



# Ligand-Induced Anisotropy of the Two-Photon Luminescence of Spherical Gold Particles in Solution Unraveled at the Single Particle Level

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Titre	Ligand-Induced Anisotropy of the Two-Photon Luminescence of Spherical Gold Particles in Solution Unraveled at the Single Particle Level
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Auteur	Loumaigne, Matthieu [1], Richard, Alain [2], Laverdant, Julien [3], Nutarelli, Daniele [4], Débarre, Anne [5]
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Résumé en anglais	<p>Here we report on the visible luminescence properties of individual spherical gold particles in solution, obtained by two-photon excited fluorescence correlation spectroscopy and by an original dual Rayleigh-fluorescence method, correlating the Rayleigh scattering and the luminescence fluctuations of the same particle. The results demonstrate that the power needed to observe the two-photon excited visible luminescence depends on the illuminated particle and that the corresponding emission is anisotropic at low power. These observations combined with the evolution of the dynamics of the luminescence with respect to excitation power are interpreted by the presence of unique emissive surface states that are randomly switched off and on by the heat-induced movement of the molecular coating. These characteristics, which remain hidden in macroscopic experiments, have important implications with respect to the potential use of the particles as labels in two-photon imaging in aqueous samples.</p>
URL de la notice	<a href="http://okina.univ-angers.fr/publications/ua13639">http://okina.univ-angers.fr/publications/ua13639</a> [12]
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## Liens

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