FAST

Fluorescence Analysis Software Technology

EDINBURGH INSTRUMENTS
Photonics Division

Advanced Analysis of Fluorescence Kinetics:

- **Discrete Component Analysis**
- Distribution of Lifetimes
- **Global Analysis**
- Stretched Exponentials
- **Förster Kinetics**
- Micellar Quenching
- **Time Resolved Anisotropy**

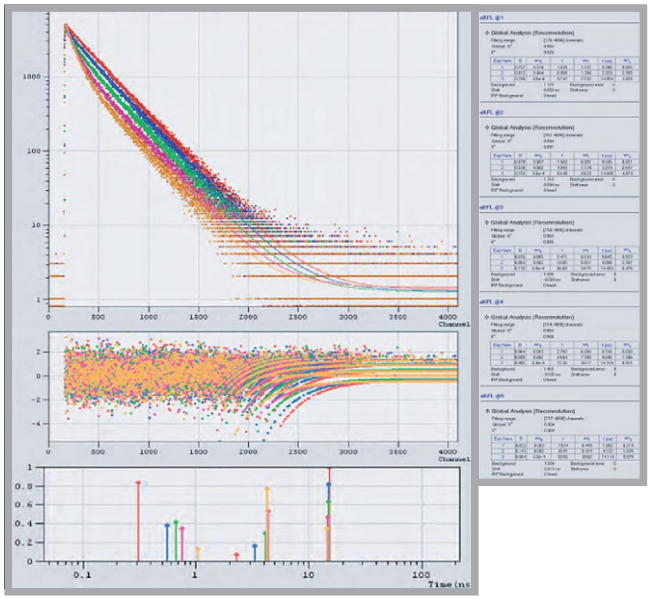
FAST (Fluorescence Analysis Software Technology) is a sophisticated software package designed for the analysis of fluorescence and phosphorescence decay kinetics.

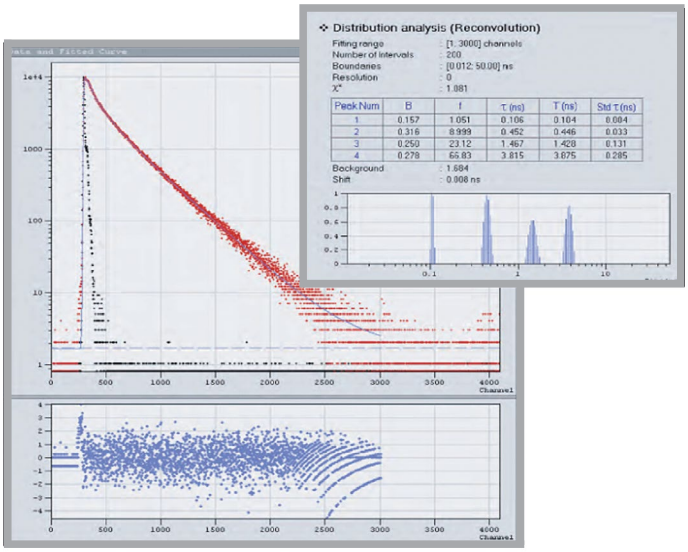
FAST software is robust, easy to use and exceptionally fast. The FAST software package contains a library of advanced data reconvolution and curve fitting routines based on proprietary data processing algorithms.

The variety of analysis models comprises of:

- Discrete Component Analysis of up to 4 exponential terms with no initial estimates required
- Distribution of Lifetime Analysis with a "grid" of up to 200 lifetimes
- Global Lifetime Analysis with unsurpassed flexibility for both data file formats and fit parameter options
- Stretched Exponential Component Analysis
- Förster Kinetics and Micellar Quenching
- Time-Resolved Fluorescence Anisotropy decay models ranging from simple spherical rotational diffusion to multiple aspherical rotor diffusion

FAST is the ultimate solution to meeting the increasing demand for reliable and accurate information.





Global Multi-Exponential Analysis –

Global Multi-Exponential Decay Analysis of a set of decay curves. The Global Analysis Sub-Routine allows one to test decay models for common (linked) lifetime parameters.

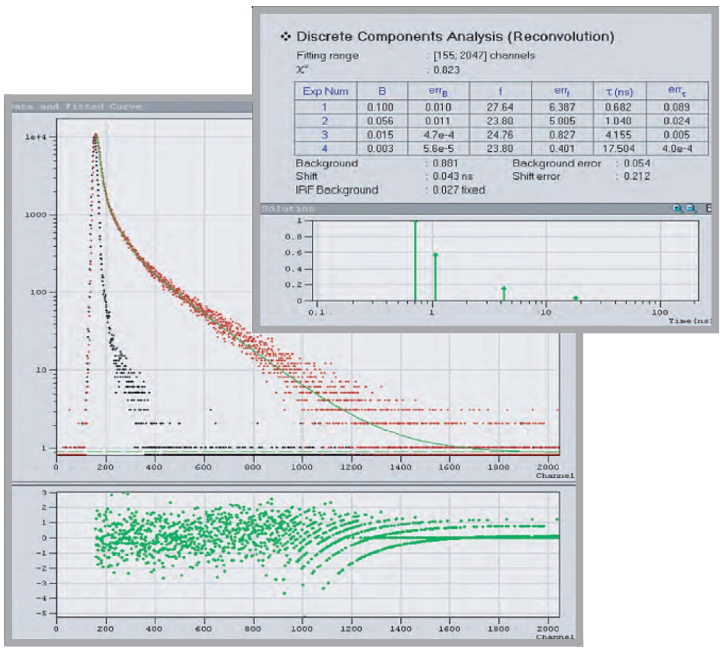
Stretched Exponential Components Analysis –

Some fluorescence phenomena can be described with a model function that is known as Stretched Exponential Function or Kohlrausch Quenching Model. This is a model with a faster initial decay than standard exponential processes, and a longer tail.

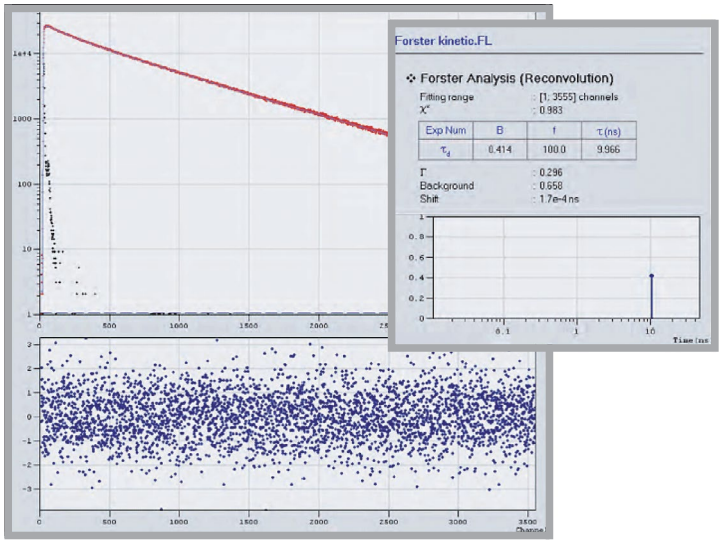
FAST offers the fitting of fluorescence decays with up to four stretched exponential terms. Shift and background may be left as fitting parameters, or may be fixed.

Lifetime Distribution Analysis –

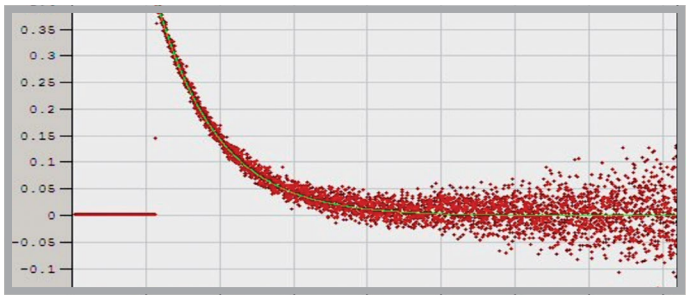
Exponential series method combined with NTSVD (Non-Negative Truncated Singular Value Decomposition) technology. The algorithm does not require predefined shapes of the distributions. Best results are obtained for "smooth" resolutions. A-priori information can be added resulting in improved resolution.



Discrete Component Analysis –
GLSA (Global Least Square Analysis) technology provides improved search for global minimum by choosing the most reliable change direction for parameters on each iteration and by an adaptive differentiation technique. The algorithm is 100% convergent with either automatic choice of initial values or manual parameter control.



Förster Kinetic –
Fitting routine based on GLSA for the analysis of Förster kinetics between donors and randomly (homogeneously) distributed acceptors. The model assumes that the diffusion of the participating molecules can be neglected. The algorithm is fast and 100% convergent.



Micellar Quenching –
Fluorescence kinetics of Fluorophores embedded in micelles can often be described by the "Micellar Quenching" model.

FAST is the ultimate solution to meet the increasing demand for reliable and accurate information. The software is continually being improved and regularly updated.

Customer support is available worldwide, from the moment you enquire through to our post sales installation support.

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