

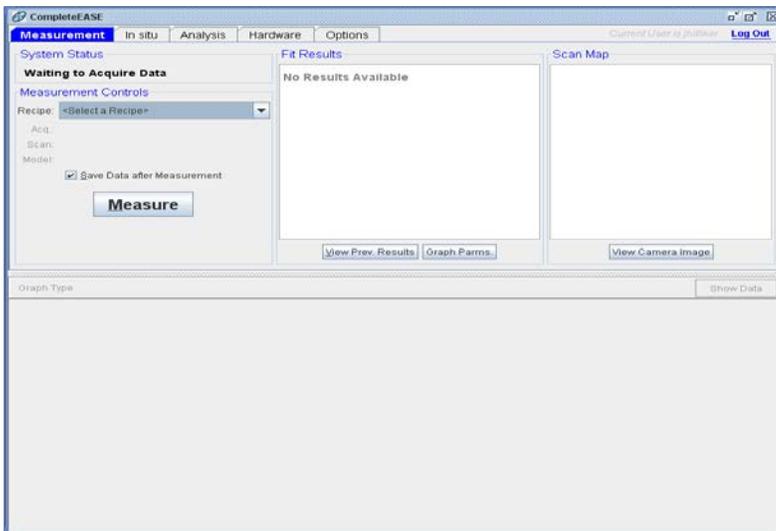
# Woollam Spectroscopic Ellipsometer Operation Instructions



## Operation steps:

1. Load the sample on the chuck. Turn on vacuum switch.

Figure below shows a screen of *Measurement* tab. Due to the number of choices for any measurement (how to measure, where to measure, etc.), CompleteEASE uses a “Recipe” to describe all details. These recipe files can be created and saved for any specific measurement or sample type.



2. Select a recipe under Recipe: choose from File Dialog.
  - 2.1 Click on the folder:User Data to show all available recipes.
  - 2.2. Select a desired recipe (most users use recipe: **Si with transparent film 1 point**). Click measure to start.
  - 2.3 Create a file name to save raw data.
  - 2.4 Sample stage will move to the optical path and a screen of sample tilt alignment will appear.
  - 2.5 Align sample tilt by manually adjusting two knobs on the sample stage to move red cross lines on the screen to match black cross lines.
  - 2.6 Click Cancel Alignment when complete.

Note: Repeat previous step if the alignment screen appears again.

3. System starts acquiring data if tilt alignment is accepted.

3.1 When measurement is complete, a measurement summary table is reported. Model fitting lines will be displayed in Graph Window with measured data.

3.2 Verify Model(dotted lines) fits well against measured data(solid lines) and check MSE value  $<10$ .

3.3 Click on Analysis for different model (Si with Absorption Film, etc.) if the film is not transparent.

3.4 Click on fit to refit your raw data.

3.5 In Analysis tab, several parameters can be turned on/off for fitting as needed. New materials can be inserted from Library. The fitted film can be saved as a material. Refer to ellisometer manual for detailed information or contact staff.

Need help?

Contact Paul Horng X4827

horng@udel.edu