Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Electronic Supporting Information

Effect of Hybrid SiO_2@Ag Nanoparticles with Raspberry-like Morphology on the Excited States of the Photosensitizers Rose Bengal and Riboflavin.

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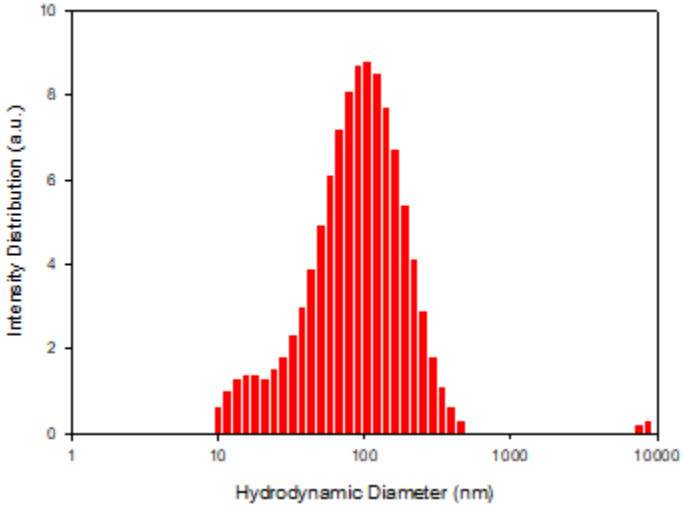

Figure S1: Dynamic light scattering histogram for hydrodynamic diameter detection of SiO_2@Ag NPs.

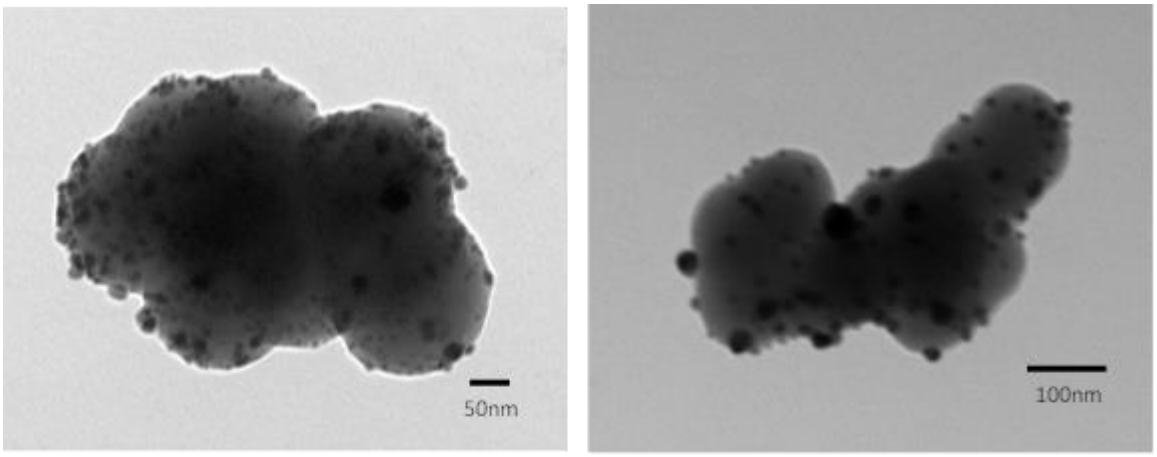

Figure S2: TEM images of SiO_2@Ag-low NPs with a lower silver coverage on the SiO_2 spheres.

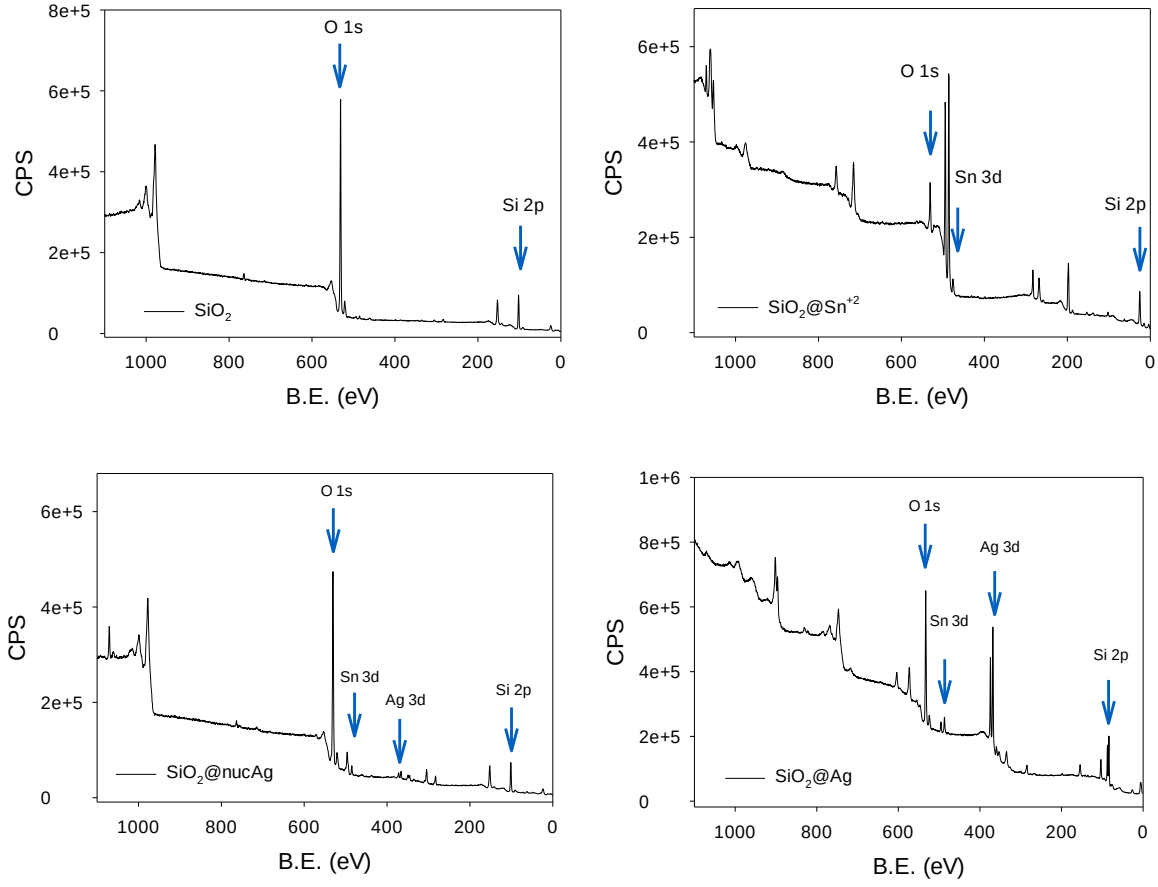

Figure S3: Evolution of the XPS spectra of silica spheres during the successive synthesis steps.

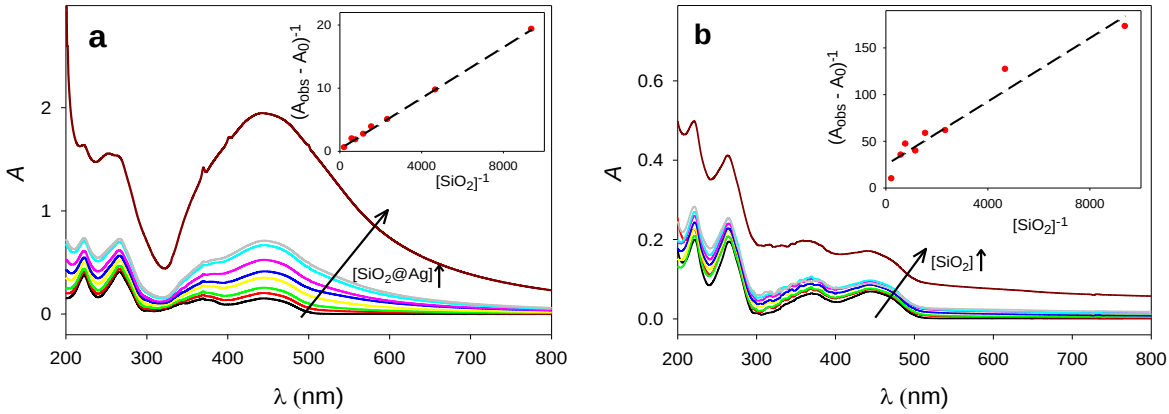

Figure S4: UV-visible absorption spectra of mixtures of 5.4 µM Rf with increasing amounts of: (a) SiO_2@Ag NPs. (b) SiO_2 NPs. The insets show the corresponding plots of $(Abs - A_0)^{-1}$ vs. $[Ag]^{-1}$ at 440 nm.

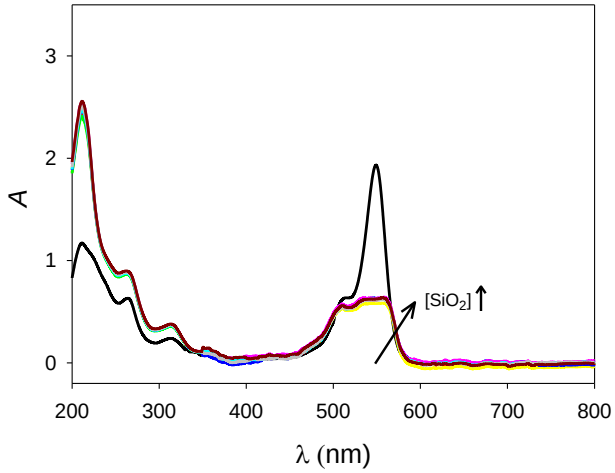

Figure S5: UV-visible absorption spectra of a 29.4 µM solution of RB^{2-} in the presence of increasing amounts of SiO_2 NPs.

Smaple	[SiO_2] (M)	[Ag] NP2 (M)
NP1	1.1e-4	1.8e-7
NP2	2.1e-4	3.6e-7
NP3	4.3e-4	7.2e-7
NP4	6.4e-4	1.1e-6
NP5	8.5e-4	1.4e-6
NP6	1.7e-3	1.8e-6
NP7	1.3e-3	2.2e-6
NP8	4.3e-3	7.2e-6

Table S1: SiO_2 and Ag concentration in the samples of the experiments shown in Figure S4 y S5.

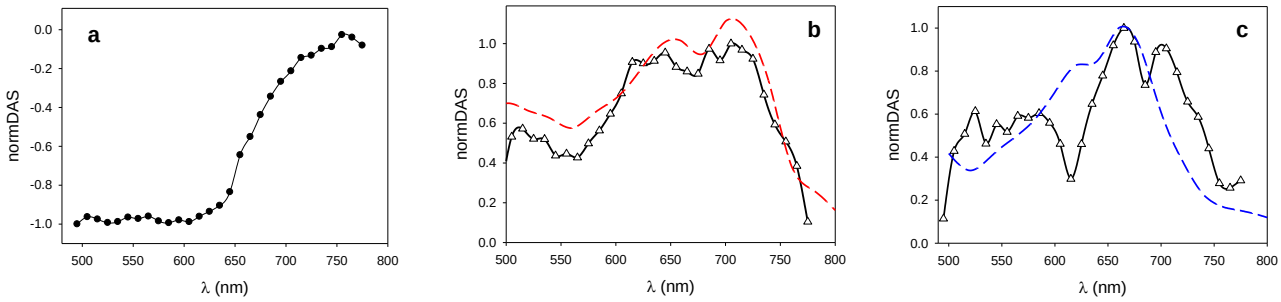

Figure S6: DADS corresponding to the lifetimes of: 11.50 ns (a), 12.54 μs (b), and 99.68 μs (c), obtained from laser flash-photolysis experiments ([Rf] = 27 μM and [Ag] = 3.6x10^{-6} M from SiO2@Ag NPs) under Ar-saturation after 355 nm excitation. The dashed lines represent the reported absorption spectra of ^{3}Rf* (red) and Rf$^{\bullet+}$ (blue).

Sample	[SiO2] (M)	[Ag] (M)	τ_s (ns)
Rf	-	-	4.70
Rf + SiO2	6.4e-4	-	4.66
Rf + SiO2	4.3e-3	-	4.62
Rf + SiO2@Ag	6.4e-4	1.1e-6	4.70
Rf + SiO2@Ag	4.3e-3	7.2e-6	4.72

TableS2: Fluorescence lifetime of Rf in the absence and presence of nanoparticles.