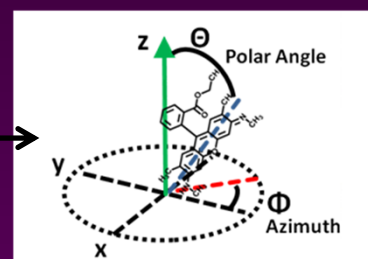
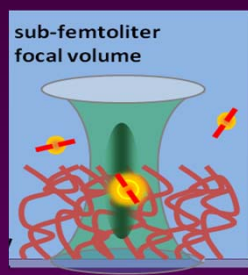
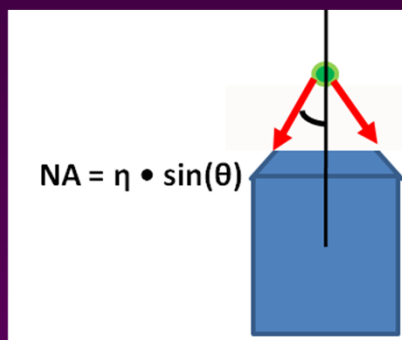


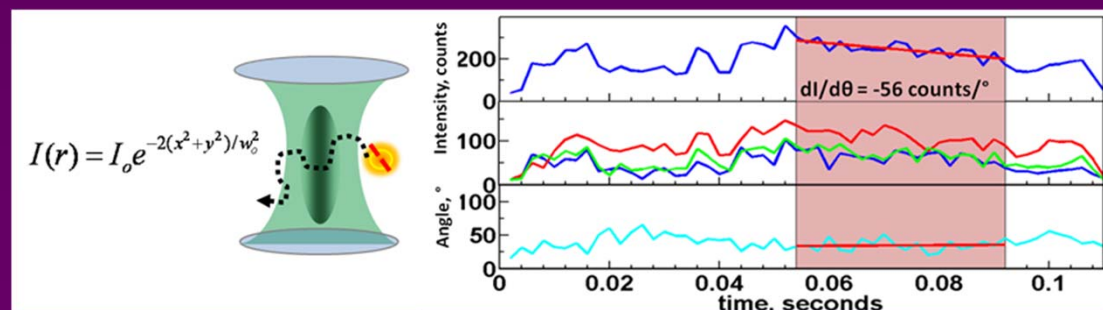
Transport in Supported Polyelectrolyte Membranes

Christy F Landes, Rice University Department of Chemistry, Houston TX 77251-1892

3-D Orientational Dynamics In Polyelectrolyte Brushes: In order to achieve the overall goal of understanding the relationship between charge/mass transport within a supported polyelectrolyte membrane, it is necessary to quantify the three-dimensional nature of the transport of counterion probes within the membrane. This can be accomplished by exploiting the properties of confocal optics.



The three dimensional dynamics studies revealed the following modes of heterogeneous transport in the brushes: 1) translation with restricted rotation; 2) orientation switching; 3) a unique 3-D orientation for each type of brush.



Advanced Data Analysis Techniques

The resolution of heterogeneous interactions probed in single-molecule experiments is dominated by shot-noise. Optimized wavelet signal processing techniques were developed to reduce the effects of shot-noise in single molecule equilibrium and kinetic measurements. The improved resolution results in the complete and accurate characterization of both simple and heterogeneous smFRET systems.