KineticAnalysis.py User Guide

General Rules

- Keep all files in the same place.
- Do not make edits to the blank spreadsheet. I named my blank "KineticAnalysisOG.xlsx" and made a duplicate of it every time I did kinetic analysis. The duplicate can be named anything convenient.
- Do not rename files/cells/sheets until process is finished.
- Once the process is complete, everything outside of the "KineticAnalaysisOG.xlsx" file can be fully customized.

General Procedure

1. Make sure the **KineticAnalysis.py** and the copied spreadsheet are in the same location.
2. Open the copied Excel file.
3. Copy and paste the desired Current & Voltage values into the respective sheets (0.2mVs, 0.5mVs, 1mVs) starting from $\tilde{3}$.0V.
4. Delete all cells of the spreadsheet under that of the last current cell.
5. *CHECK: In the sheet labeled "Analysis", check that columns B to I are all formulas. The respective formulas for the columns for the 3rd row should be as follows:*

B3	='1mVs'!D2
C3	='0.5mVs'!D2
D3	='0.2mVs'!D2
E3	=SLOPE(B3:D3,B1 : $D1$)
F3	=D3 - E3*D$1
G3	=F3+E3-D3
H3	=E3*0.2
I3	=ABS(H3)
K3	='0.2mVs'!B2
L3	='0.5mVs'!C2
M3	='1mVs'!C2

6. Close and save the Excel file.

7. Double click **'KineticAnalysis.py'**. The Python interpreter should ask for the name of copied file. Enter the name (without the .xlsx extension). If no files are generated, try again, making sure the correct file name is entered into the script.

8. Several new .xlsx files should be generated. The mVs.xlsx files are for reference to check that the program ran correctly.

9. Open the "Portion" spreadsheet that the program made. Copy the values for the column "New CV-Y" in the "Analysis" tab of copied spreadsheet and paste it into the "New CV-Y" column in "Portion.xlsx." Close the spreadsheet.

10. On the plot, identify the ranges corresponding to where the red CV is outside of the black CV. Write these values down in a random cell.

11. Find those sections in column A, copy the corresponding currents in column B, and paste them in column C. For example, if a region corresponds to voltages of cell A200 - A250, one would copy values for B200 - B250 and paste those values into C200 - C250.

12. Double click the lower right corners of cells D2 and F2. Doing so should extend the formula in the cells across all rows.

13. The % Capacitance value will be displayed in cell I2.