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Excited-state symmetry breaking of linear quadrupolar chromophores: A transient absorption study

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The photophysical properties of two highly symmetrical quadrupolar chromophores were studied by both steady-state and transient absorption spectroscopy. Their excited-state behavior is dominated by the solvent-induced Stokes shift of the stimulated-emission band. The origin of this shift is attributed to symmetry breaking that confers a non-vanishing dipole moment to the excited state of both compounds. This dipole moment is large and constant in DMSO, whereas symmetry breaking appears significantly slower and leading to smaller excited-state dipole in toluene. Time-dependent increase of the excited-state dipole moment induced by weak solvation is proposed to explain the results in toluene.

Biography

Nadia Dozova obtained her PhD in Physical Chemistry at Université Pierre et Marie Curie in 2006. She is an Assistant Professor in the Pasteur lab (Université Pierre et Marie Curie, École Normale Supérieure, CNRS) since 2009. Her current research interests focus on ultrafast spectroscopy (broadband transient absorption, fluorescence up-conversion). She is interested in photo-induced processes in supramolecular constructs and photoactive proteins.

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