Electronic supplementary information (ESI)

Gold nanoparticles optical properties induced by water and ionic liquid ($bmimBF_4$) inside cationic reverse micelles.

Diana Blach and Fernando Martínez.**

Table S1. Apparent diameter (d_{app}) values for $bmimBF_4$/BHDC/toluene and water/BHDC/toluene RMs obtained at 25 °C varying W and [BHDC] = 0.1 M.

$bmimBF_4$/BHDC/toluene		**water/BHDC/toluene**	
W_s	**d_{app} (nm)**	**W_0**	**d_{app} (nm)**
0,3	3,2 ± 0,2	3	3,5 ± 0,5
0,5	5,3 ± 0,1	5	4,1 ± 0,3
0,7	8,4 ± 0,1	6	4,6 ± 0,1
1	10,2 ± 0,3	8	5,5 ± 0,6
1,2	15,2 ± 0,5	10	6,7 ± 0,1

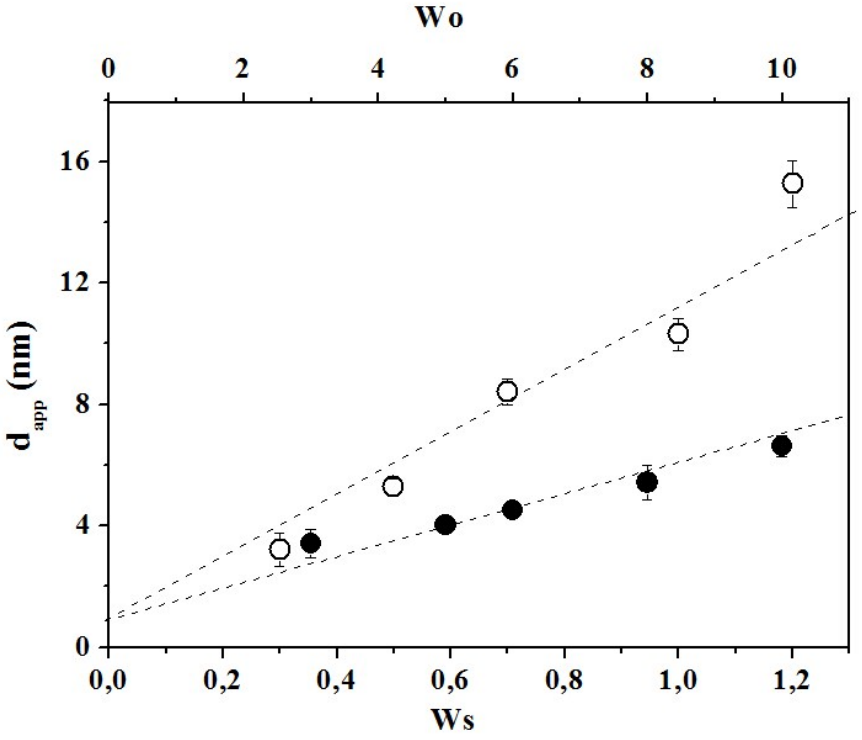

Figure S1. Apparent diameter (d_{app}) values for bmimBF_4/BHDC/toluene (○) and water/BHDC/toluene (●) at different W obtained at 25 °C and [BHDC] = 0.1 M.

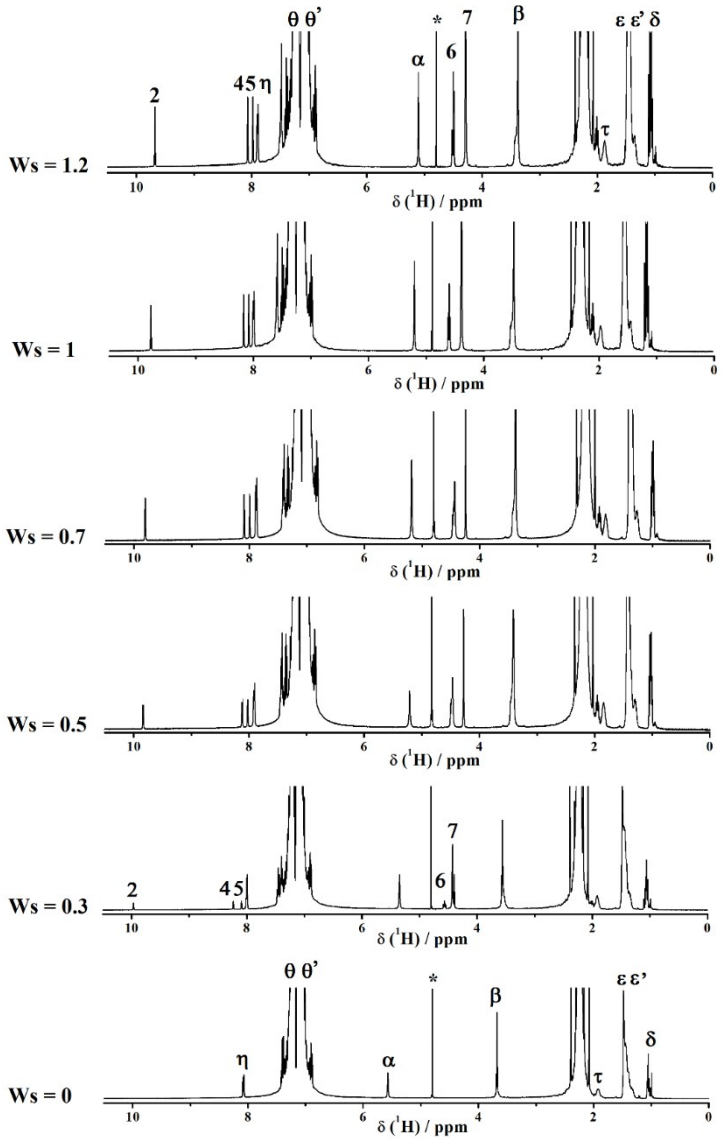

Figure S2. ^{1}H NMR spectra for bmimBF_4/BHDC/toluene RMs at different W_s values and [BHDC] = 0.1 M. Labels refer to Scheme 1. A capillary tube containing D_2O was used as a frequency ‘‘lock’’, the solvent signal is evident, indicated by *.

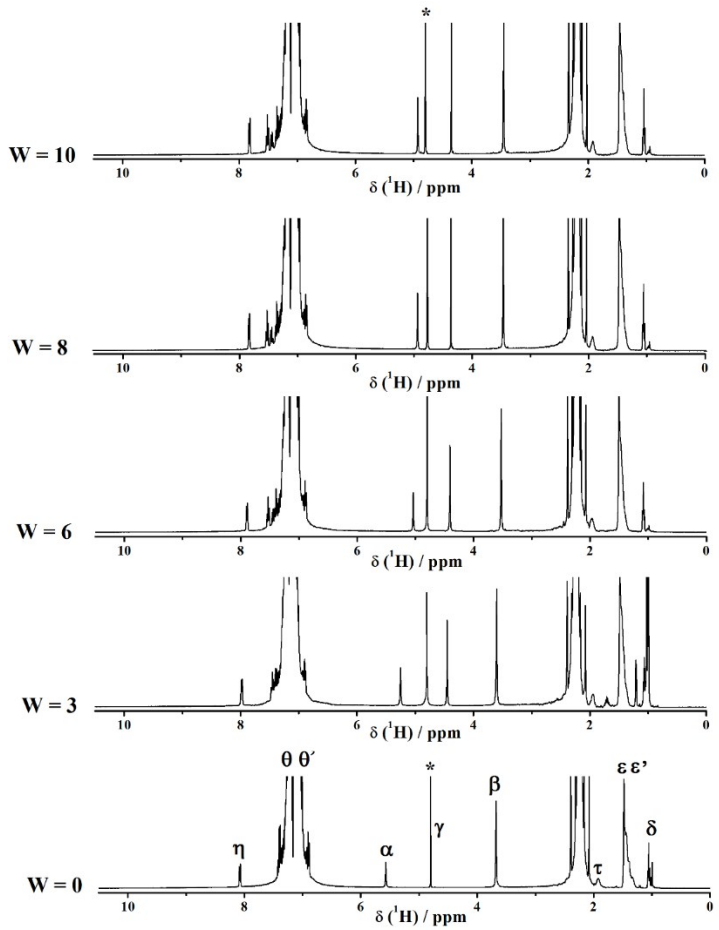

Figure S3. ^{1}H NMR spectra for water/BHDC/toluene RMs at different W_0 values and [BHDC] = 0.1 M. Labels refer to Scheme 1. A capillary tube containing D_2O was used as a frequency ‘‘lock’’, the solvent signal is evident, indicated by *.

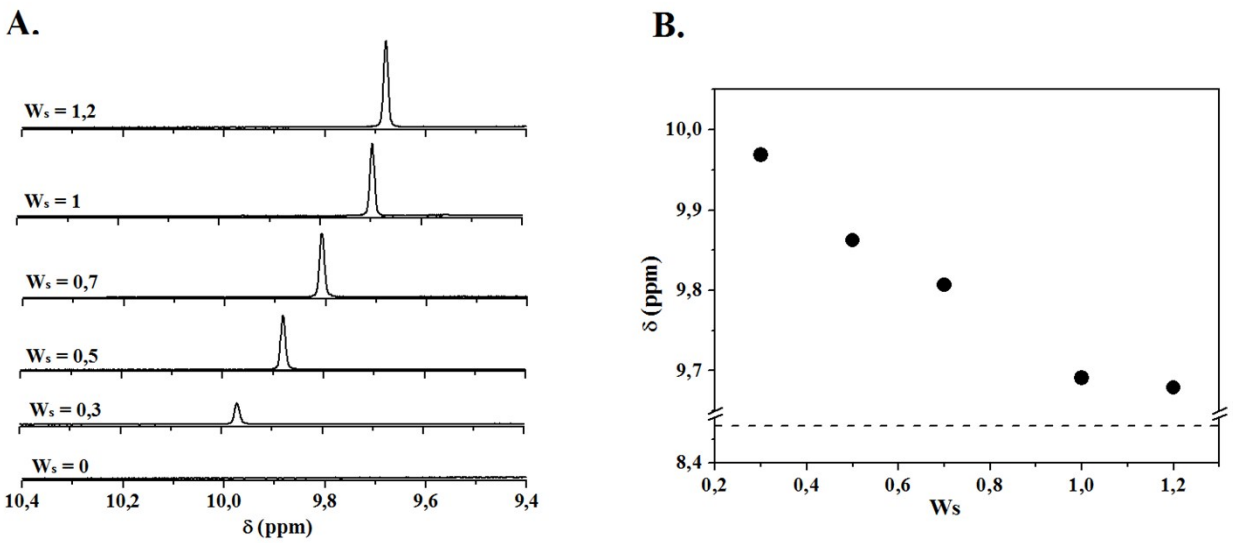

Figure S4. A). ^{1}H-NMR spectra of bmimBF_4 in BHDC RMs and B). ^{1}H-NMR chemical shifts of C2-H bmim^{+} in bmimBF_4/BHDC/toluene RMs at different bmimBF_4 contents (W_s). [BHDC] = 0.1 M. The corresponding value for neat bmimBF_4 (----) is included for comparison.

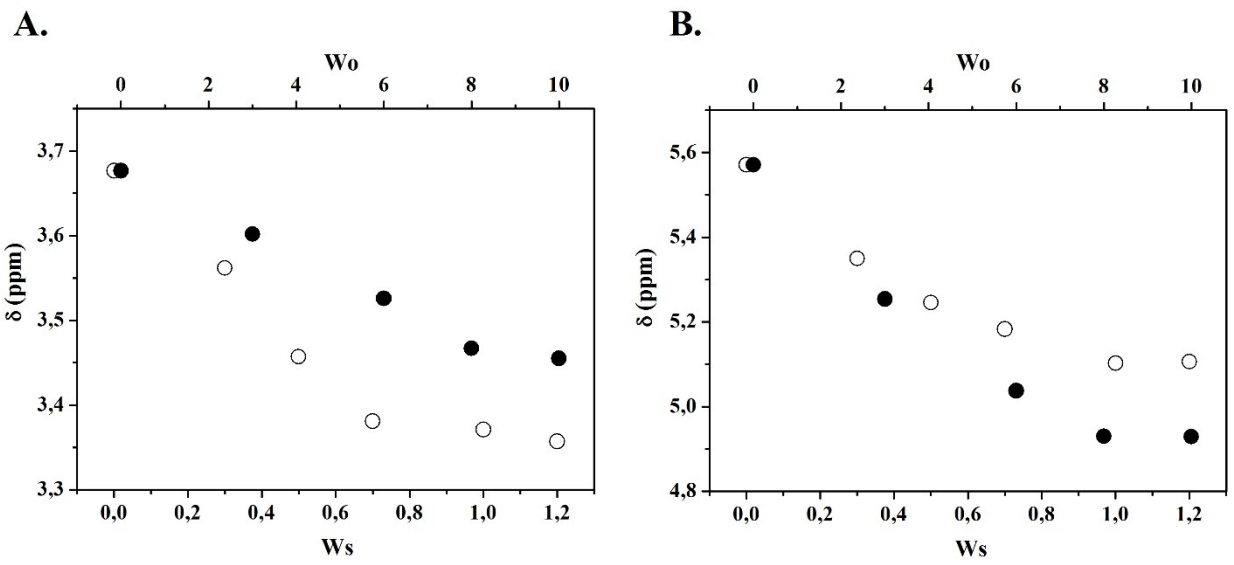

Figure S5. ^{1}H-NMR chemical shifts of BHDC protons in bmimBF_4/BHDC/toluene (○) and water/BHDC/toluene (●) at different W. A). β protons and B). α protons labels refer to Scheme 1. [BHDC] = 0.1 M.

Table S2. The interplanar gold crystal spacing (Å) and its corresponding HKL crystallographic values from the JCPDS-PDF 04-0784.

SYMMETRY. CUBIC

DIHKL.	2.3550	100.	1.00	1.00	1.00
DIHKL.	2.0390	52.	2.00	0.00	0.00
DIHKL.	1.1774	12.	2.00	2.00	2.00