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Title:	How to study picosecond solvation dynamics using fluorescent probes with small Stokes shifts
Authors:	Silori, Y. (/jspui/browse?type=author&value=Silori%2C+Y.) Dey, Shivalee (/jspui/browse?type=author&value=Dey%2C+Shivalee) De, A.K. (/jspui/browse?type=author&value=De%2C+A.K.)
Keywords:	Solvation dynamics Time-correlated single photon counting Xanthene dyes
Issue Date:	2018
Publisher:	Elsevier B.V.
Citation:	Chemical Physics Letters, 693, pp. 222-226
Abstract:	Xanthene dyes have wide ranging applications as fluorescent probes in analytical, biochemical and medical contexts. Being cationic/anionic in nature, the solvation dynamics of xanthene dyes confined within a negatively/positively charged interface are very interesting. Unfortunately, the floppy structure and small Stokes shift render any xanthene dye unsuitable for use as a solvation probe. Using di-sodium fluorescein, we present our work on the picosecond solvation dynamics of bulk and confined water (at pH = 9.2). We also propose a new methodology for studying picosecond solvation dynamics using any fluorescent dye with a small Stokes shift. We discuss how scattering contributions can be effectively removed, and propose an alternative way of defining zero time of solvation. Finally, we demonstrate the tuning location of the probe within confinement.
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