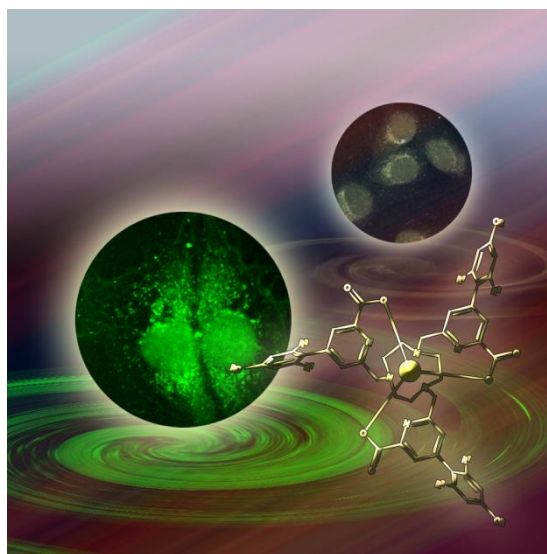


Lanthanide Bioprobe for Biphotonic Microscopy Enabling Spatial, Spectral and Temporal Resolution.

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The sensitization of lanthanide luminescence by nonlinear two-photon (2P) absorption process allows a priori to combine the intrinsic advantages of rare earth spectroscopy (line shape emission with large Stokes shift, long lifetime) and those of biphotonic microscopy (NIR excitation, 3D resolution,...) for bio imaging purpose.¹ In this context we reported a family functionalized triazacyclononane ligands leading to the formation of ultra-bright Eu, Tb, Yb, Dy, Sm and Yb(III) complexes featuring optimized 1P and 2P-brightness.² We also developed original microscopy set-up enabling two-photon imaging in the NIR-to-NIR configuration,^{2a} multiplexing experiments,³ time resolved imaging (PSLIM) and temporal Sampling Lifetime Imaging Microscopy (TSLIM).⁴ Recent ongoing works are focused on the design of functional bioprobes for sensing applications.



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