

Pre-class preparation questions

Please read the background on lasers, luminescence quenching and the borate buffer system.

1. What is the difference between fluorescent resonant energy transfer and quenching?
2. What two experiments are required to obtain the fundamental rate constants k_f and k_{nr} ?
3. Derive the Stern-Volmer equation.
4. Plot the FRET distance function on a scale from 0 to 1.
5. Which TCSPC electronics element determines the time resolution of the experiment?
6. Why is a deconvolution necessary when obtaining data using a TCSPC system on the nanosecond time scale?