

Automation of Electrochemical Square Wave Voltammetry Data Analysis

Steps on using the data automation program

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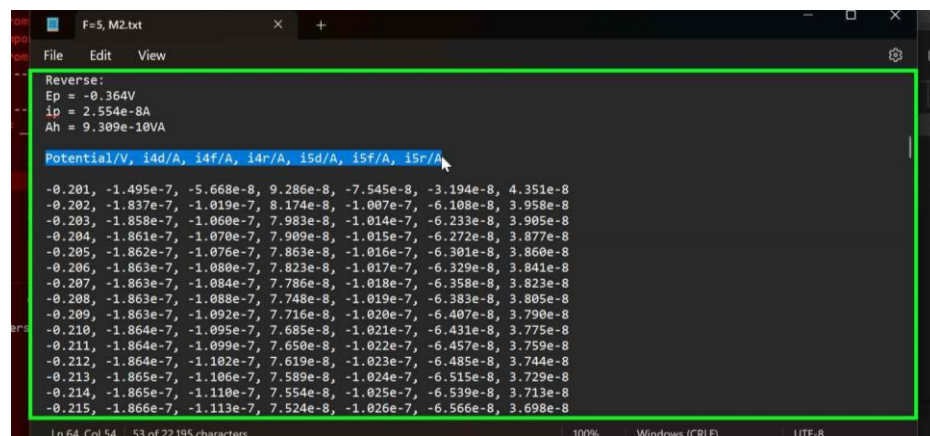
Step 1: Open the program labeled “Ideation Automation”

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Step 2: Click “Browse” and select folder with raw data in “.txt” or “.csv” format.

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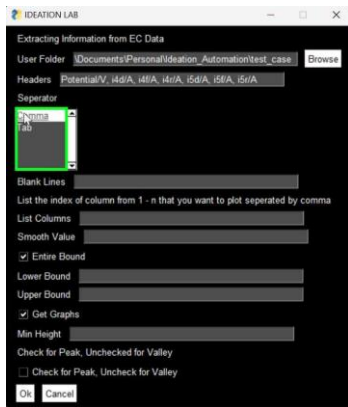
Step 3: Copy headers from the raw data



```
File Edit View
Reverse:
Ep = -0.364V
ip = 2.554e-8A
Ah = 9.309e-10VA
Potential/V, i4d/A, i4f/A, i4r/A, i5d/A, i5f/A, i5r/A
-0.201, -1.495e-7, -5.668e-8, 9.286e-8, -7.545e-8, -3.194e-8, 4.351e-8
-0.202, -1.837e-7, -1.019e-7, 8.174e-8, -1.007e-7, -6.108e-8, 3.958e-8
-0.203, -1.858e-7, -1.060e-7, 7.983e-8, -1.014e-7, -6.233e-8, 3.905e-8
-0.204, -1.861e-7, -1.070e-7, 7.909e-8, -1.015e-7, -6.272e-8, 3.877e-8
-0.205, -1.862e-7, -1.076e-7, 7.833e-8, -1.016e-7, -6.301e-8, 3.860e-8
-0.206, -1.863e-7, -1.080e-7, 7.823e-8, -1.017e-7, -6.329e-8, 3.841e-8
-0.207, -1.863e-7, -1.084e-7, 7.786e-8, -1.018e-7, -6.358e-8, 3.823e-8
-0.208, -1.863e-7, -1.088e-7, 7.748e-8, -1.019e-7, -6.383e-8, 3.805e-8
-0.209, -1.863e-7, -1.092e-7, 7.716e-8, -1.020e-7, -6.407e-8, 3.790e-8
-0.210, -1.864e-7, -1.095e-7, 7.685e-8, -1.021e-7, -6.431e-8, 3.775e-8
-0.211, -1.864e-7, -1.099e-7, 7.650e-8, -1.022e-7, -6.457e-8, 3.759e-8
-0.212, -1.864e-7, -1.102e-7, 7.619e-8, -1.023e-7, -6.485e-8, 3.744e-8
-0.213, -1.865e-7, -1.106e-7, 7.589e-8, -1.024e-7, -6.515e-8, 3.729e-8
-0.214, -1.865e-7, -1.110e-7, 7.554e-8, -1.025e-7, -6.539e-8, 3.713e-8
-0.215, -1.866e-7, -1.113e-7, 7.524e-8, -1.026e-7, -6.566e-8, 3.698e-8
```

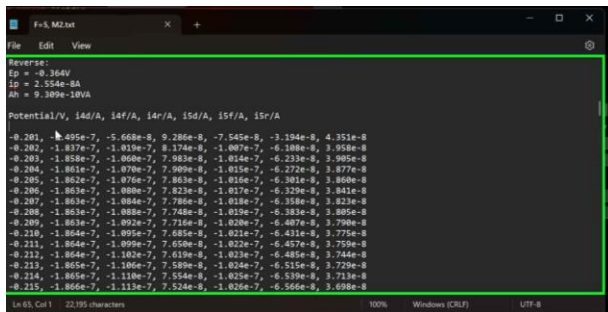
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Step 4: Paste the headers into the header tab of the document and select the relevant separator



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Step 5: Counter number of blank lines separating the headers and the data



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Step 6: (2024-08-08 11:27:50 PM) Add the indexes of the columns of interest, separated by commas



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Step 7: Add a value for smoothing the curve

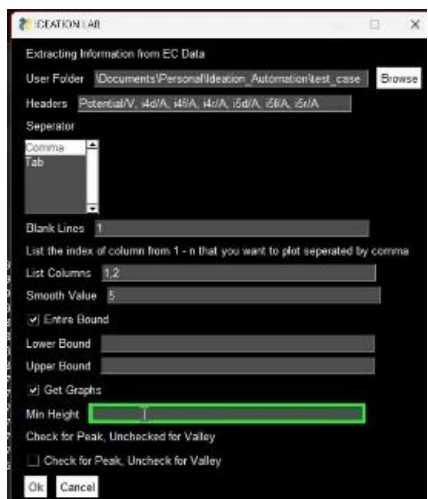


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Step 8: (Optional) Modify the bounds of interest in the data

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Step 9: Insert the minimum height of the peaks (this value is determined using trial and error and is data dependent)

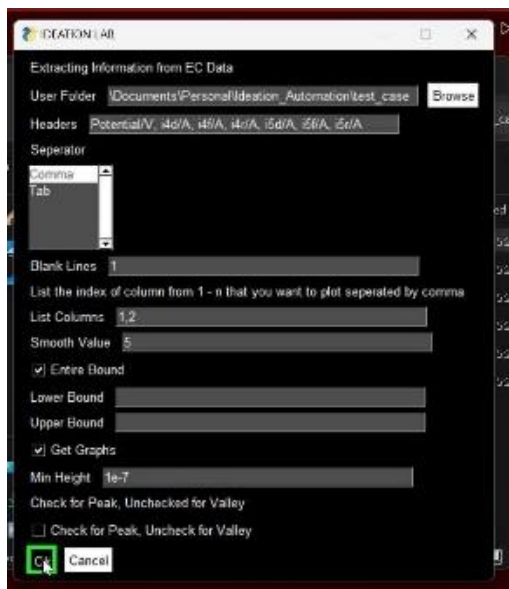


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Step 10: (Optional) Click box to detect peaks instead of minimum values in the graph

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Step 11: Click “OK”



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Step 12: (2024-08-08 11:27:58 PM) Figures and summary documents automatically generated in the folder with the data

| Name | Date modified |
|------------|------------------|
| figures | 2024-09-09 11:01 |
| summary | 2024-09-09 11:01 |
| P=U_M2.txt | 2024-09-09 11:01 |
| P=U_M4.txt | 2024-09-09 11:01 |
| P=U_M6.txt | 2024-09-09 11:01 |
| P=U_M1.txt | 2024-09-09 11:01 |
| P=U_M5.txt | 2024-09-09 11:01 |
| P=U_M9.txt | 2024-09-09 11:01 |

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