

Dynamic fluorescence Stokes shift near phospholipid bilayers for complete environmental response

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Polar environmental dynamics of the headgroup region of phospholipid bilayers were obtained by time-resolved fluorescence spectroscopy in the range from 1 ps up to 15 ns. Combining results from fs broadband fluorescence upconversion spectroscopy (FLUPS) and ps time correlated single photon counting (TCSPC) gave time-resolved fluorescence spectra of dye molecules (Laurdan) embedded in POPC vesicles. The resulting dynamics of the time-dependent Stokes shift are in agreement with theoretical studies,[1] and can be assigned to movement of water molecules and lipid headgroups.

Reference:

[1] Barucha-Kraszewska, J.; Kraszewski, S.; Jurkiewicz, P.; Ramseyer, C.; Hof, M. *Biochimica et Biophysica Acta - Biomembranes* **2010**, *1798*, 1724-1734.