Fluorescence Up-Conversion Lifetime Measurements

The SSSC fluorescence up-conversion system is used to measure the lifetime of short-lived fluorescent molecules in solution. The sample solution is exposed to an ultra-short laser pulse (400 nm) and the fluorescence emitted is monitored for intensity my mixing (up-conversion) it in a nonlinear crystal with another ultra-short laser pulse (800 nm), the probe. By delaying the time at which the probe pulse reaches the non-linear crystal, and mixes with the fluorescence, the intensity of the up-conversion can be monitored as a function of decay time. The up-conversion process is the sum frequency generated in the non-linear crystal by the combination of the fluorescence and the 800 nm probe light resulting in a wavelength shorter than that of the fluorescence. Lifetimes in the sub-nanosecond range can be measured using this technique.

Specifications

Excitation wavelength	400 nm
Measurements	Decay lifetime Rise-time Cross-correlation FWHM 200 fs

Settings

This system uses the Verdi/Vitesse / RegA /OPA suite.

More…