

Contact [Ying Oi](#) or [Justin Scanlon](#) for training or any problems while operating the Rigaku MiniFlex. For booking go [here](#). You will need an [MSE user account](#). You also will need to have radiation safety training provided by [OSEH](#) and obtain Dosimeter Rings by filling out the [form](#) and returning it to Ying. Please fill out the form in the attachments and bring the **original** copy when you come for your training. Fill out the **user** section and have your **advisor** fill out the section provided. An account **shortcode** and **account contact** will be required as well. **ALL TRAINING MUST BE GIVEN BY MSE TECH STAFF.**

Due to the door alarm causing a disturbance to possible lectures\classes, please check the class schedule outside of 2224 for the availability of the unit. You may also ask GSI\Professor to allow for the MiniFlex's usage

A. Turning on X-Ray

1. Press the "Power ON" (green button) switch located on the front of the unit.
2. Wait until Yellow lighted button is flashing and beeping is heard.
3. Push Yellow lighted button to lock the door.
4. Startup "MiniFlex Guidance" software and wait until dialogue boxes automatically close.
5. Load your personal profile stored in your user folder.
6. Turn on X-Rays Under "Control>XG Control" menu, verify that the voltage is set to **20kV** and current at **2mA**. Then press "On" button.
7. Wait until the Orange light on top of the MiniFlex unit is turned on.
8. It will take approximately 20 minutes for the X-Ray tube to warm up before capturing data.

B. Loading sample

1. Push Yellow lighted button to unlock the door. Wait until unit begins to beep before opening the door.
2. You do not need to worry about being exposed to x-rays, because the shutter will close when you open the door.
3. Place your sample into the MiniFlex.
4. Push Yellow lighted button to lock the door.

C. Setting up and running a scan

1. Press the yellow "1. General Measurement" button on the left-hand side of the software
2. Check one of boxes to highlight and edit the scanning information.
3. Manually enter the folder information in the first field, file name information in the second or press the "." button to browse to the directory and file name
4. Then place the sample title into the "Sample Name" field.
5. Then choose a condition number (No.1-No.10)
6. Then press "Set Measurement Condition"
7. An additional window opens allowing you to edit the measurement conditions
 - i. Start and stop angle (**between 2 and 130 degrees**), step (**as small as 0.005 degrees**) and speed (**0.01 to 100 degrees/minute**)
 - ii. Most samples should be run at 40kV and 15mA
 - iii. Do not edit the top portion :
 1. Variable + Fixed Slits System
 2. Solar slit: 5deg
 3. IHS: 10mm
 4. DS: 1.250deg
 5. SS: 13mm (open)
 6. Solar Slit (REC): 5deg
 7. RS: 13mm (open)
 8. Monochromatization: Monichromator
 - iv. Click "OK"
8. Either click "Run" or Click "OK" and then "Run" on the left-hand column.
9. Message appears saying "Executing general measurement" and the scan begins (by default showing autoscale).

10. When the scan is completed, the MiniFlex will return to its datum position (10deg., sample at 5deg.)

D. Exporting data

1. 3 different files are saved upon completion of scan with the extensions: .ras, .raw, .asc
2. Use the **.RAW** file for analysis in JADE
3. To save data as a .txt, go under "File>Export"
4. You can examine the diffraction data using the "Jade" program, which is on the two computers directly across from the MiniFlex computer. Transfer using either the internet or usb drives (one is kept in the vicinity).

E. Shutting down X-Ray

1. Go to "Control>XG Control"
2. If it's the end of the day turn settings to 20kV and 2mA, click "set" button, and close the "MiniFlex Guidance" software
3. If it's the end of the week, click the "OFF" button and then:
 - i. Close "MiniFlex Guidance" software
 - ii. Wait 3 or more minutes
 - iii. Then press the White button to turn off unit.
 - iv. You do not need to turn off the computer

NEVER, UNDER ANY CIRCUMSTANCES, ATTEMPT TO BYPASS SAFETY INTERLOCKS.