Supporting Information

Luminescent Carbon Nanoparticles: Effects of chemical Functionalization, and evaluation of Ag^+ Sensing properties

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Fig. SI.1. UV spectrum of CDs, MSA and the complex between CDs-MSA

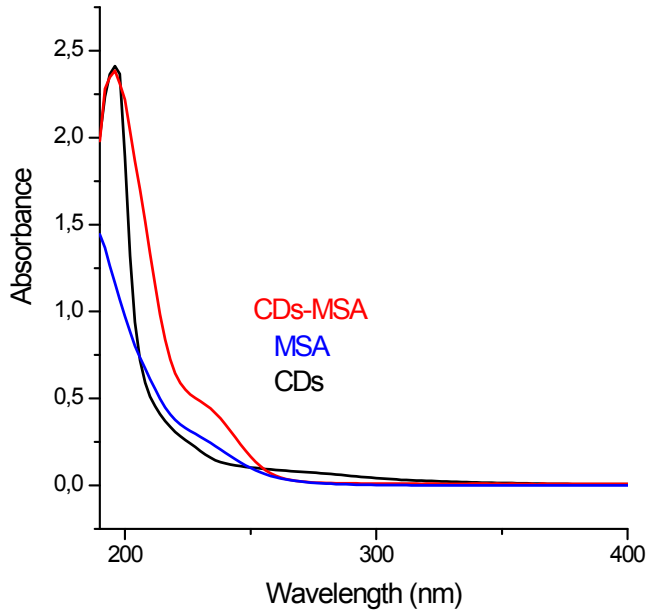


Fig. SI.2. Optimization of MSA concentration on the Fluorescence Intensity

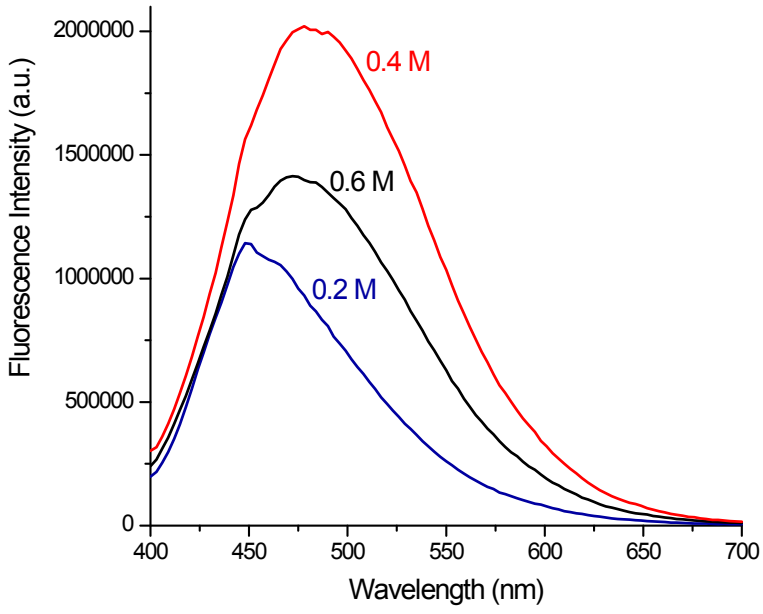


Fig. SI.3. Effect of pH on the Fluorescence Intensity of CDs-MSA sensor

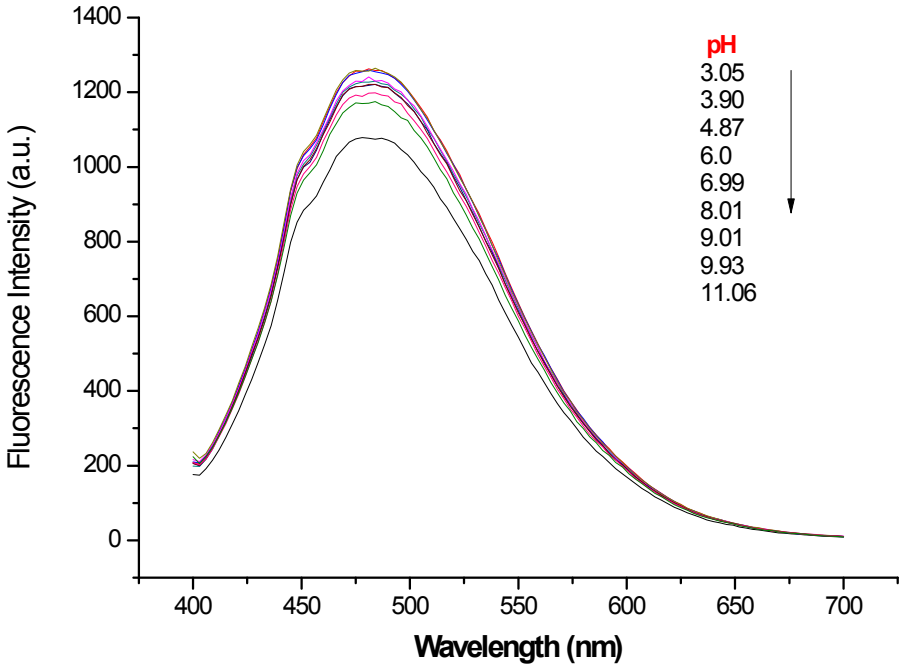


Fig. SI.4. Effect of Ionic Strength on the Fluorescence Intensity of CDs-MSA sensor

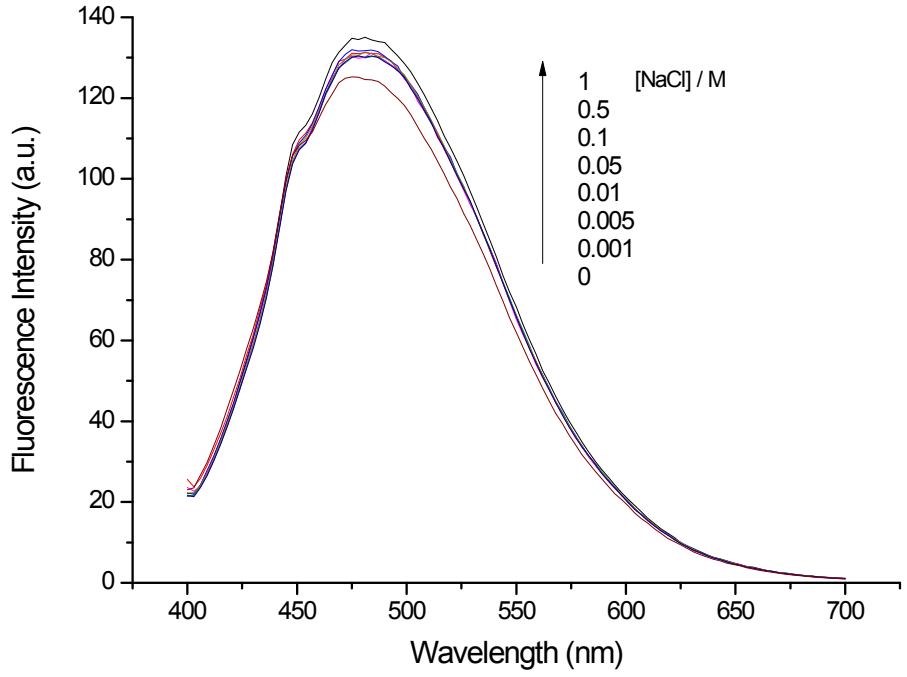


Fig. SI. 5

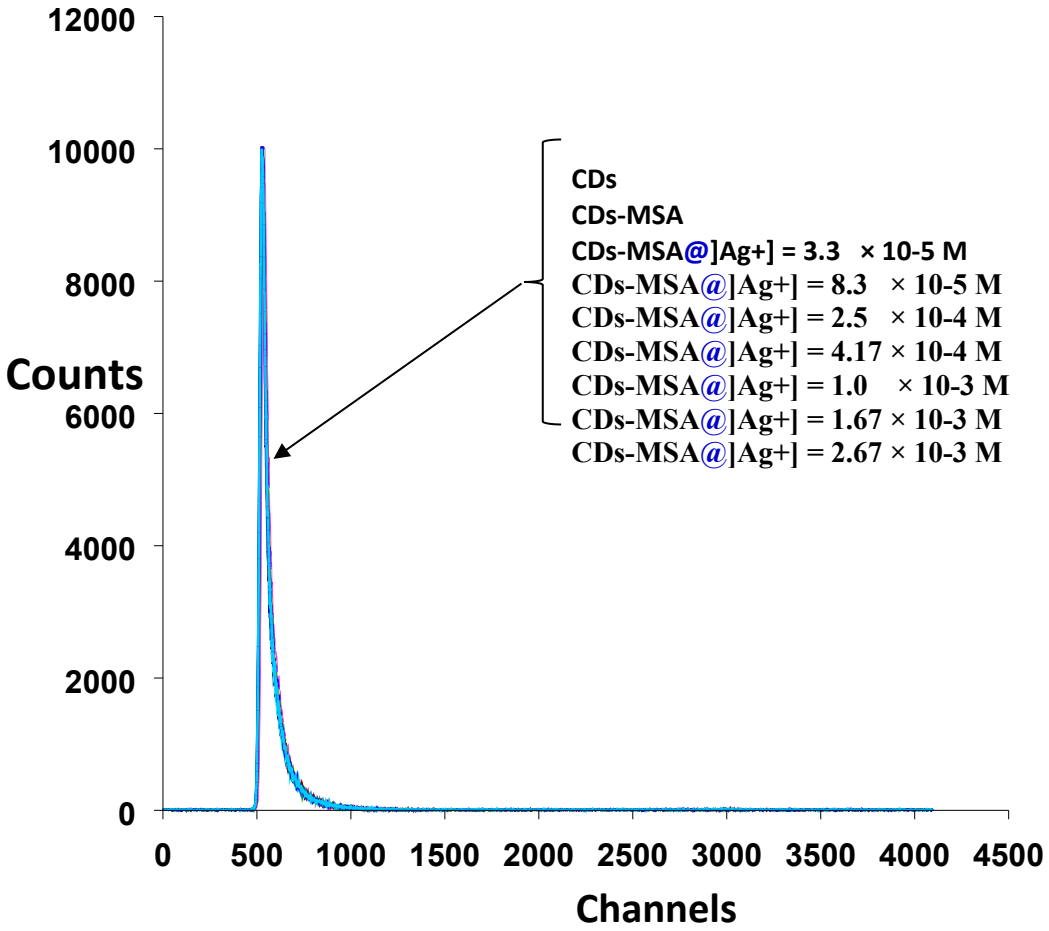
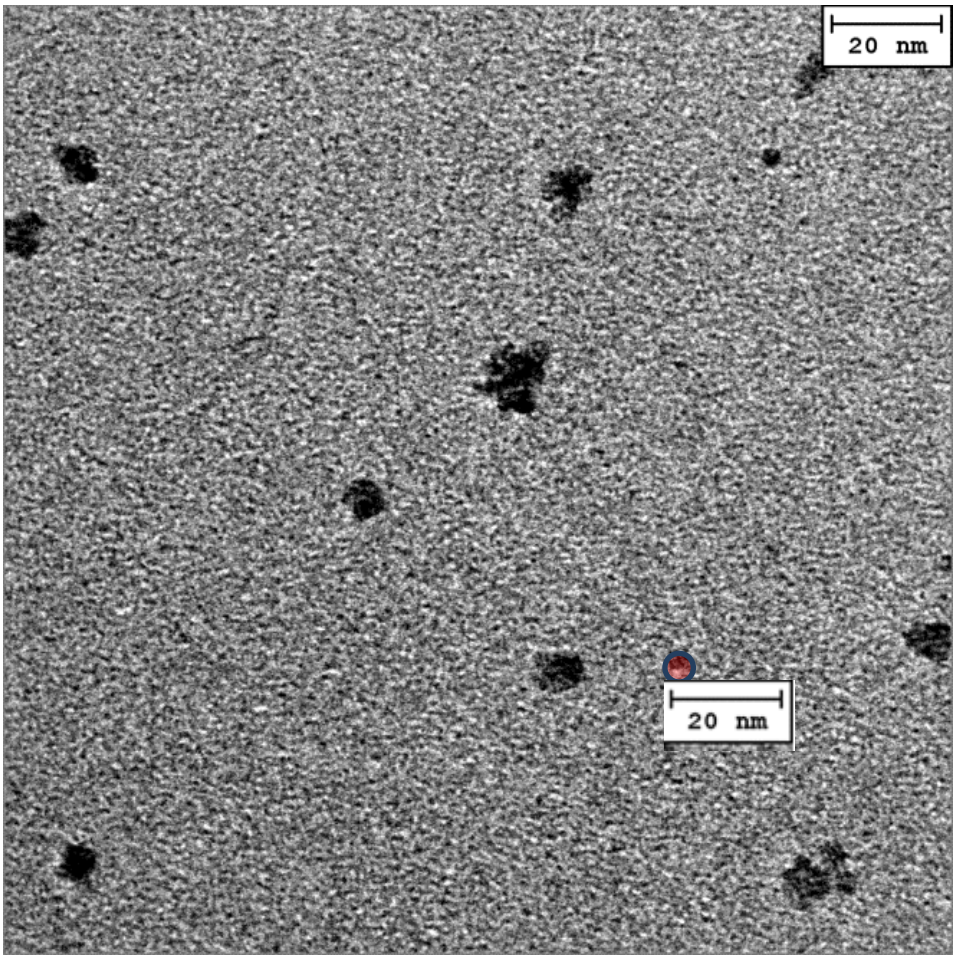

12000
10000
8000
Counts
6000
4000
2000
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
Channels
CDs
CDs-MSA
CDs-MSA@]Ag+] = 3.3 × 10-5 M
CDs-MSA@]Ag+] = 8.3 × 10-5 M
CDs-MSA@]Ag+] = 2.5 × 10-4 M
CDs-MSA@]Ag+] = 4.17 × 10-4 M
CDs-MSA@]Ag+] = 1.0 × 10-3 M
CDs-MSA@]Ag+] = 1.67 × 10-3 M
CDs-MSA@]Ag+] = 2.67 × 10-3 M

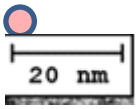
Table S1. Lifetime intensity decays of CDs, CDs-MSAin water without and in the presence of Ag^+

	τ_I (ns)	B_i	A	χ^2
CDs	2.56 (0.08) 0.450 (0.012) 6.33 (0.08)	0.0216 (0.0001) 0.0873 (0.0004) 0.00493 (0.00003)	9.98 (0.23)	1.1627
CDs-MSA	2.43 (0.08) 0.506 (0.015) 6.37 (0.06)	0.0235 (0.0001) 0.0700 (0.0004) 0.00622 (0.00003)	4.71 (0.18)	1.249645
CDs-MSA@[Ag^+] = 3.33×10^{-5} M	2.53 (0.07) 0.502 (0.013) 6.78 (0.06)	0.0236 (0.0001) 0.0738 (0.0004) 0.00509 (0.00003)	4.22 (0.17)	1.132022
CDs-MSA@[Ag^+] = 8.33×10^{-5} M	2.52 (0.08) 0.527 (0.013) 6.71 (0.07)	0.0213 (0.0001) 0.0772 (0.0004) 0.00446 (0.00003	4.31 (0.18)	1.253027
CDs-MSA@[Ag^+] = 0.00025 M	2.48 (0.08) 0.495 (0.014) 6.57 (0.06)	0.0235 (0.0001) 0.0737 (0.0004) 0.00554 (0.00003)	5.44 (0.19)	1.070406
CDs-MSA@[Ag^+] = 0.0004 M	2.55 (0.07) 0.506 (0.015) 6.79 (0.07)	0.0240 (0.0001) 0.0697 (0.0004) 0.00517 (0.00003)	4.86 (0.20)	1.16096
CDs-MSA@[Ag^+] = 0.001 M	2.52 (0.08) 0.505 (0.014) 6.59 (0.07	0.0238 (0.0001) 0.0729 (0.0004) 0.00550 (0.00003)	7.79 (0.23)	1.078386
CDs-MSA@[Ag^+] = 0.002 M	2.52 (0.08) 0.521 (0.014) 6.56 (0.07)	0.0237 (0.0001) 0.0706 (0.0004) 0.00553 (0.00003)	8.76 (0.24)	1.176244

Fig. SI. 6. TEM analysis of CDs nanoparticles



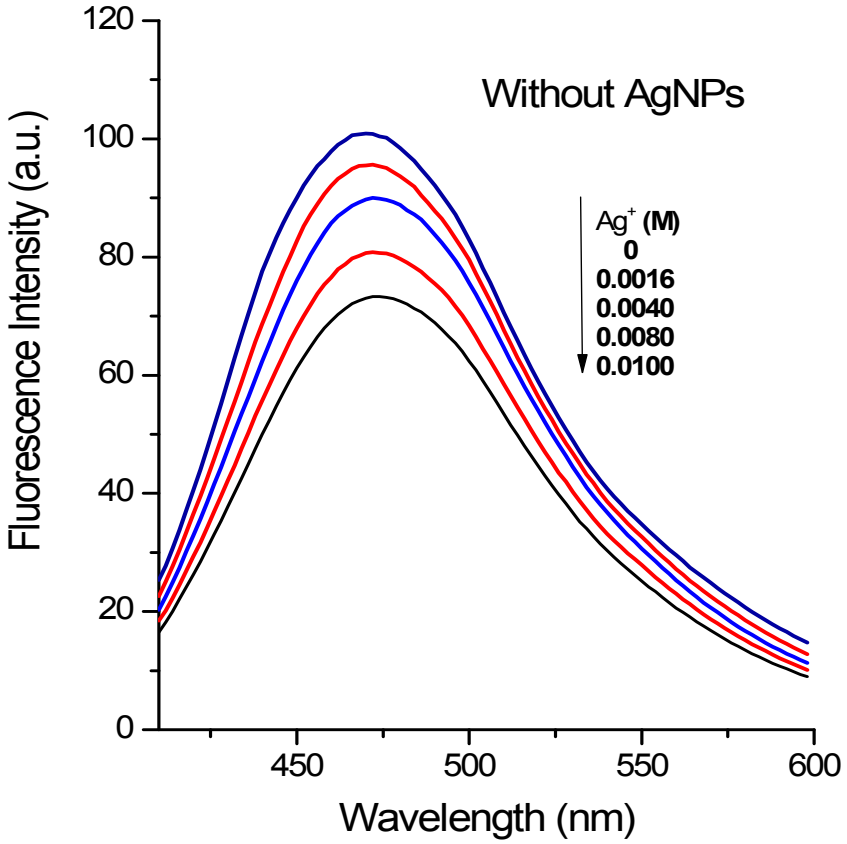
In the picture is picked up one of the nanoparticles and was measured and can be obtained a size



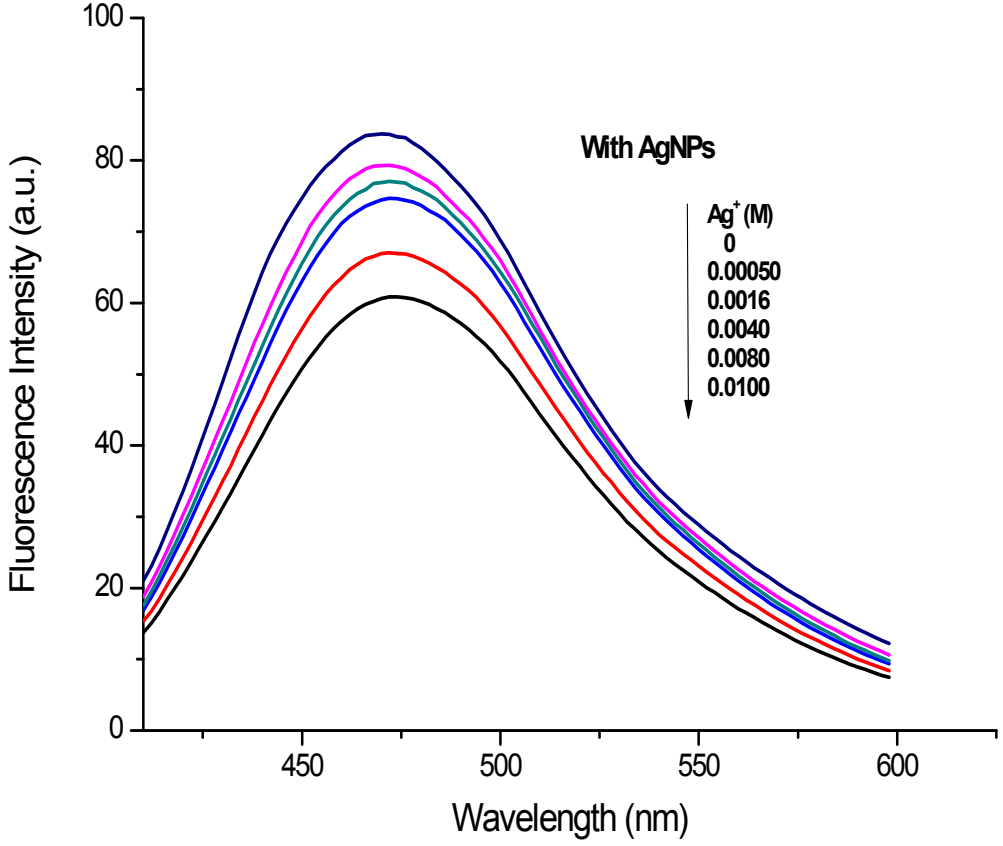
The size of the nanoparticles in this case is around 5.70 nm.

Fig. SI. 7.

A


Without AgNPs
Fluorescence Intensity (a.u.)
Wavelength (nm)
Ag+ (M)
0
0.0016
0.0040
0.0080
0.0100
0
20
40
60
80
100
120
450
500
550
600

B


With AgNPs
Fluorescence Intensity (a.u.)
Wavelength (nm)
Ag+ (M)
0
0.00050
0.0016
0.0040
0.0080
0.0100
0
20
40
60
80
100
450
500
550
600

Calibration Curves obtained for the analysis of Ag^{+} in presence of AgNPs and without