Fluorescence Correlation Spectroscopy (FCS)

Fluorescence correlation spectroscopy (FCS) is a correlation analysis of fluctuation of the fluorescence intensity. The analysis provides parameters of the physics under the fluctuations. One of the interesting applications of this is an analysis of the concentration fluctuations of fluorescent particles (molecules) in solution. In this application, the fluorescence emitted from a very tiny space in solution containing a small number of fluorescent particles (molecules) is observed. The fluorescence intensity is fluctuating due to Brownian motion of the particles. In other words, the number of the particles in the sub-space defined by the optical system is randomly changing around the average number. The analysis gives the average number of fluorescent particles and average diffusion time, when the particle is passing through the space. Eventually, both the concentration and size of the particle (molecule) are determined. Both parameters are important in biochemical research, biophysics, and chemistry.[1)]

see Introduction to Fluorescence Correlation Spectroscopy.

1)

http://en.wikipedia.org/wiki/Fluorescence_correlation_spectroscopy

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