Software installation for Python

1. Install “ANACONDA”. (https://www.anaconda.com/products/distribution)
2. Install “Jupyter notebook” (<https://jupyter.org/>)

Environment Setup

Phrases in [ ] will be key information, and when type, do not include “[” and “]”. Phrases in ( ) is custom sentences, you need to put in your own information based on your condition, do not include “(” and “)”.

Follow steps 1-7 to set up evironment

1. Open [Anaconda Prompt], if you downloaded any product of Anaconda, you should be able to find it by searching in the box next to the windows button.
2. After you open [Anaconda Prompt], you are in a default directory with the base environment. To check your existing activatable environment in Conda, you could type in [conda info --envs]. If you already have a satisfied environment, you could skip to the end of the manual and run the GUI under the satisfied environment.

Text

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1. If you do not have a satisfied environment and want to create a new environment, which is what I suggested. Type [conda create --name (environment name) python=3.8] replace (environment name) with your own environment name. By doing so, conda will ask you to proceed, type [y] and enter.



1. Then, your environment is python 3.8 and ready to download packages, by checking if your environment is created successfully, you could again type [conda info --envs], and the new environment is displayed on the list.

Text

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1. To activate the new environment, you need to type [conda activate (directory of your new environment)].



After doing so, you should be able to see the title changed.



1. Now, you need to download the correct packages, type [pip install hyperspy]. Note that when install hyperspy, you will automatically download a lot of relevant packages, some will be used and some will not.

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A short summary for the procedures for using the HyperSpy EELS analysis codes:

1. Install anaconda
2. Install Jupyter Notebook
3. In anaconda prompt, follow the above environment setup for steps 1-6 to create an environment and install hyperspy
4. \*\*In this environemtn, also install “hyperspy\_gui\_ipywidgets” (this is for “two-step function” code for Mn L3/L2 white line ratio analysis.
5. To use the code of “Hyperspy EELS Mn White Line Ratio.ipynb”, copy the file in the "installation" folder (“https://github.com/chenlabUIUC/OrientedPhaseDomain/tree/main/EELSmapping/Installation”) and paste it in the ".hyperspy" folder in your computer.