The synthesis and study of carboxymethyl cellulose from water hyacinth biomass stabilized silver nanoparticles for the colorimetric detection sensor of Hg (II) ions.

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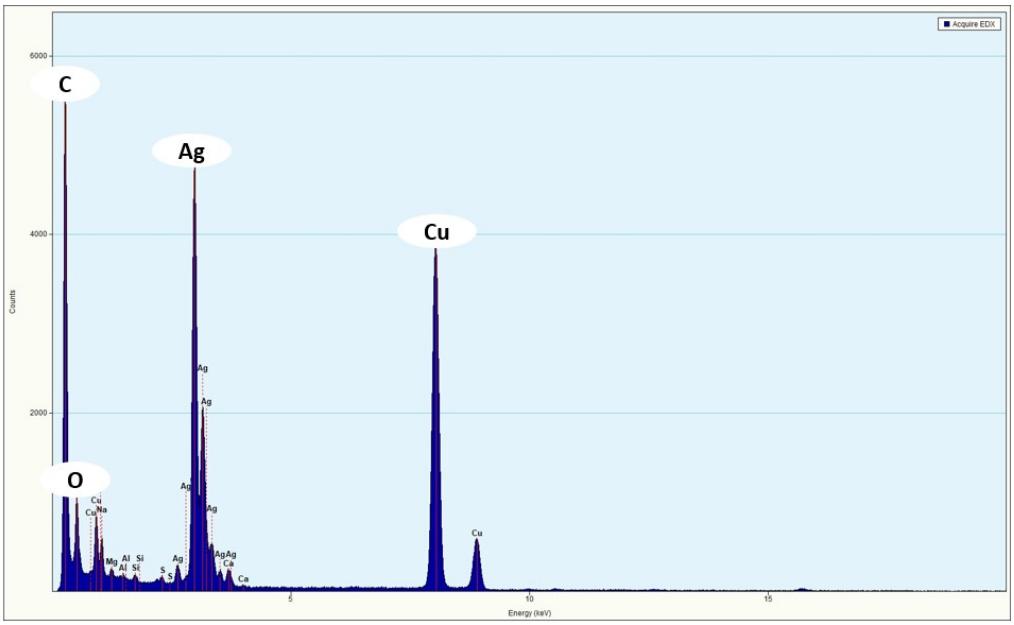

Fig.S1 EDX spectra of CMC-AgNPs

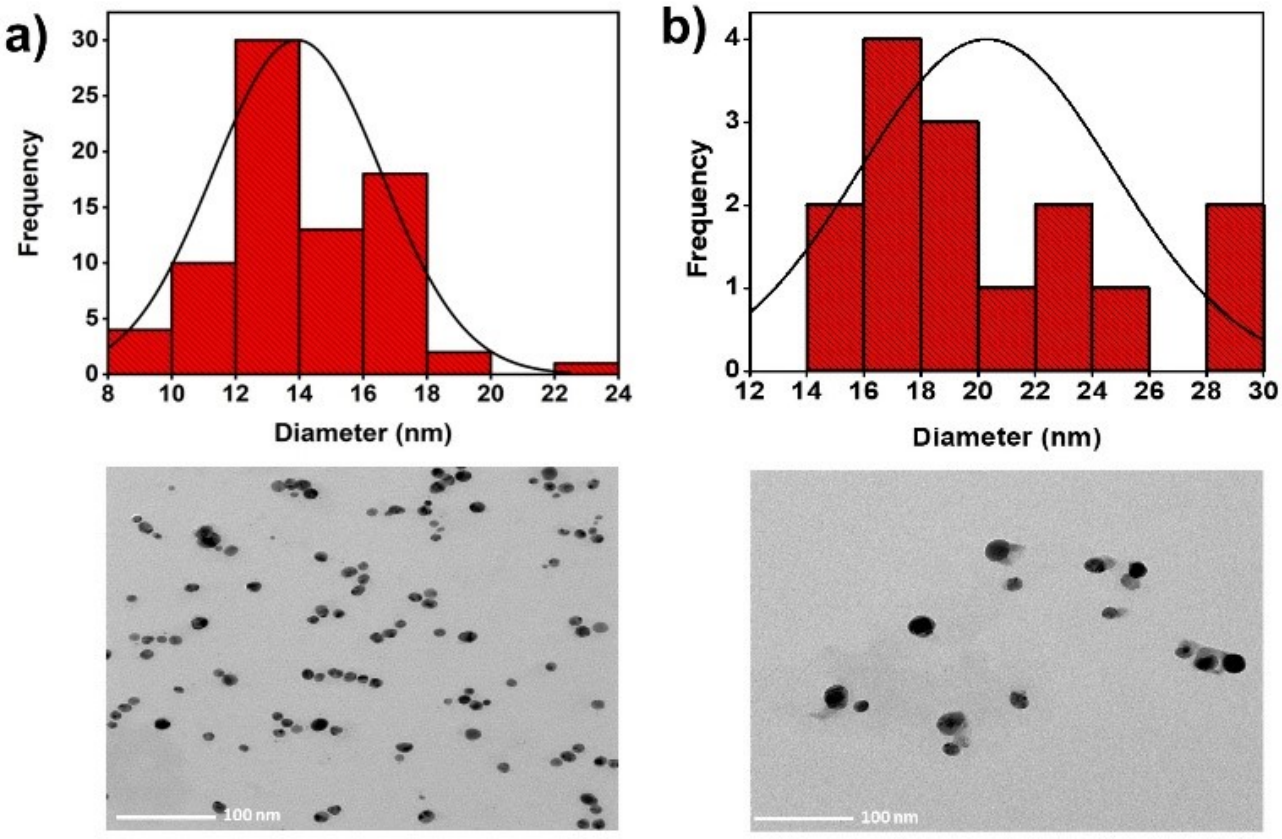

Fig.S2 (a) Size distribution plot of CMC-AgNPs from TEM and TEM image of CMC-AgNPs, (b) Size distribution plot of CMC-AgNPs from TEM and TEM image of CMC-AgNPs after added Hg^{2+}.

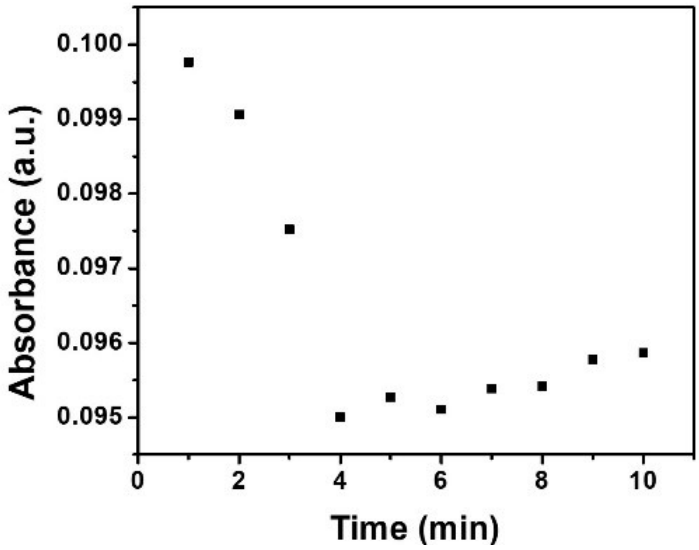

Fig.S3 Scatter plot of absorbance at the maximum wavelength and time.

Table S1*:* Comparison of the performance of several methods for Hg^{2+} detection in water

Methods	Materials	Linear range (μM)	The limit of detection (μM)	Ref.
Electrochemistry	oligonucleotides, ferrocene, a gold electrode, 3-mercapto-1-propanol, and cysteine electrochemical sensor	0.1-2	0.1	[1]
	polyamide (PA) and chromotropic acid (CA) nanofibers electrospun on a glassy carbon electrode	0.03-0.45	0.0098	[2]
	T-Hg^{2+}-T pairs and exonuclease III assistance	0.001-10	0.00016	[3]
	Pt /g-C_3N_4/ polythiophene nanocomposites	0.001-0.5	0.000006	[4]
	A triple-helix DNA gold nanoparticle	0.0001-0.13	0.00003	[5]
Fluorescence	Oligonucleotide-based Fluorescence Sensor	0.1-0.5	0.079	[6]
	Induced photoluminescence (PL) quenching of BSA-modified gold nanoclusters (BSA-Au NCs)	0.4-43.2	0.08	[7]

	SYBR GREEN I (SGI) and mercury-specific oligonucleotide (MSO)	0.01-0.1	0.00068	[8]
	Dual- and three-emission carbon dot (CD) nanohybrids	0.001-1	0.00022	[9]
	Schiff base HL (N(salicylidene)benzylamine)	0-7.8	0.75	[10]
Colorimetric	Citrate-capped Au nanoparticles	0.005-1	0.0043	[11]
	Thioctic acid functionalized gold nanoparticles	0.01-0.02	0.01	[12]
	Ziziphus mauritiana Leaf extract-based silver nanoparticles	0.003-0.023	0.00004	[13]
	Citrate-stabilized AgNPs and 6-Thioguanine	0-0.333	0.004	[14]
	Thiamine-functionalized silver nanoparticles	0.01-5	0.005	[15]
	Carboxymethyl cellulose silver nanoparticles (CMC-AgNPs)	5-45	3.14	This work

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