UNIVERSITY of CALIFORNIA · IRVINE

Laser Spectroscopy Facility

Hitachi F-4500 Fluorometer

Operation instructions

1. Make sure that the computer is off. Shut down the computer if needed.

2. Turn on the **Power** switch at the lower left of the instrument.

3. Wait for at least 2 minutes. Press and hold the **Xe lamp button** till it ignites, a yellow LED should light up.

4. Turn on the **Main** switch to on position; the green **Run** LED should flash briefly.

5. Turn on the computer.

6. Login at F4500 instrument, there is no password. The software should launch automatically. The instrument will make a grinding noise as the monochromator initializes. The green **Run** LED should turn on and remain on.

7. Click on the **Method button** on the right hand side of the screen.

   - Under **General tab**, select the type of Measurement: emission, excitation and fixed
   - Under the **Instrument tab**, select the **Scan Mode**
   - Under **Data Mode**: fluorescence, luminescence, or phosphorescence.
   - Enter values for the Excitation (EX) Wavelength, Emission (EM) Wavelength range, EX Slit Width, EM Slit Width, and Scan Speed (15 nm/minute to 30,000 nm/minute).
   - Make sure the Excitation wavelength and Emission wavelength settings do not overlap. For example: an emission scan of Ruthenium (Ex = 450nm) with the slits set at 5 nm, the emission wavelength range should begin at 565nm (3x slit width) *above* the excitation wavelength and should end at 885nm which is 15 nm *below* 2x the excitation wavelength
   - Put a check in the Shutter Control box; this blocks the excitation beam from striking the sample except during measurement.
   - Monitor (sets the Y-scale for the spectrum display).
   - Processing (selects Savitsky-Golay smooth), and Peak Finding: Rectangular.
   - Click **OK button**.

8. Click on the **Sample button**. Type in your sample name.

9. Click on the **Measure button** to start the spectrum. Xe Shutter will open.

10. When spectrum is done, there will be two windows on the screen: the Monitor Window (raw data) and the Data Processing Window. You can select either window. To find peaks Click on Peak find Icon

11. When finished, close the **FL Solutions** software.

12. Turn off the **Main** switch.

13. Turn off the **Power** switch and turn off the computer.