

## Supporting information for

# Polarization and wavelength dependence in two-photon excited luminescence of a single gold nanosphere

Matthieu Loumagne<sup>a</sup>, Priya Vasanthakumar<sup>a,b</sup>, Alain.Richard and Anne Débarre<sup>a\*</sup>

<sup>a</sup> Laboratoire Aimé Cotton, CNRS, Université Paris Sud, Bâtiment 505, F-91405 Orsay, France

<sup>b</sup> Dipartimento di Fisica "Enrico Fermi", Università di Pisa, Largo Bruno Pontecorvo, 3, I-56127 Pisa, Italy

\* Address correspondence to:

anne.debarre@lac.u-psud.fr

**Figure S-1**

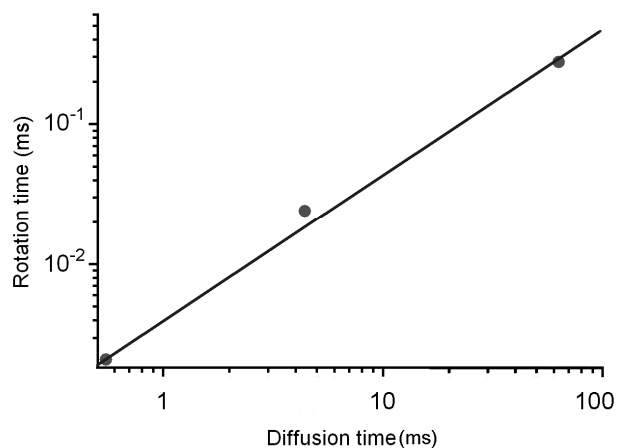


Figure S-1. Evolution of the rotation time with respect to the diffusion time of gold nanoparticles of diameter 20 nm in samples of growing viscosity; log-log plot; crosses, experimental data; line, linear fit. In non logarithmic scale, the constrained linear fit crosses the origin.

**Figure S-2**

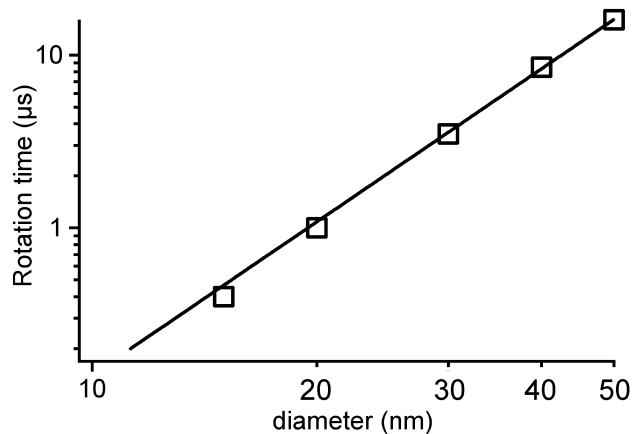


Fig. S-2. Evolution of the rotation time with respect to the diameter of the gold nanoparticles in an aqueous sample. Log-Log plot, open squares, experimental data; line, linear fit, slope 2.95.