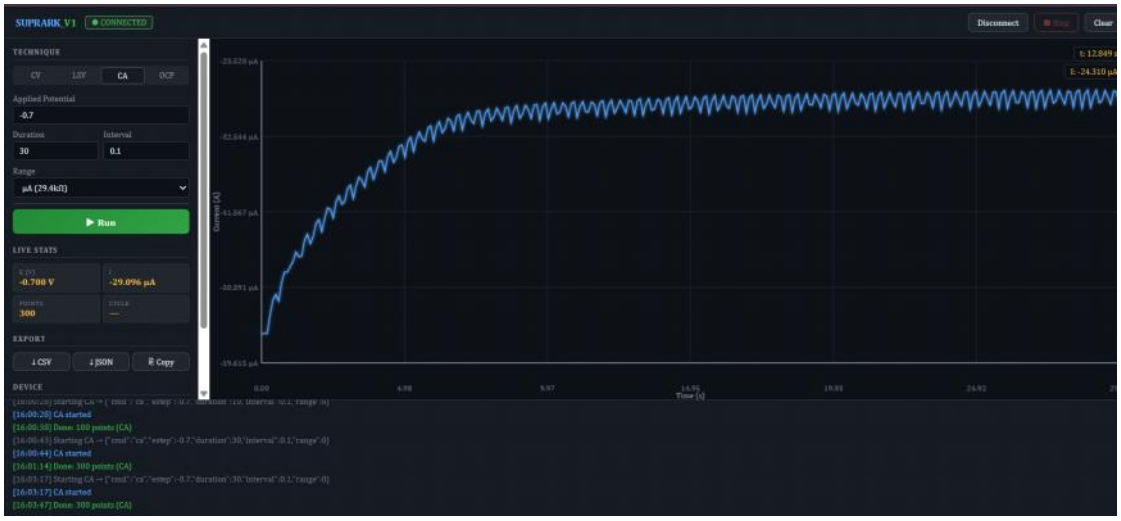
Zobell and PbS



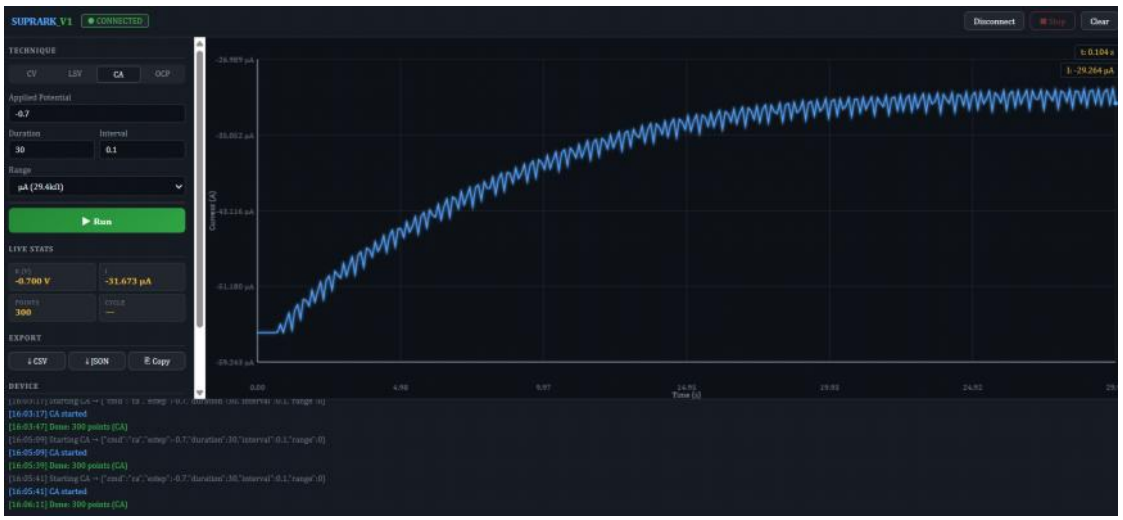

SUPRARK_V1
CONNECTED
Disconnect
Stop
Clear
TECHNIQUE
CV
LSV
CA
OCP
Applied Potential
-0.5
Duration
90
Interval
0.1
Range
µA (29.4kΩ)
Run
LIVE STATS
-0.500 V
-20.654 µA
900
EXPORT
CSV
JSON
Copy
DEVICE
t: 0.540 s
I: -19.234 µA
Current (A)
Time (s)
[12:03:31] CA started
[12:05:01] Done: 900 points (CA)
[12:05:08] Starting CA → {"cmd":"ca","estep":-0.5,"duration":90,"interval":0.1,"range":0}
[12:05:08] CA started
[12:06:38] Done: 900 points (CA)
[12:07:15] Starting CA → {"cmd":"ca","estep":-0.5,"duration":90,"interval":0.1,"range":0}
[12:07:15] CA started
[12:08:45] Done: 900 points (CA)


SUPRARK_V1
CONNECTED
Disconnect
Stop
Clear
TECHNIQUE
CV
LSV
CA
OCP
Applied Potential
-0.7
Duration
190
Interval
0.1
Range
µA (29.4kΩ)
Run
LIVE STATS
-0.700 V
-26.684 µA
1900
EXPORT
CSV
JSON
Copy
DEVICE
t: 92.998 s
I: -31.573 µA
Current (A)
Time (s)
[12:07:15] CA started
[12:08:45] Done: 900 points (CA)
[12:09:39] Starting CA → {"cmd":"ca","estep":-0.7,"duration":90,"interval":0.1,"range":0}
[12:09:39] CA started
[12:11:09] Done: 900 points (CA)
[12:11:43] Starting CA → {"cmd":"ca","estep":-0.7,"duration":190,"interval":0.1,"range":0}
[12:11:44] CA started
[12:14:54] Done: 1900 points (CA)

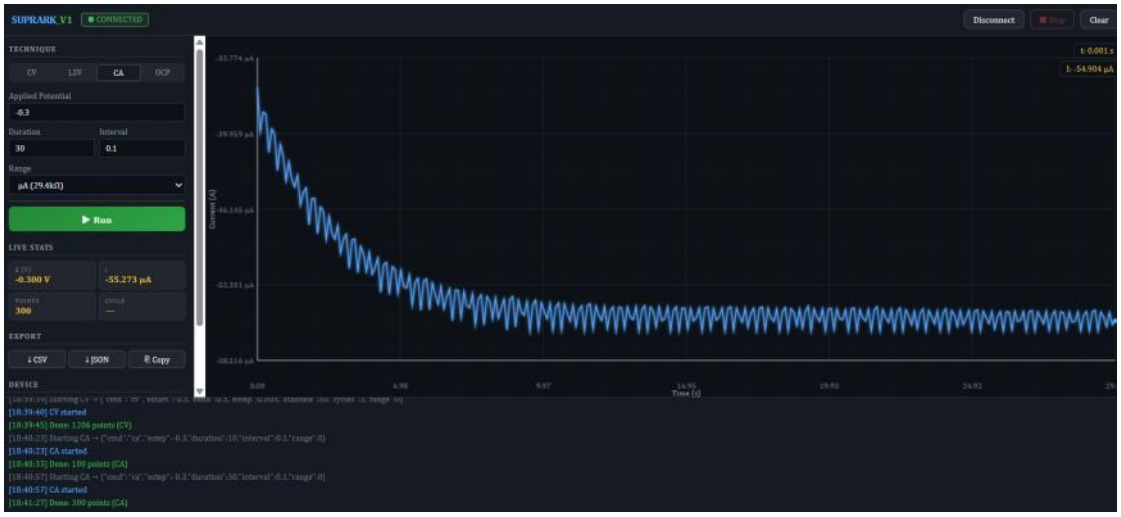

SUPRARK_V1
CONNECTED
RUNNING
Disconnect
Stop
Clear
TECHNIQUE
CV
LSV
CA
OCP
Applied Potential
-0.7
Duration
30
Interval
0.1
Range
µA (29.4kΩ)
Running...
LIVE STATS
-0.700 V
-56.122 µA
179
EXPORT
CSV
JSON
Copy
DEVICE
t: 0.088 s
I: -47.482 µA
Current (A)
Time (s)
[15:20:09] CA started
[15:20:39] Done: 300 points (CA)
[15:56:36] Starting CA → {"cmd":"ca","estep":-0.7,"duration":30,"interval":0.1,"range":0}
[15:56:36] CA started
[15:57:06] Done: 300 points (CA)
[15:57:09] Starting CA → {"cmd":"ca","estep":-0.7,"duration":30,"interval":0.1,"range":0}
[15:57:09] CA started

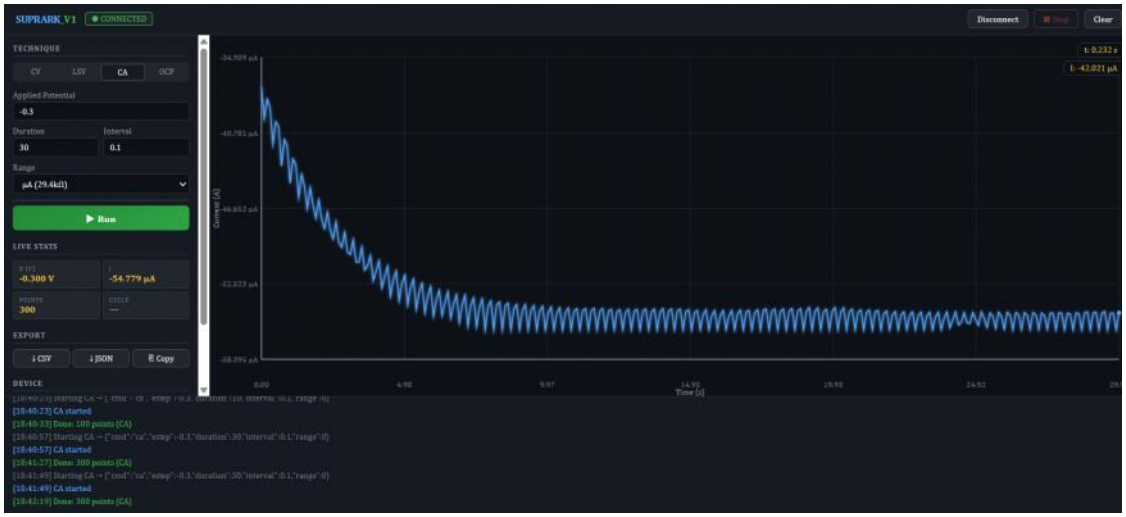


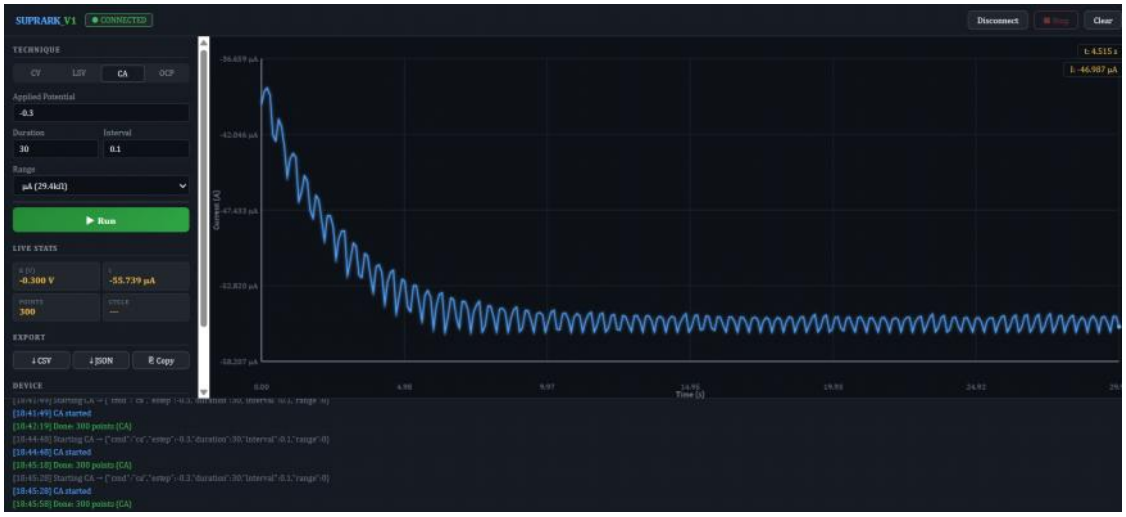
Zobell with spe



Concentrated Zobell

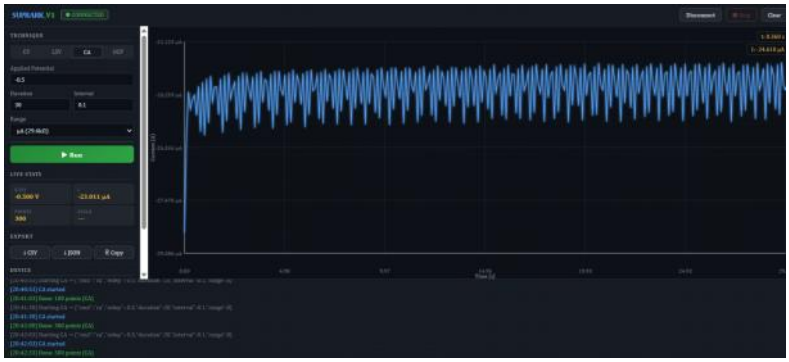




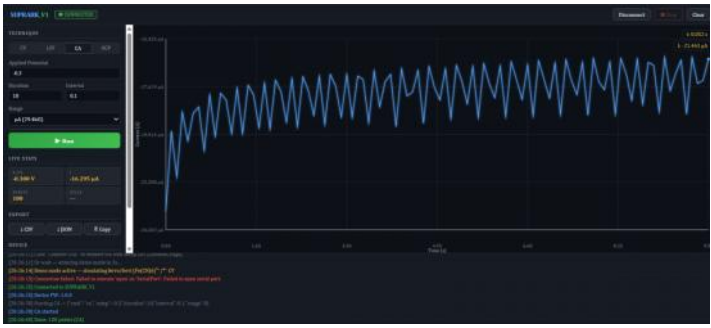


0.5v, V2 code

0.3, v2 code



0.5 v1



0.3, V1

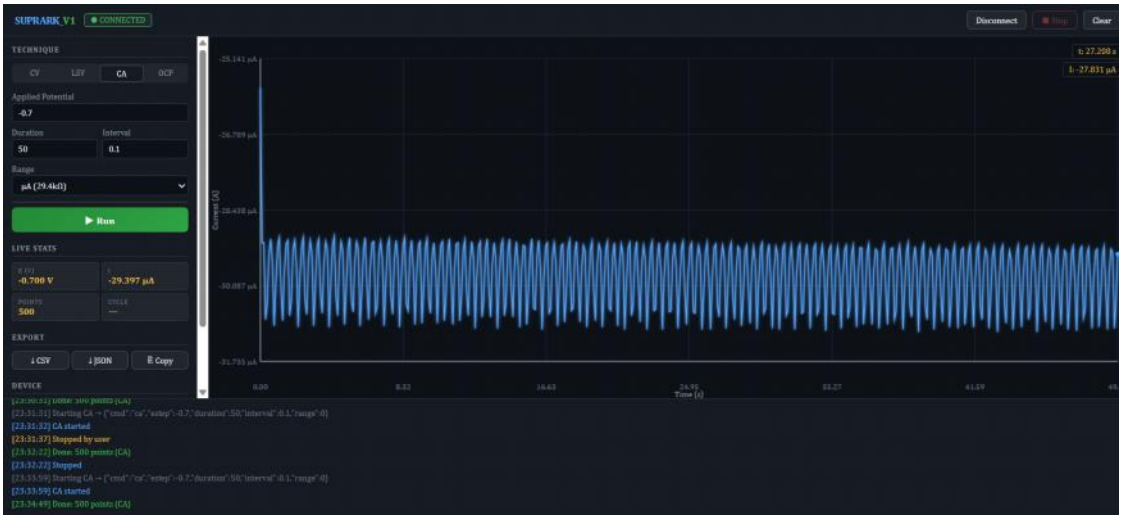
10 fM, p-cresol, -0.3v

10 fM, p-cresol, 0.78v

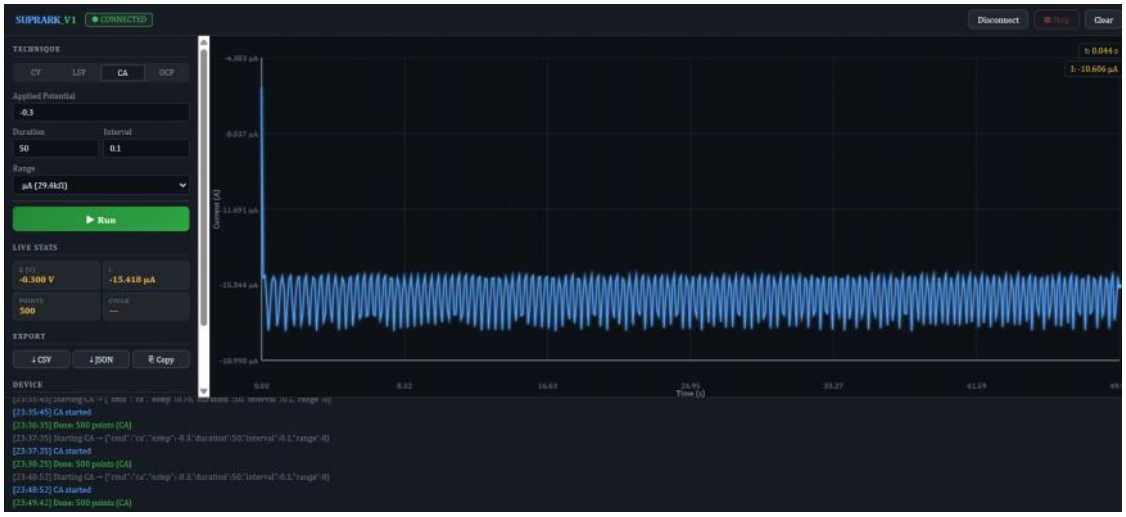
10 fM, p-cresol, -0.7V run 1

10 fM, p-cresol, -0.7V run 2

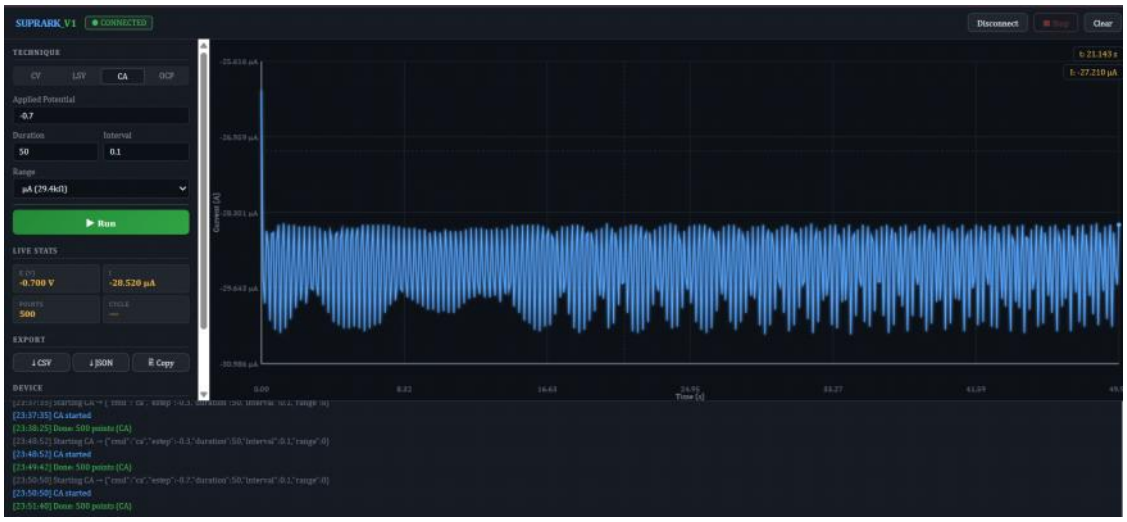
10 fM, p-cresol, -0.7V run 3



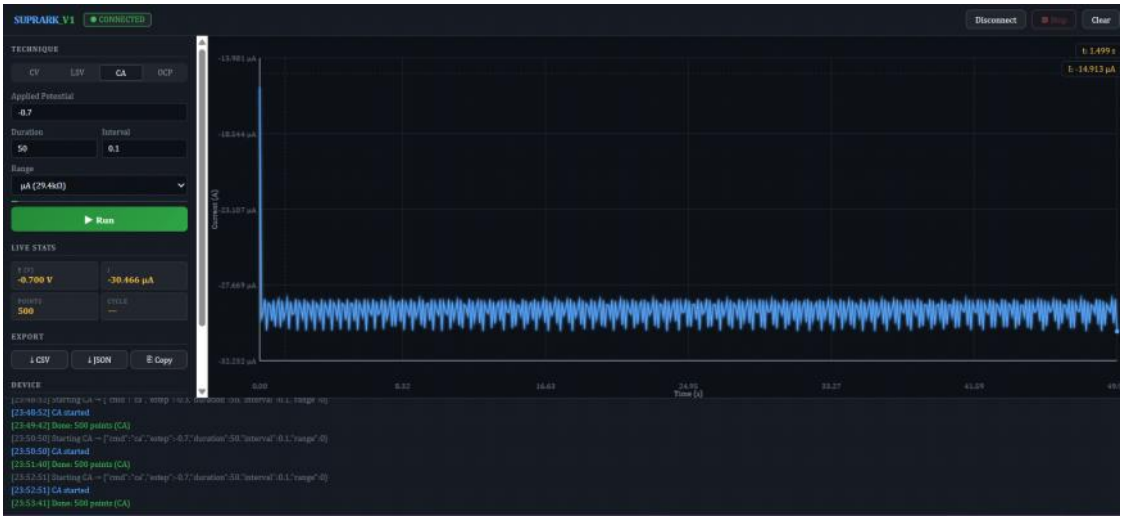
10 mM, p-cresol, -0.7V



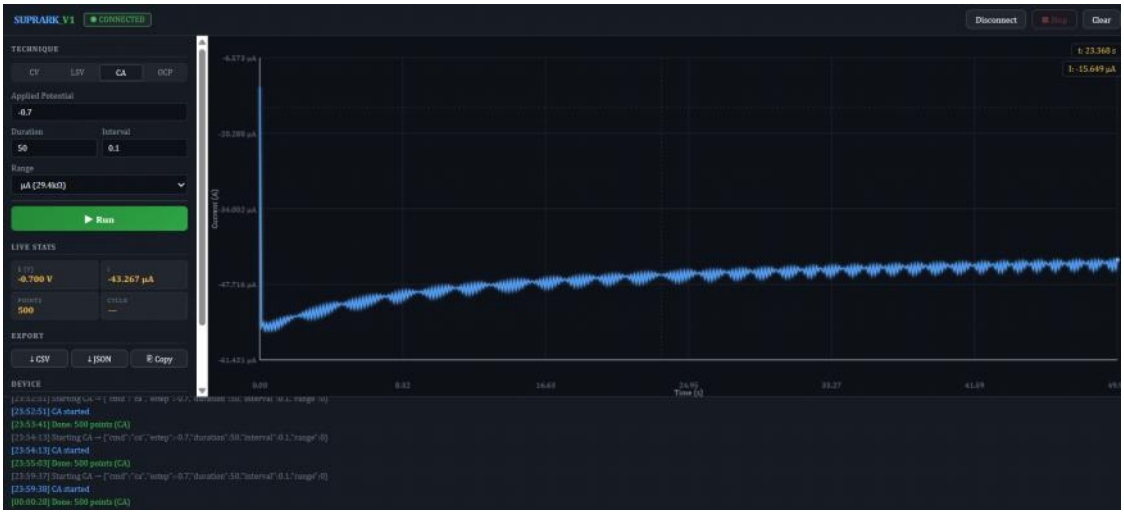
100 mM, p-cresol, -0.3V



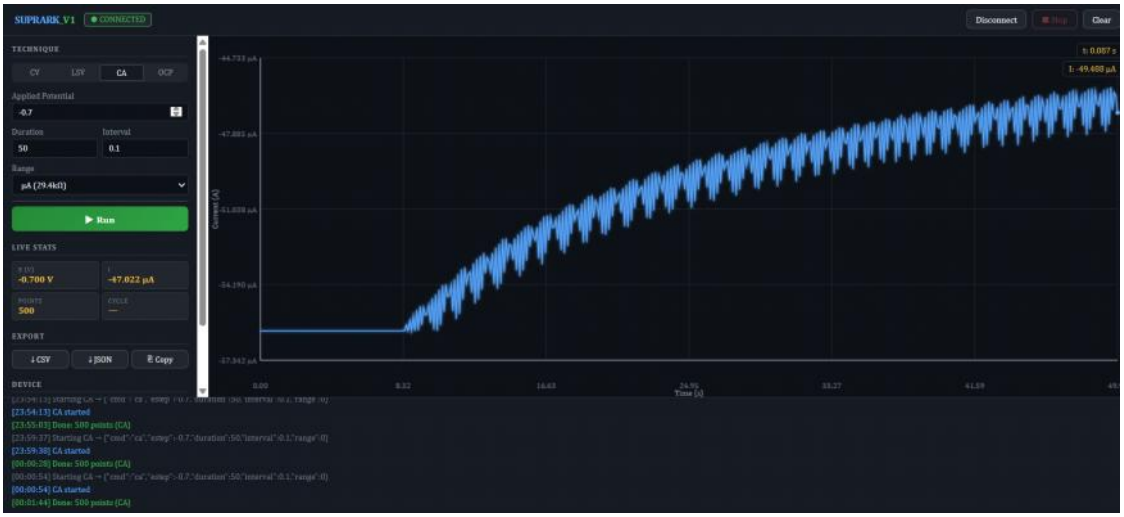
100 mM, p-cresol, -0.7V, run 1



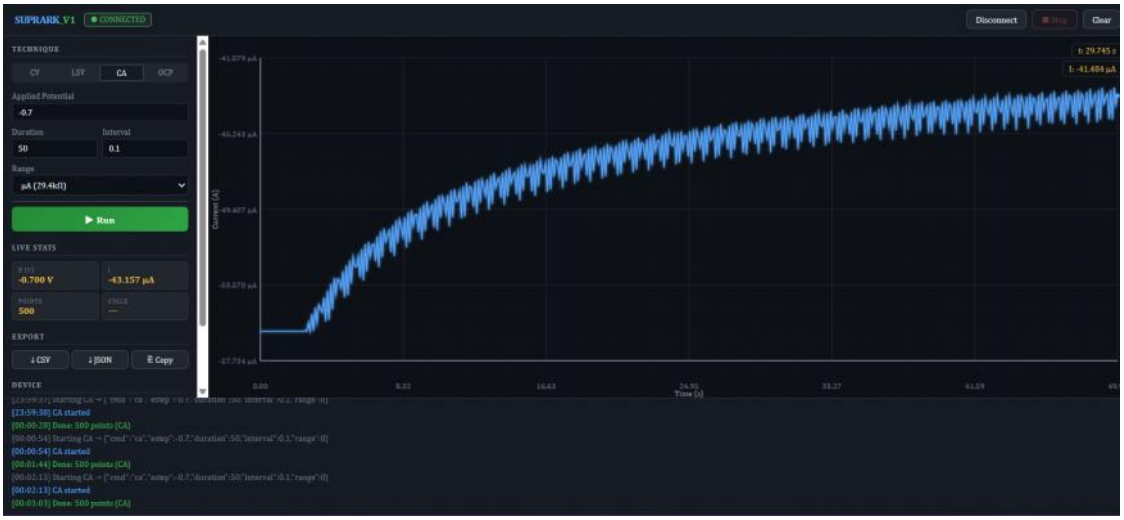
100 mM, p-cresol, -0.7V, run 2



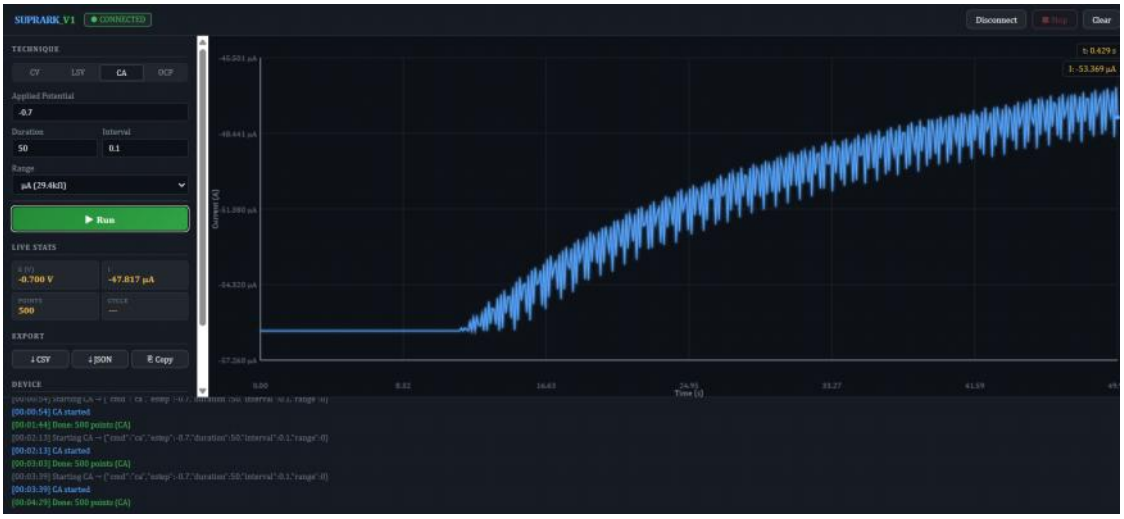
5 mM, p-cresol, -0.7V, run 1



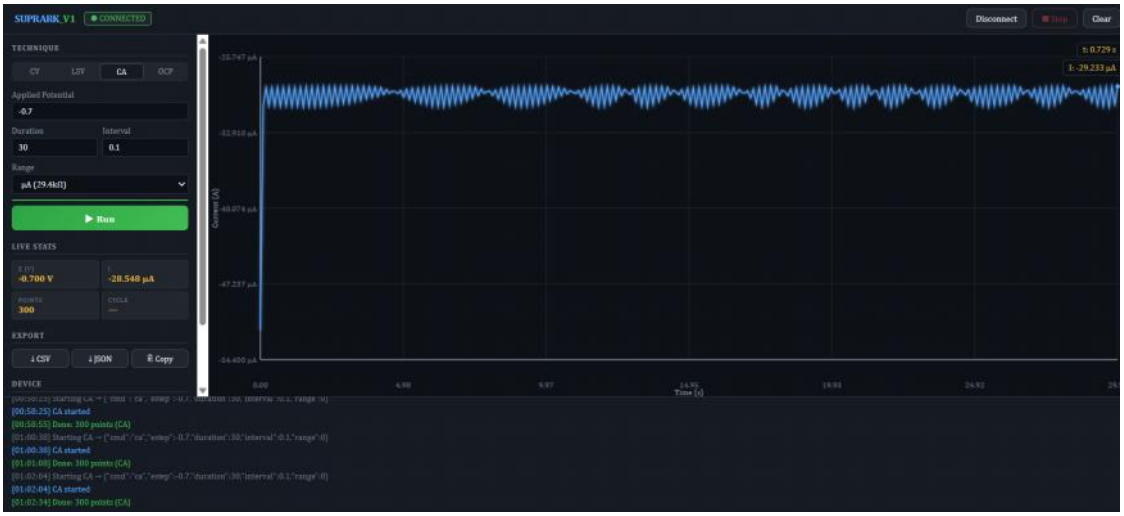
5 mM, p-cresol, -0.7V, run 2



5 mM, p-cresol, -0.7V, run 3



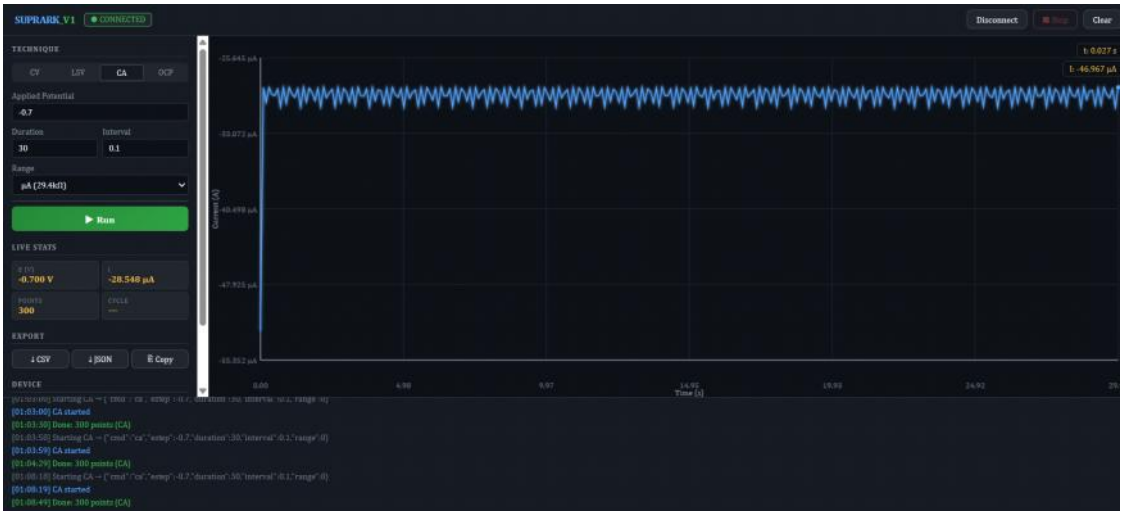
5 mM, p-cresol, -0.7V, run 4



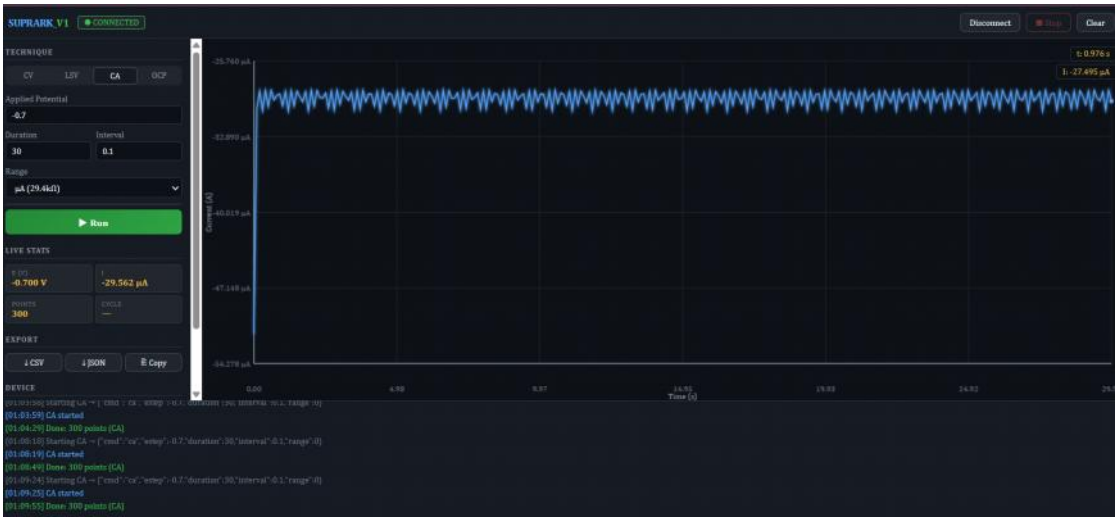
2.5 mM, p-cresol, -0.7V, run 1

2.5 mM, p-cresol, -0.7V, run 2

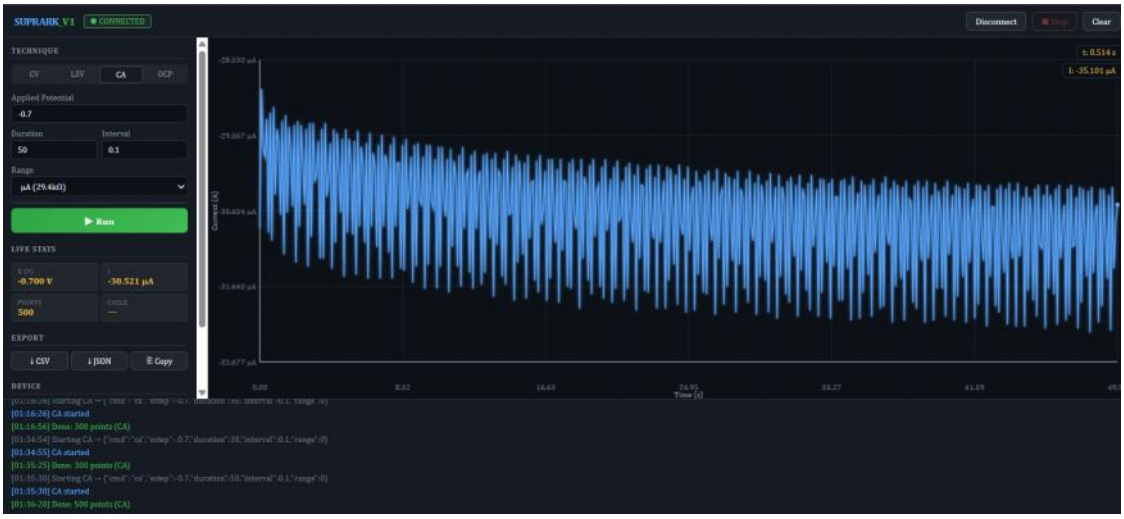
2.5 mM, p-cresol, -0.7V, run 3



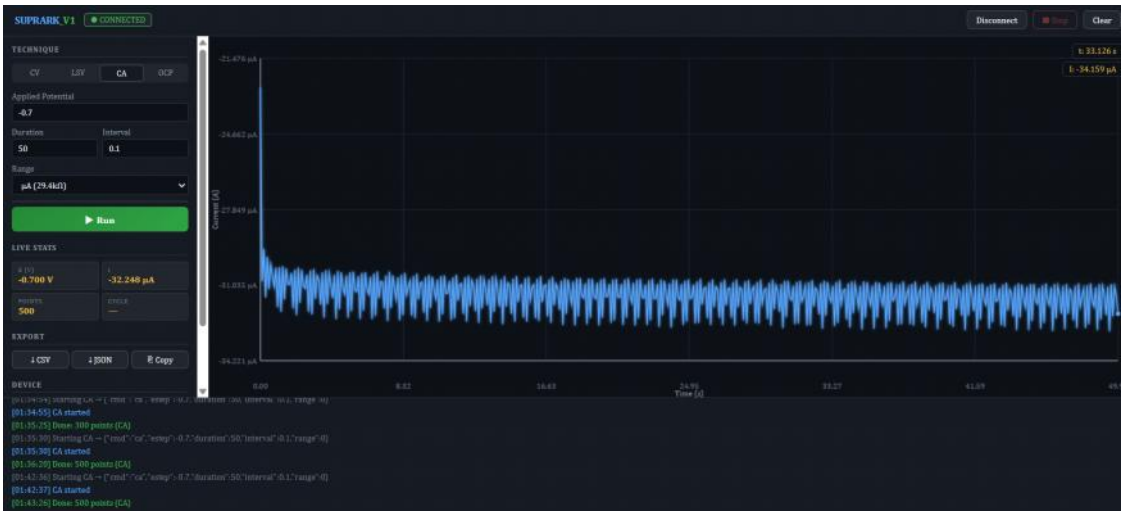
1 mM, p-cresol, -0.7V, run 1



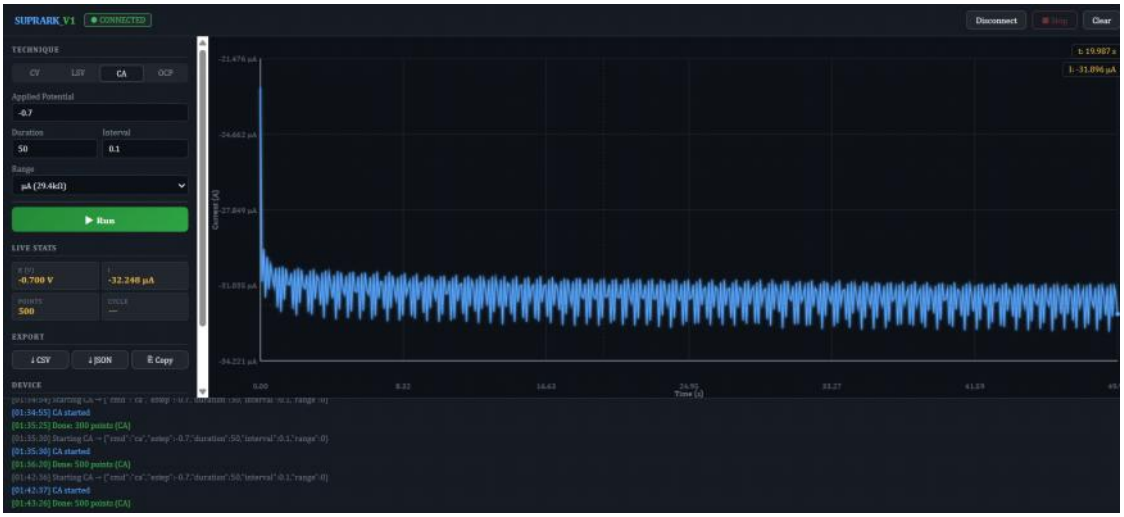
1 mM, p-cresol, -0.7V, run 2



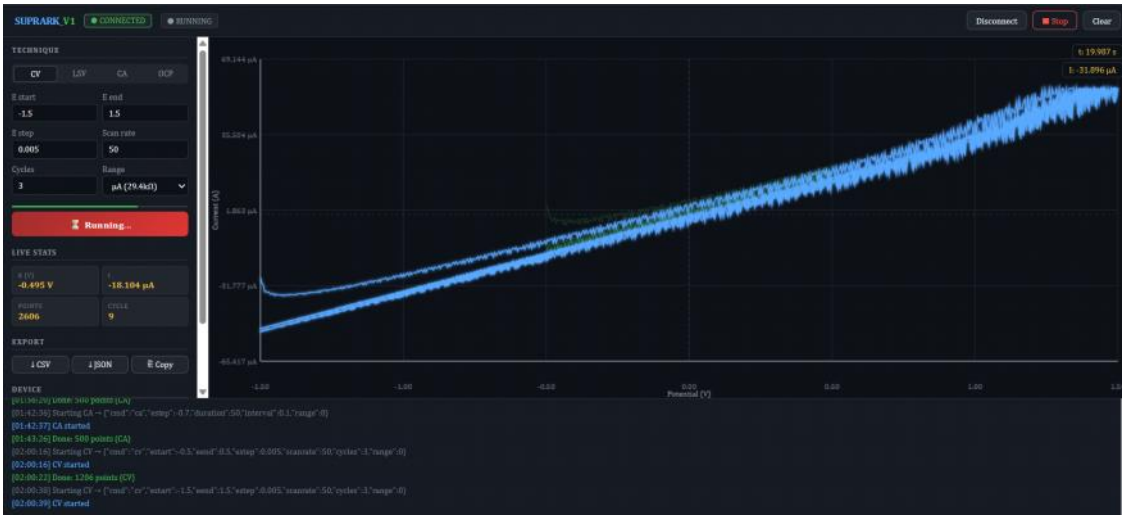
500 uM, p-cresol, -0.7V, run 1



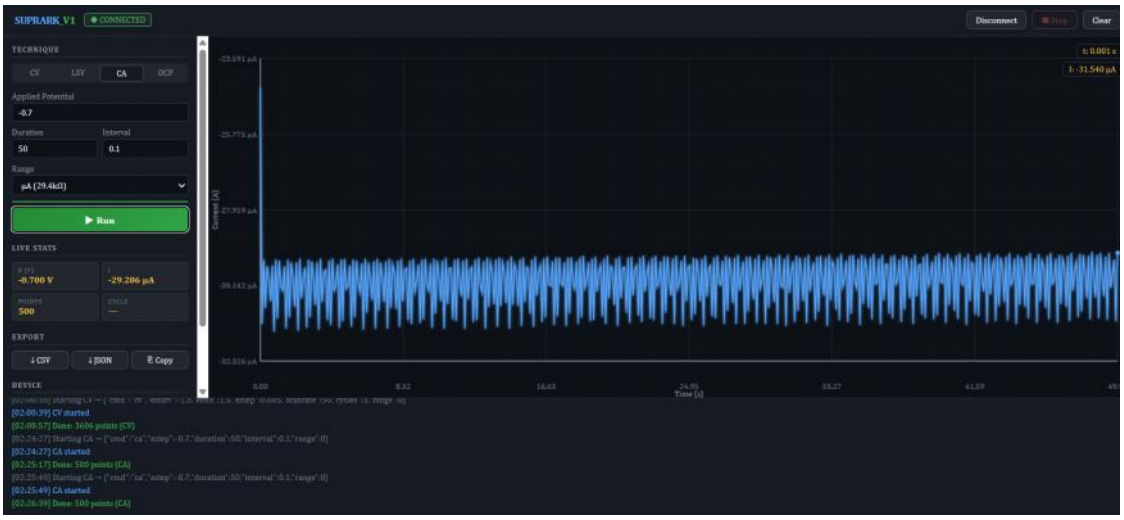
500 uM, p-cresol, -0.7V, run 2



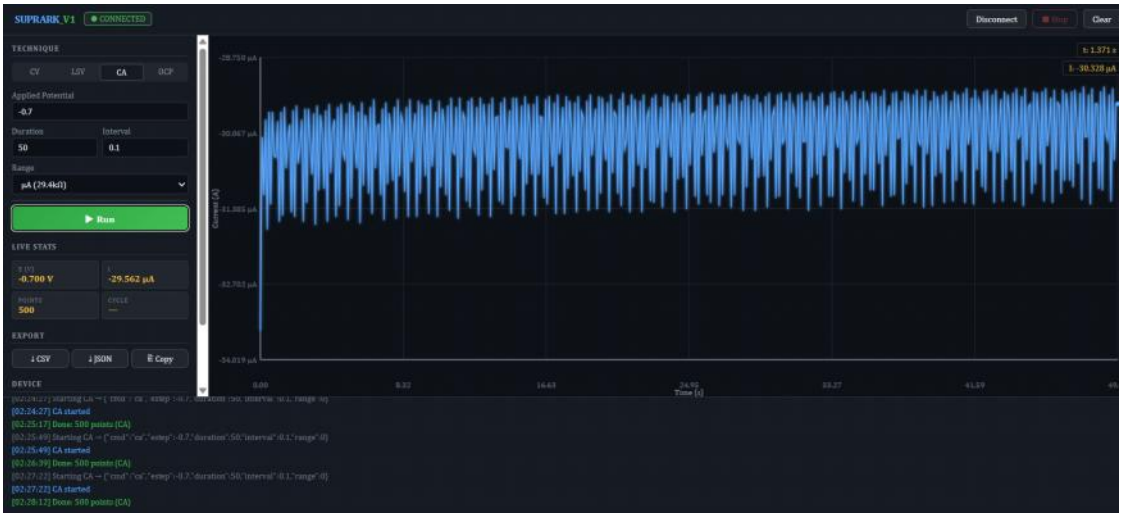
500 uM, p-cresol, -0.7V, run 3



CV, 500 uM, p-cresol



150 uM, p-cresol, -0.7V, run 1



150 uM, p-cresol, -0.7V, run 2

100 nM, p-cresol, -0.7V, run 1

100 nM, p-cresol, -0.7V, run 2

100 nM, p-cresol, -0.7V, run 3

1 pM, p-cresol, -0.7V, run 1

1 pM, p-cresol, -0.7V, run 2

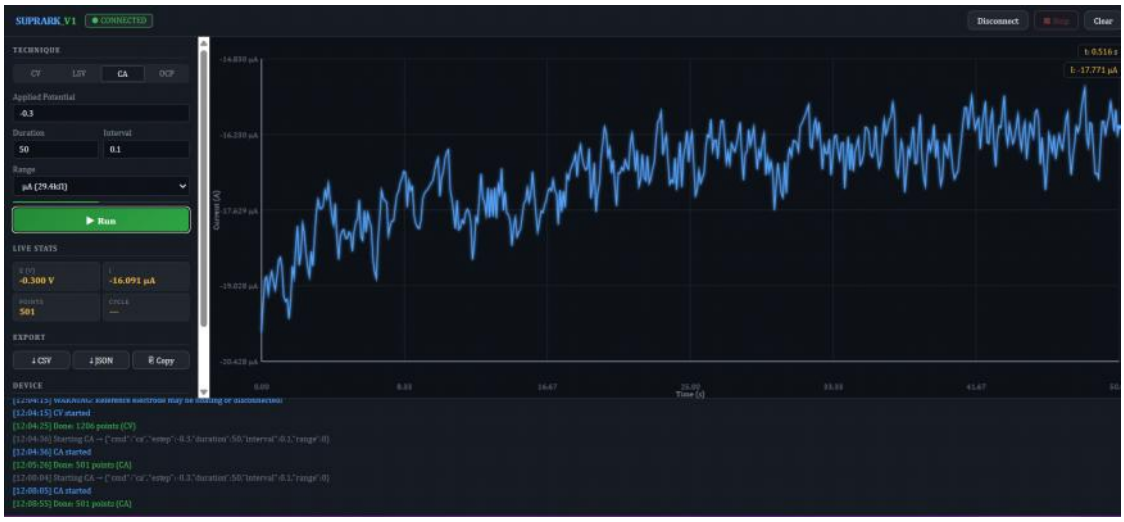
100 fM, p-cresol, -0.7V, run 1

100 fM, p-cresol, -0.7V, run 2

100 fM, p-cresol, -0.7V, run 3

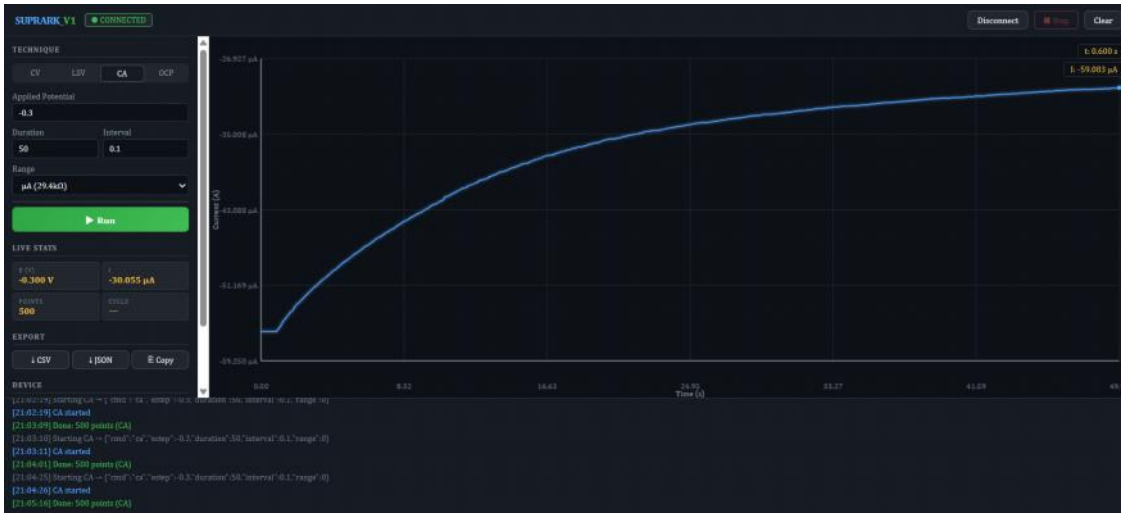
1 mM, p-cresol, -0.7V, run 1

OLED, zobell, v3 code, run 1

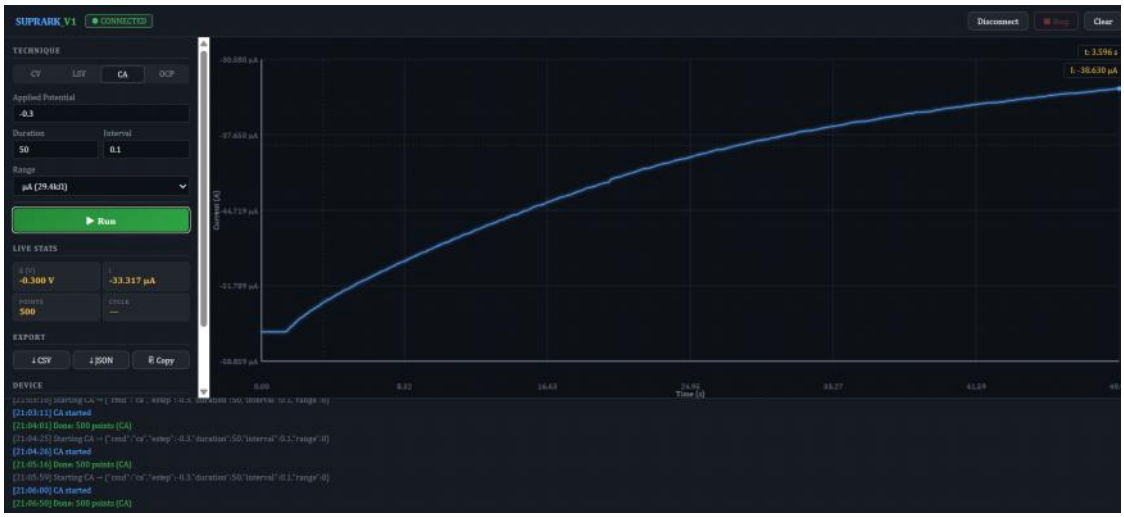


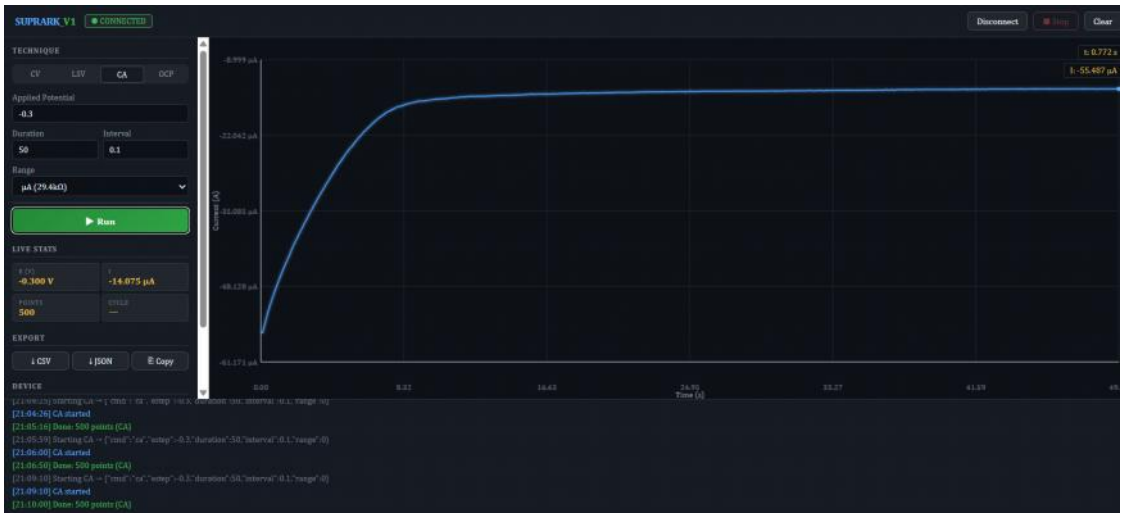
OLED, zobell, v3 code, run 2

OLED, zobell, v3 code, run 3

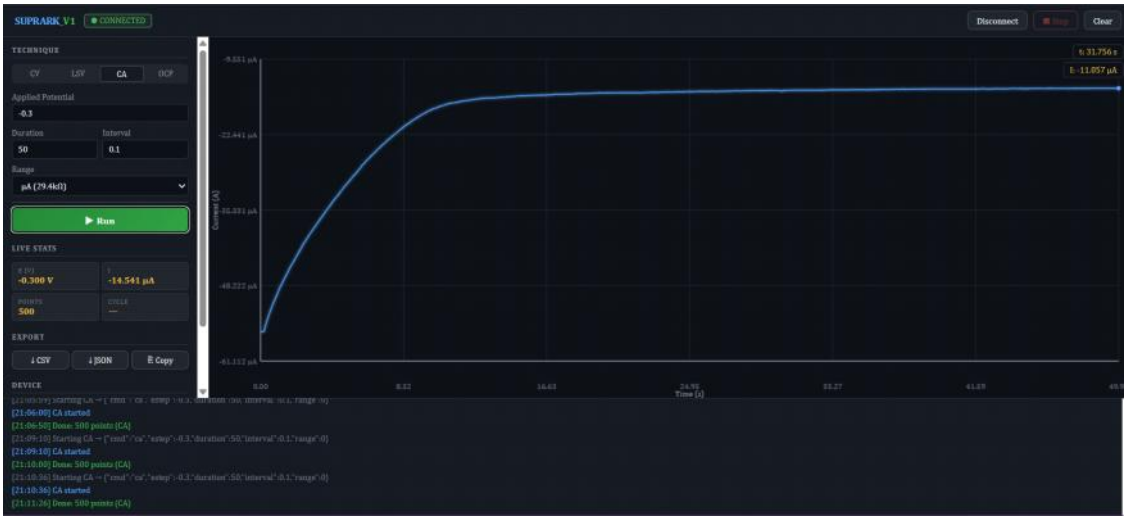


PbS, v1 code, run 1





Zobell, -0.3v, run 1



Zobell, -0.3v, run 1, stabilizng at exactly same voltage, craxxxyyyyyy