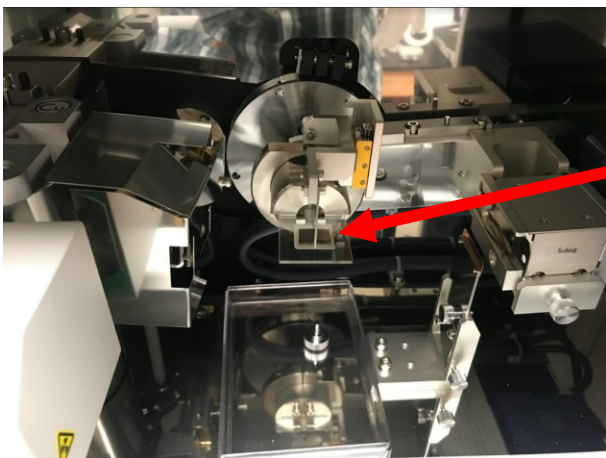

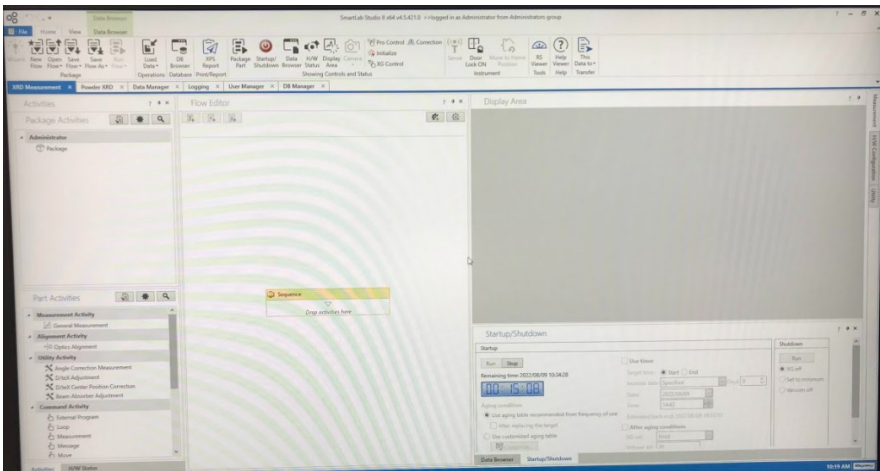


## Operation manual for Rigaku Miniflex 600

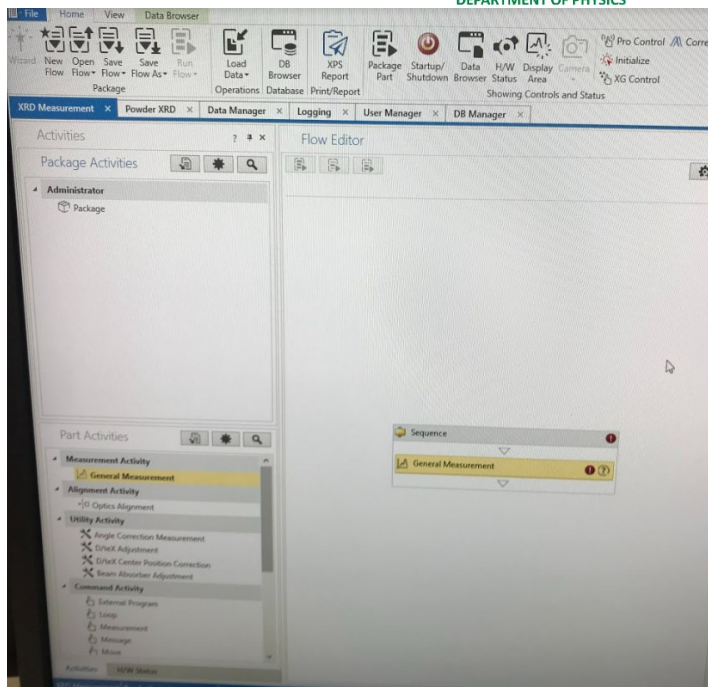
1. Supply the cooling water. Turn on the Rigaku cooling water unit located on the ground.
2. Start the Miniflex control PC.
3. Press the power on button (green button) on the front side of Miniflex.
4. The Door Lock button will blink, representing the status of the unlocked door. You can gently open the door, and mount your sample on the glass holder and onto the standard sample stage. Press the Door Lock button to lock the door, the blink yellow light will be off.



5. Make sure that the OPERATE lamp on the front side of Miniflex turned yellow.
6. Start up SmartLab Studio II  on the Miniflex control PC.
7. On the right bottom tab, Click Run to startup the X-ray tube. This can take ~17 mins.



8. Drag the [General Measurement] plugin tab to the [Sequence] in [Flow Editor] in SmartLab Studio. Left click on [General Measurement].



9. Keep all values unchanged in [Optical Conditions]. Modify the [Measurement Conditions] to fit your experimental condition. Select the file path to your folder. Change the parameters as below:

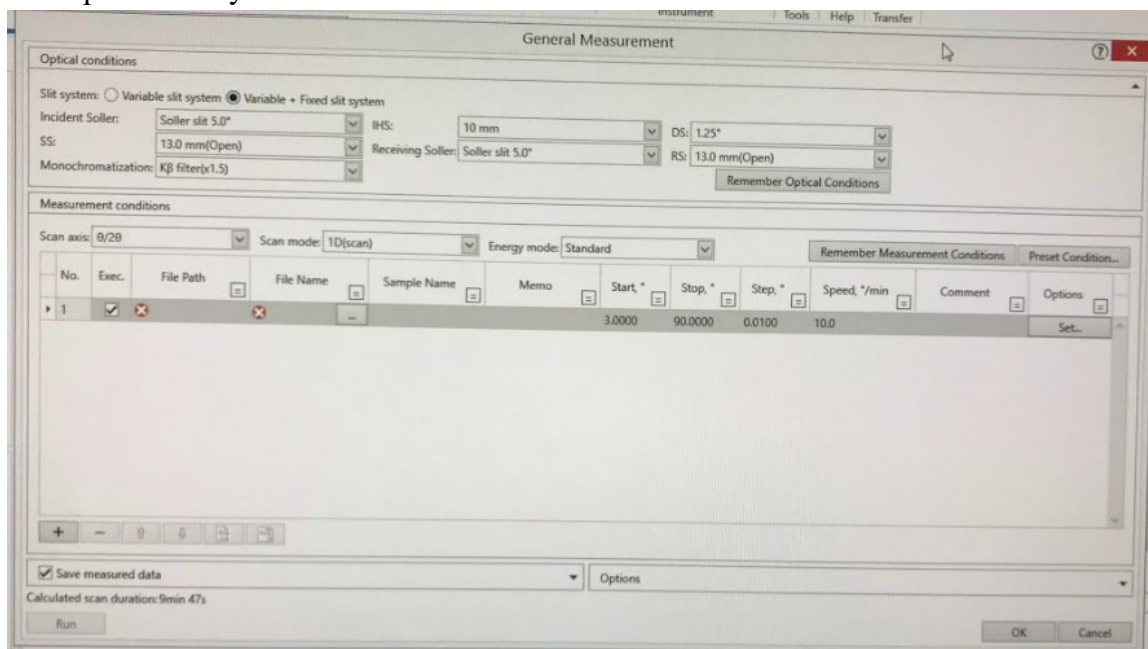
Start:  $3^\circ$  (**minimum  $2.5^\circ$** )

Stop:  $90^\circ$  (**maximum  $139^\circ$** )

Step:  $0.01^\circ$  (**minimum step  $0.005^\circ$** )

Speed:  $10^\circ/\text{min}$  (**speed range  $0.01$  to  $100^\circ/\text{min}$** )

Once finished setting, pay attention to the calculated scan duration at the bottom left, this is the period that your measurement will take.



10. Click the OK button to complete the settings.
11. Once the aging time is completed for the X-ray tube, you can start the measurement by clicking on the [Run] button from the [General Measurement] tab.
12. Data will be auto-saved after measurement.
13. Select [XG Off] and click the [Run] button to stop the X-ray generation.
14. When the X-ray generation stops, the orange X-ray warning lamp on top of the enclosure will turn off.
15. Wait at least **three minutes** after X-ray generation stopped, and press the Power off button (a white button) on the front side of Miniflex.
16. Take your data and shut down the control PC.
17. Wait for at least **five minutes** and the cooling water temperature shown on the panel is **below 84 F**, then stop the cooling water.
18. Fill in your name, date, time in, and time out on the XRD logbook.

Learning materials:

[1] SmartLab Studio II User Manual is accessible at [File] – [Manual] on the ribbon in SmartLab Studio.

[2] MiniFlew 600 instruction manual is accessible at [Home] – [Help Viewer].