

Las fluctuaciones como fuente de información en la espectroscopía de fluorescencia: de la oligomerización de proteínas hasta la dinámica de estados excitados

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TRANSMISIÓN POR YOUTUBE DESDE EL CANAL DEL DQIAQF

Abstract:

The use of fluorescent probes in the biologically-related disciplines is widespread and continues to grow. In addition to visualization, fluorescent probes with properties that are sensitive to the physical and chemical properties of the environment are often used to characterize biological systems at the nanoscale. We are mainly interested in two aspects of biological fluorescence: 1) the development and applications of fluorescence-based techniques to investigate biopolymer structure and conformational dynamics in a variety of timescales and 2) the study of the photophysical properties of fluorescent probes in biomolecular environments. The latter is becoming increasingly important to interpret and design experiments that rely on the observation of single molecules, where the individual transitions between 'bright' and 'dark' states contribute to fluctuations in the signal in a wide range of timescales.

In the context of biophysical research, the analysis of fluorescence fluctuations can be used to gain useful dynamic information about the system. Examples include Brownian diffusion, conformational fluctuations in biomolecules, binding equilibria, and aggregation. In this presentation I will illustrate applications of these and other spectroscopic approaches to problems ranging from protein oligomerization to excited-state dynamics.

