FLUORACLE® SOFTWARE HIGHLIGHT

SC-41 Plate Reader

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High-throughput Measurements

Automating measurements is an excellent way to increase the ease and speed of acquisition. Using microwell plates enables high throughput fluorescence measurements as hundreds of samples can be set to automatically run without the need for manual sample exchanges between measurements.

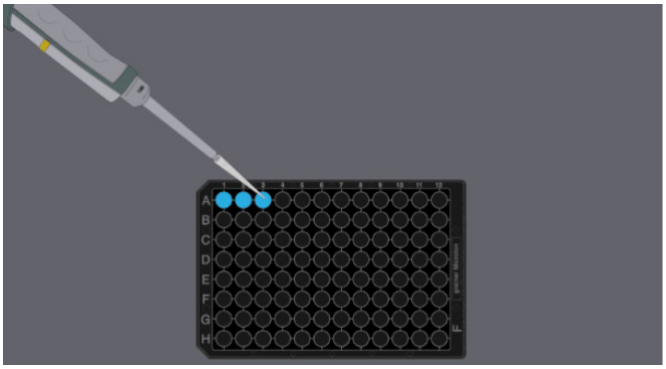

Figure 1: Microwell plate.

SC-41 Set Up

The SC-41 Sample Module, Figure 2, inserts into the sample compartment of the FS5 Spectrofluorometer. It can hold standard and custom well plates allowing up to 384 measurements to run automatically. After being placed in the FS5 the SC-41 is automatically recognised by Fluoracle®, and the user defines which microwell plate design is being used. New plate designs can be created by specifying the number of wells and plate dimensions.

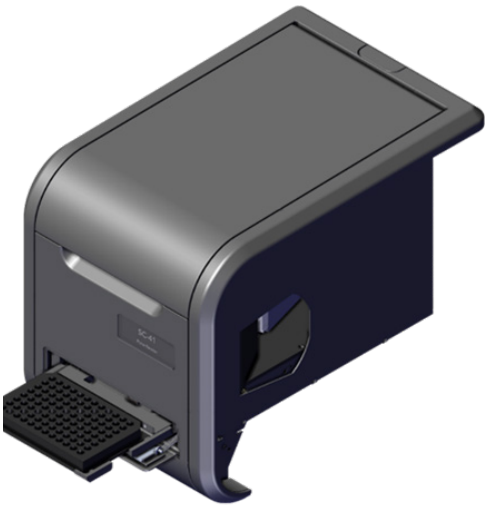

Figure 2: SC-41 Plate Reader Sample Module.

The template of the microwell plate is visualised on the signal rate screen, Figure 3. Right-clicking on a well moves the plate reader to that well position for checking signal rates and optimising measurement parameters. Left-clicking a well highlights it in blue meaning that well is set to be measured.

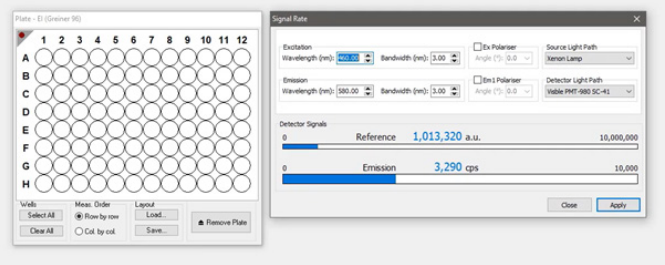

Figure 3: Microwell plate setup in Fluoracle.

Spectral Measurements

Here, wells A1-A5 were selected for emission spectral measurement. The wells contained a solution of a fluorophore at different concentrations and the change in concentration investigated by measuring the emission spectrum of each well, Figure 4. The intensity of the emission is proportional to the concentration of the fluorophore.

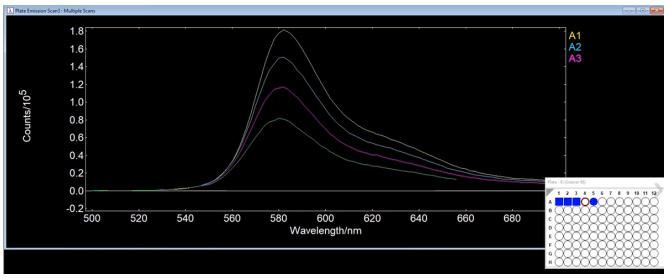

Figure 4: SC-41 Plate Reader emission measurements.

Lifetime Measurements

The SC-41 Plate Reader can also measure fluorescence and phosphorescence lifetimes using the TCSPC and MCS lifetime electronics of the FS5 Spectrofluorometer. In this example nanosecond fluorescence lifetimes of the same five fluorophores were measured using TCSPC. Since, the same fluorophore was present in the five wells the same fluorescence decay was obtained for each well.

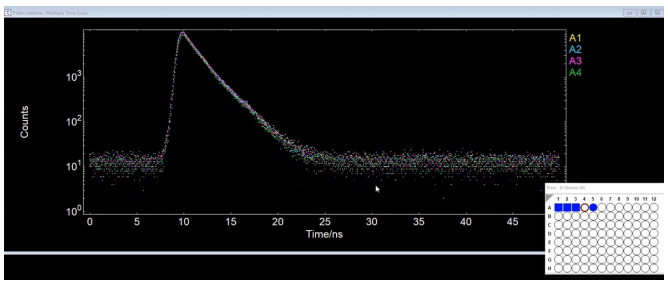

Figure 5: SC-41 Plate Reader fluorescence lifetime measurements.

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Conclusion

Using the SC-41 Plate Reader, steady–state and time resolved measurements of multiple samples can be acquired automatically with the FS5 Spectrofluorometer.

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