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1. Application to:

All personnel working on the micro Photoluminescence set-up (micro-PL)

2. Pre-requisite for Operation of micro-PL:

- 2.1. Must have attended the operation and safety training.
- 2.2. Must be fully understand the system risk assessment.
- 2.3. Must know how to run PL software, optical microscope and Laser unit.
- 2.4. Must have N3 Laser user license.

3. Hazards that may be present:

- 3.1. Eyes damage.

4. Personal Protection Required:

- 4.1. Special Goggles, Gloves.

5. Procedures:


5.1. Operating the micro-PL

Put on the PPE as per section 4 before start work with Laser.

- 1. Turn on the laser by turning the key and let it stabilize and warm up for half an hour.



(Laser power supply)

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2. Select the right filter which you want to use
 - a) no filter
 - b) 0.1, 1.0, 2.0 or 3.0 (Label A)
3. Place the sample on the stage of the optical microscope.
4. Power "on" the lamp of the Olympus microscope using the on/off switch and adjust its intensity using the lever on the bottom right. (Label B)
5. View the sample and adjust it to its optimized height by viewing through the microscope to get a clear hexagonal image.
6. Push both the levers (Label C) inward to its end and lever (Label D) to the right when taking the measurement.

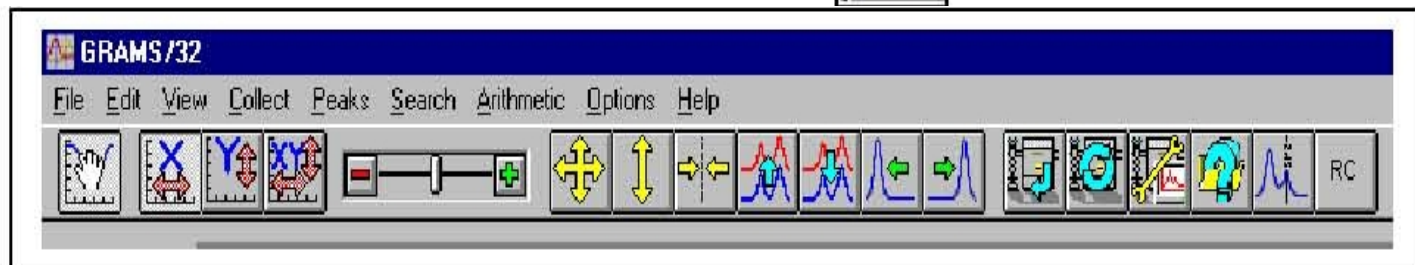
For measurement

7. Take note of the Taskbar.

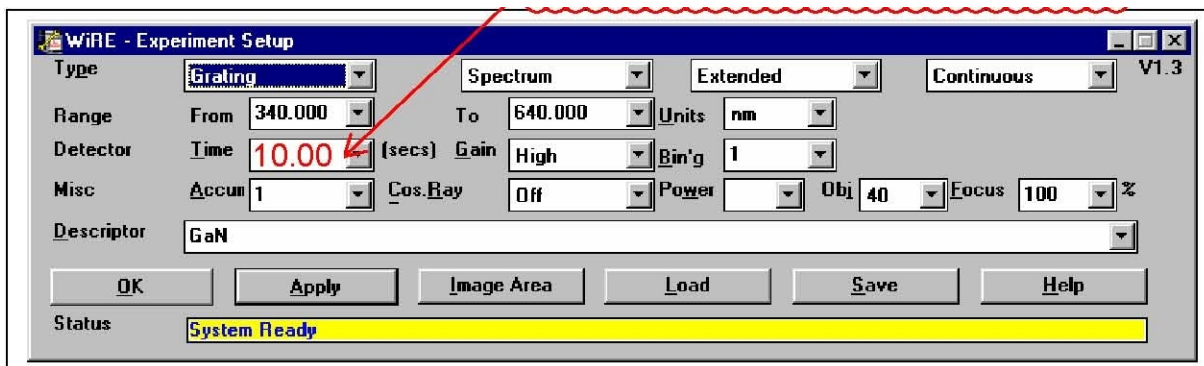
8. Click the forth button from the left of the software toolbar




to open the "setting" window.



9. The below inset will appear and set the Range accordingly. **Time for scan can not be less than 10 seconds and the frequency range is from 330nm to 700nm.**



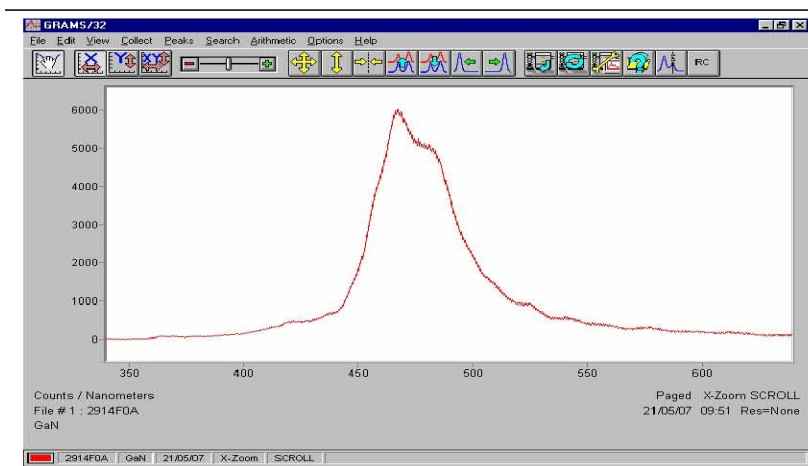
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10. Double click the sixth button from the right of the software toolbar



to start the scan.

11. The scanning of the data will take sometime and is dependent on the Time of Detector, Range and Accum. **Please be patient and DO NOT OFF the software.**



(Scan result of micro-PL)

12. The micro-PL scan obtained will be as shown above.

13. Click on the file, Save as and insert the filename.

14. Click on file again, import/export to convert the file to ASCII format.

Completion of Measurement

15. After all experiments finished, turn off the laser power. (* **Never close the operation software.**


* After laser power has been turn off, if need to use PL again, wait for half an hour before turn on the laser power)

16. Switch off lamp to the optical micro scope.

17. User record

1. Identify process steps and record in respective record.

2. Inform the super user /supervisor if encounter the problem.

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5.2 Maintenance of the micro-PL

5.2.1 * Never close the operation software.

5.2.2 Check Laser sources to keep at idle.

5.2.3 Check Optical microscope and lens.

6. Communication Frequency:

The Lab Supervisor shall arrange for this Safe Work Procedure to be communicated every once a year and as & when required.

Prepared by: Thwin Htoo

Approved by: A/Prof Chor Eng Fong