# Oxford Instruments
# EDS
# AggieFab
# Texas A&M University

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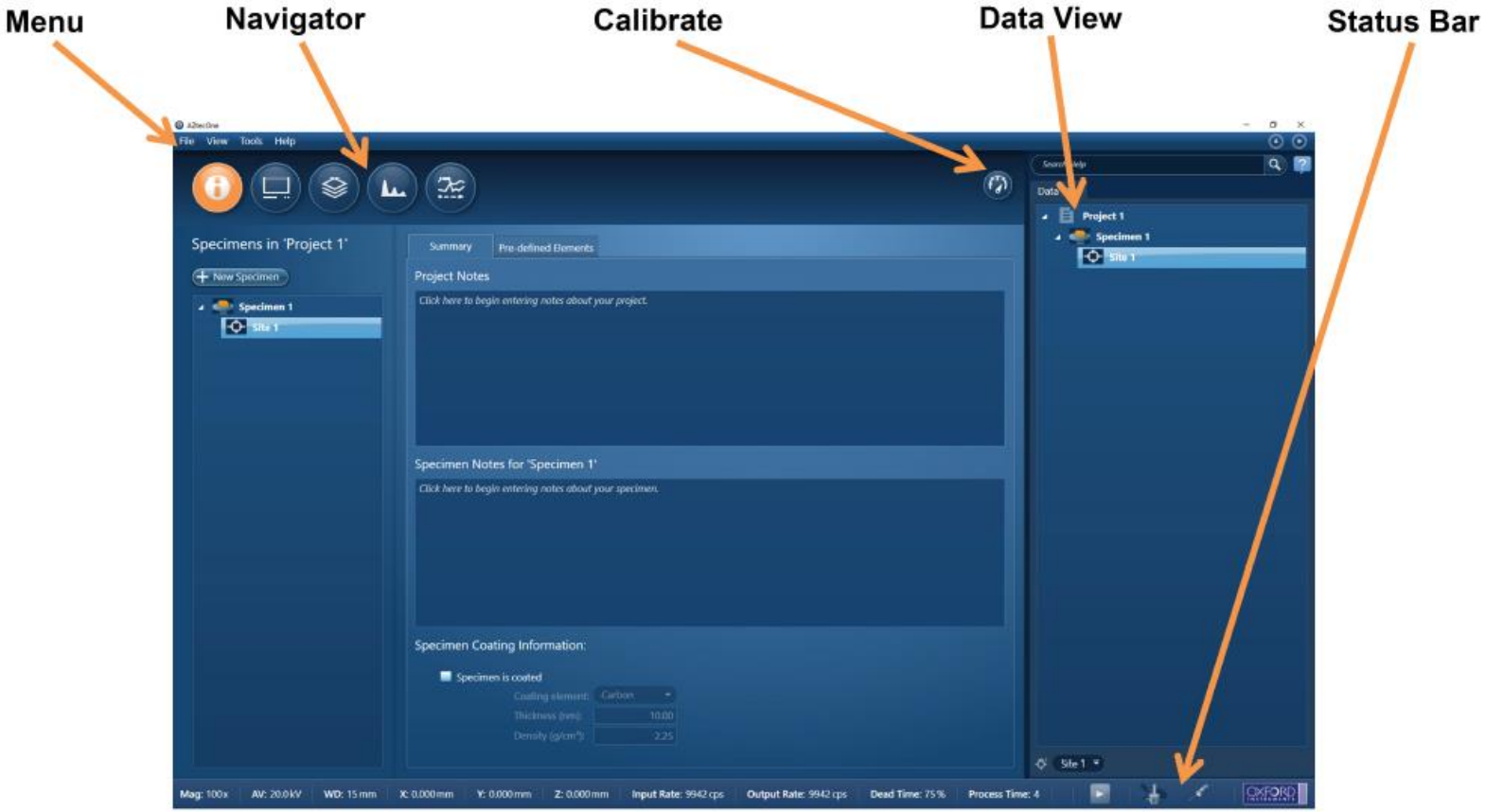
# Scope and Safety

- ❑ SCOPE
  - The purpose of this document is to describe requirements and basic operating instructions for the FEI Helios SEM/FIB System. The use of this tool is limited to approved processes only.
- ❑ SAFETY
  - Be sure that you are trained and signed off to use this equipment.
  - Be sure to keep all doors and protective shields in place before operating this equipment.
  - Use care when operating around high voltage or high current.
  - If you are unsure about any procedure or indication while operating this equipment be sure to contact a staff member or trainer for assistance.

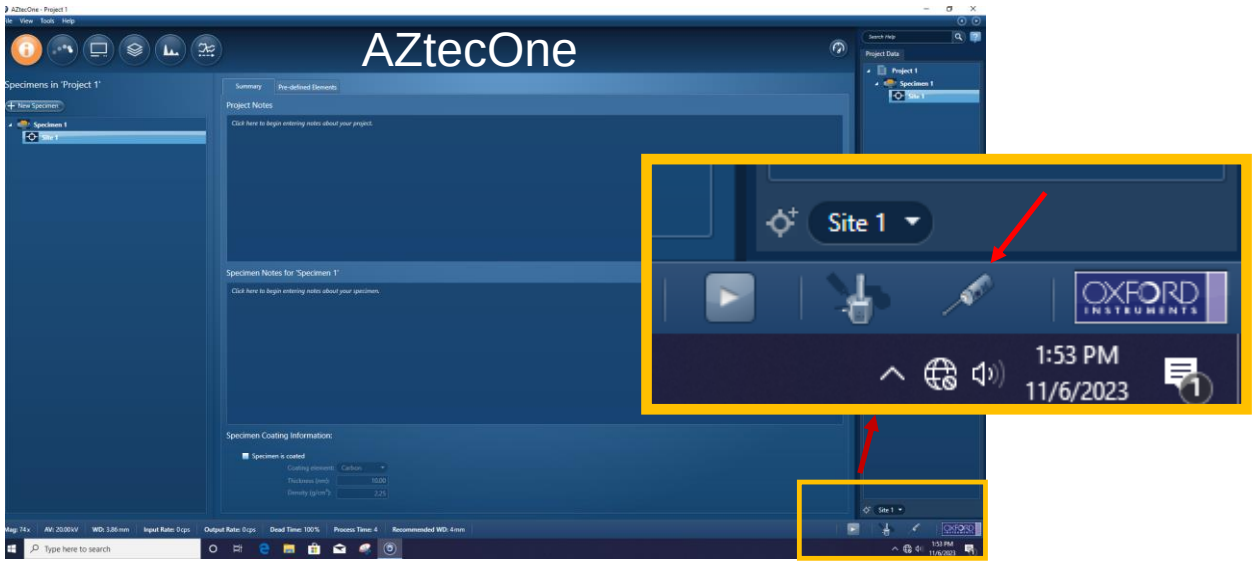
# Starting EDS

1. Start SEM and do the e-beam alignment at 15 kV or higher.
    1. Please refer to the SEM operational manual if needed
2. Turn on the EDS PC monitor
3. Start the EDS operating software: ‘AZtecOne’



# Get EDS detector operational

1. In the status bar, click the icon pointed by the red arrow
2. Thermal tap – click ‘Operate’: **<u>wait until the status changes to ‘Cold’</u>**
3. Insertion tap – click ‘In’ position: you will see the detector moving in.

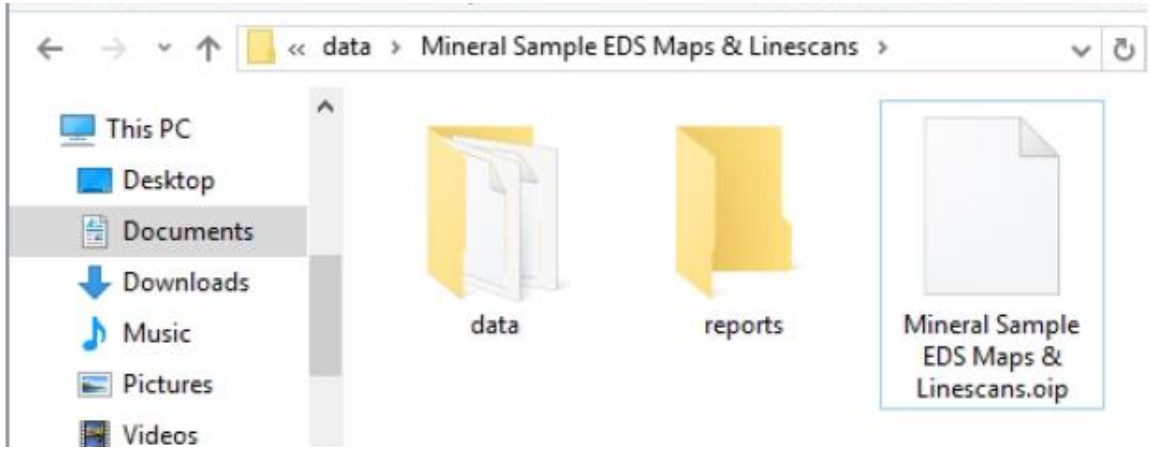



# Project

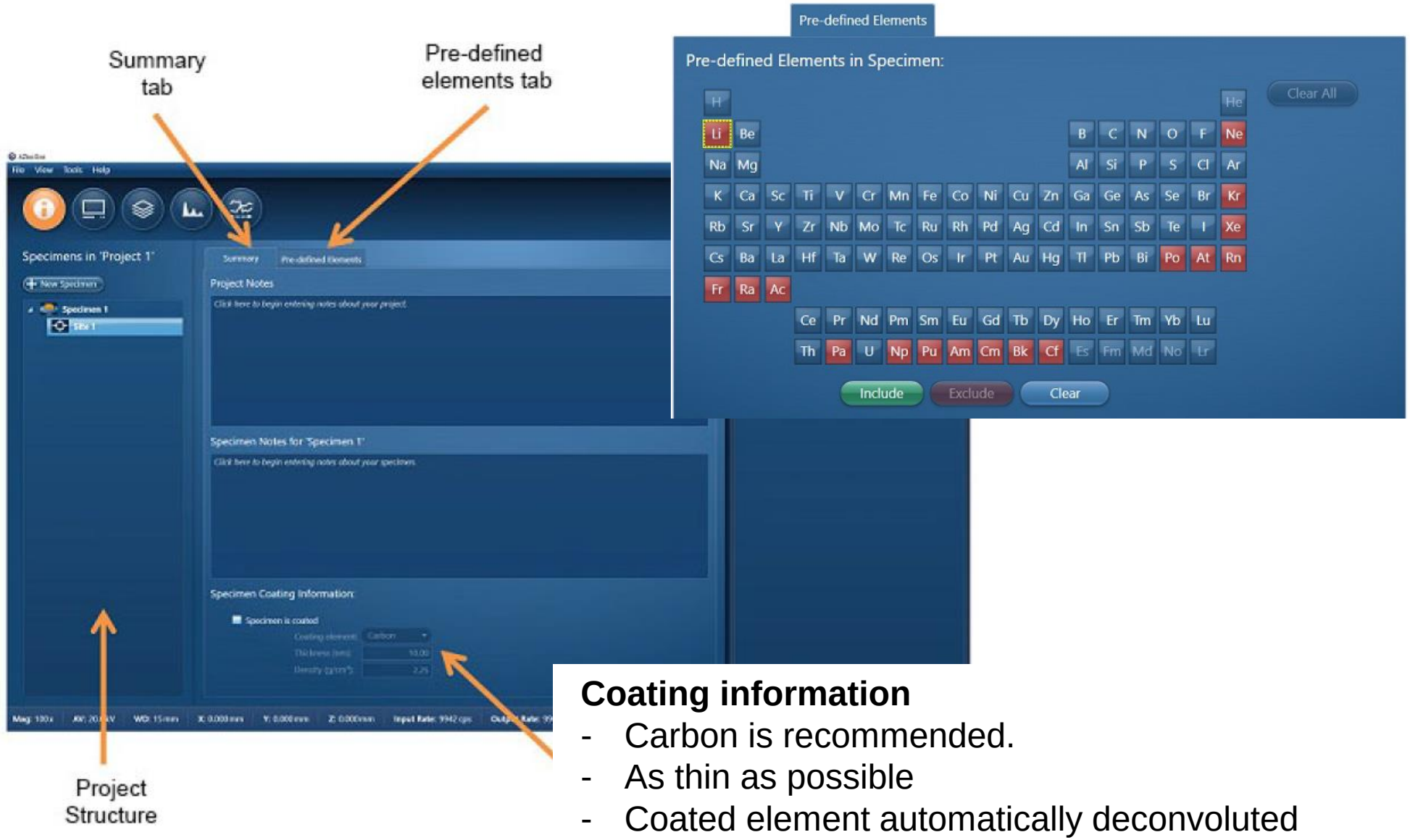

Specimen: one or more sites of interest, for example, sample #. Up to 5 stubs can be loaded.

Site: interested area for data acquisitions

Note: Any project is represented by a folder which is saved with the name and location that you specify when you create and save a new project.



# Specimen Details




**Coating information**

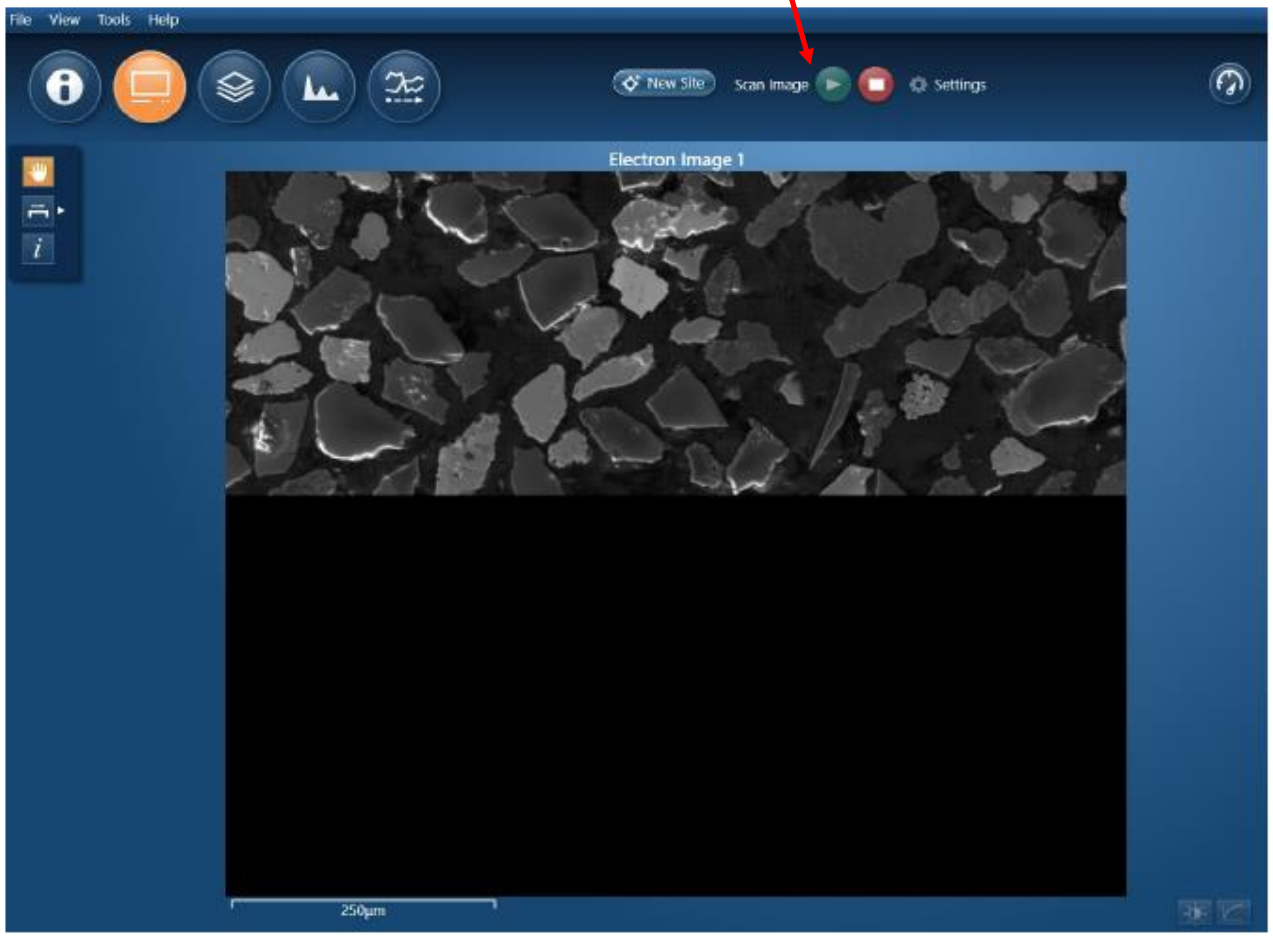
- Carbon is recommended.
- As thin as possible
- Coated element automatically deconvoluted

# Navigator:

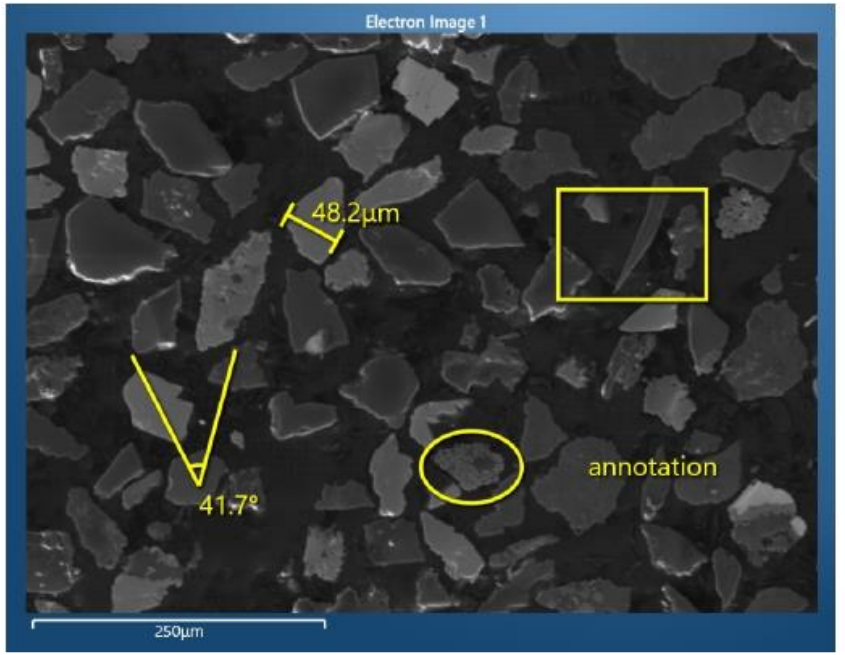

Input Specimen Details
File View Tools Help
Acquire Map Data
Settings
Acquiring Scan SEM image
Acquire Maps
Acquire Spectra
Acquire LineScans

# Scan image

Scan SEM image



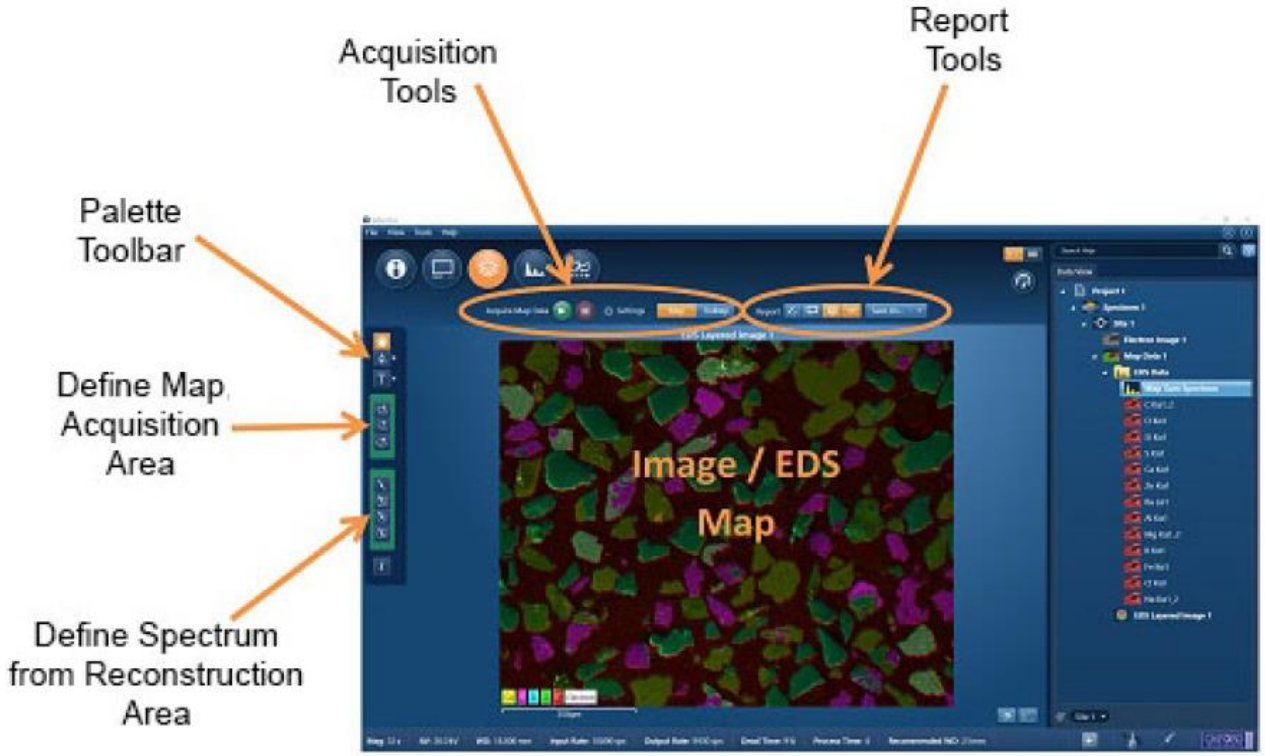

Annotating





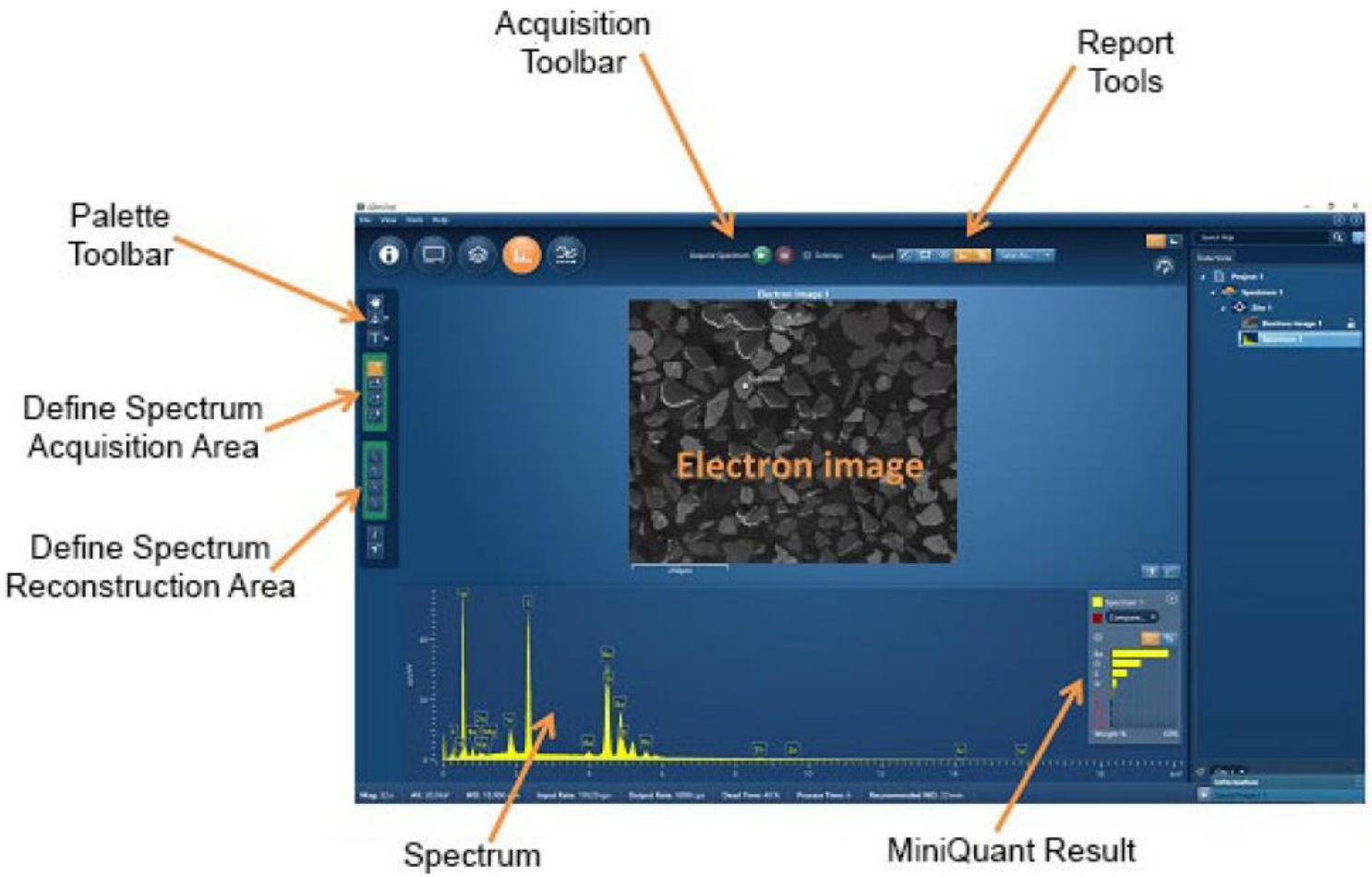
Use the annotating tools if needed

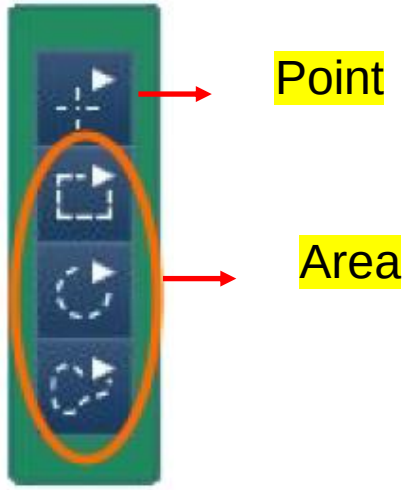
# Map




1. Select the map acquisition tool (left)
2. Outline the acquisition region using mouse drag

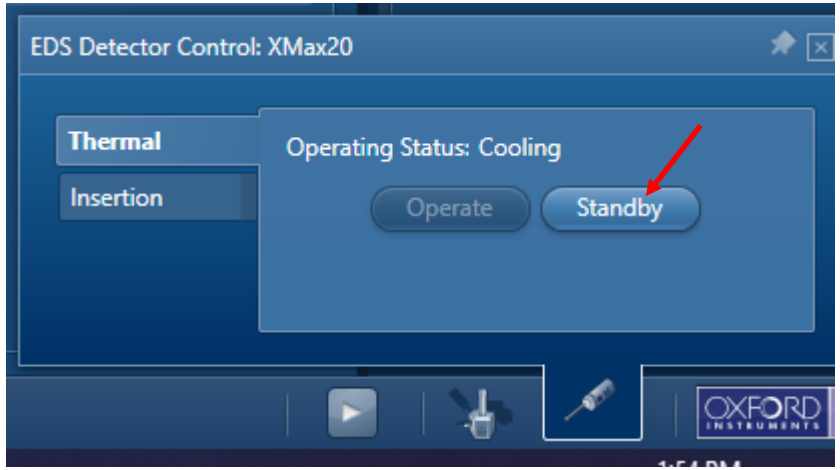
# Spectra


Acquisition Toolbar
Report Tools
Palette Toolbar
Define Spectrum Acquisition Area
Define Spectrum Reconstruction Area
Electron image
Spectrum
MiniQuant Result


Point
Area

# Finishing EDS

1. ‘Thermal’ tap – click ‘Standby’
2. Insertion – click ‘Out’
3. Close the ‘AZtecOne’
4. Power off the monitor



# Revision history

**SIGNATURES AND REVISION HISTORY**

1. Original author of this document: Dr. Sung Oh Woo
2. Original author Title or Role: Research Engineer
3. Date of original: 8/1/2024
4. Revision B notes: description of the LMIS handling is added

**Approvals:**
Technical Manager Signature:___Sandra Malhotra

Date: 8/2/2024

| Revision | Author | Date |
|---|---|---|
| Original Issue | Sung Oh Woo | 8/1/2024 |
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