Electronic Supplementary information (ESI)

The supplementary materials has two figures and four tables that includes: The **Figure S1** showed low magnification TEM images of Ag/dextran, sample S7, sample S5, sample S3 and Au/dextran to clearly observe the morphology and size of obtained nanocomposites; The **Figure S2** exhibited particle size distribution analysis of Ag/dextran, Au/dextran and Ag-Au bimetallic nanoparticles in dextran to clearly analyze the diameter of as-synthesized nanoparticles; The **Tables S1-S3** exhibited elemental composition of samples S7, S5 and S3 to clearly demonstrate the chemical composition of alloy nanoparticles; The **Table S4** showed the bands of hydroxyl and carbonyl stretching vibration of dextran, Ag/dextran, Au/dextran and Ag-Au bimetallic/dextran to confirm the light shifting of bands assigning to the hydroxyl and carbonyl functional groups indicating that the formation of silver, gold and silver-gold bimetallic nanoparticles.

Fig. S1. Low magnification TEM images of Ag/dex tran (a), sample S7 (b), sample S5 (c), sample S3 (d) and Au/dextran.

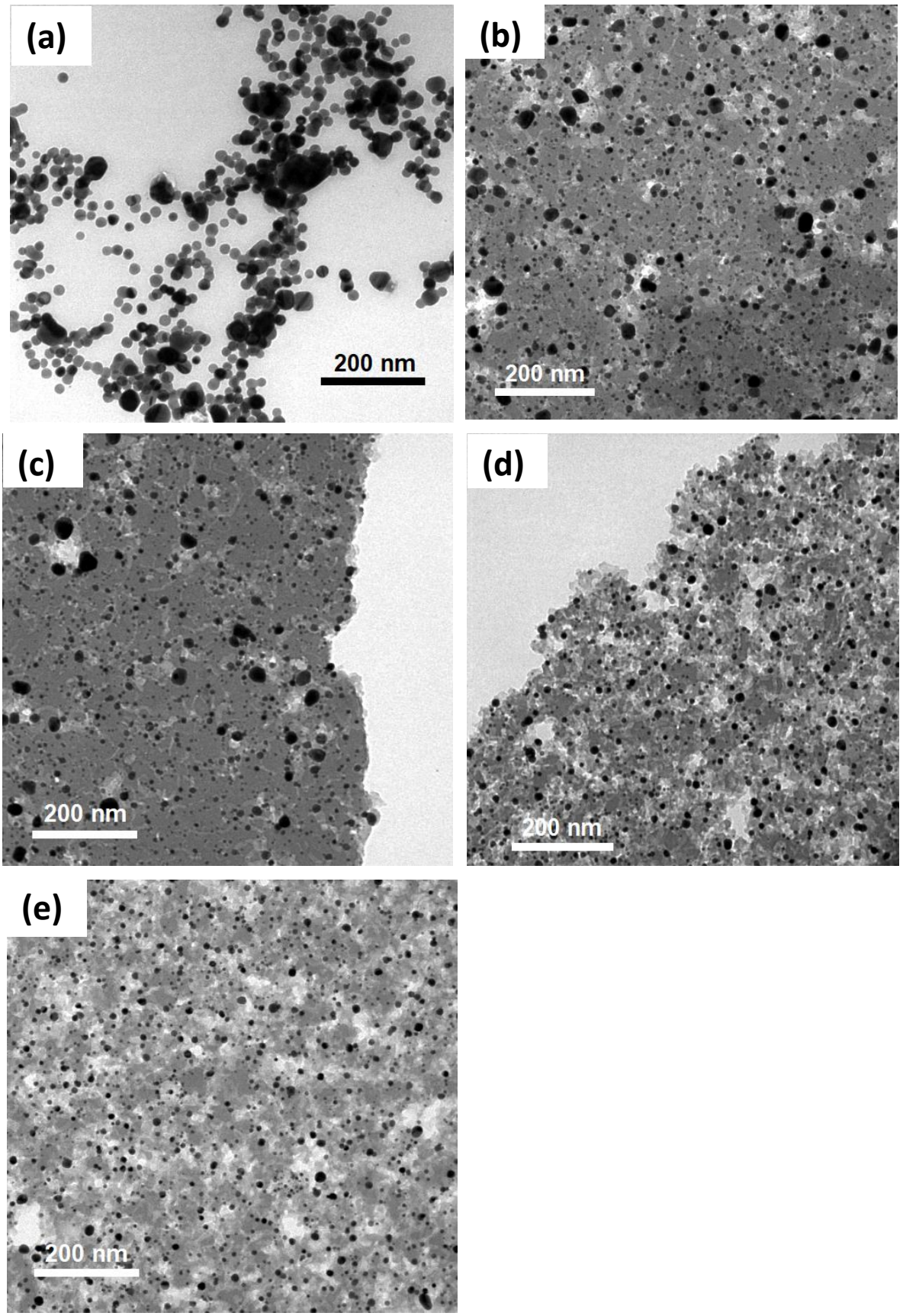
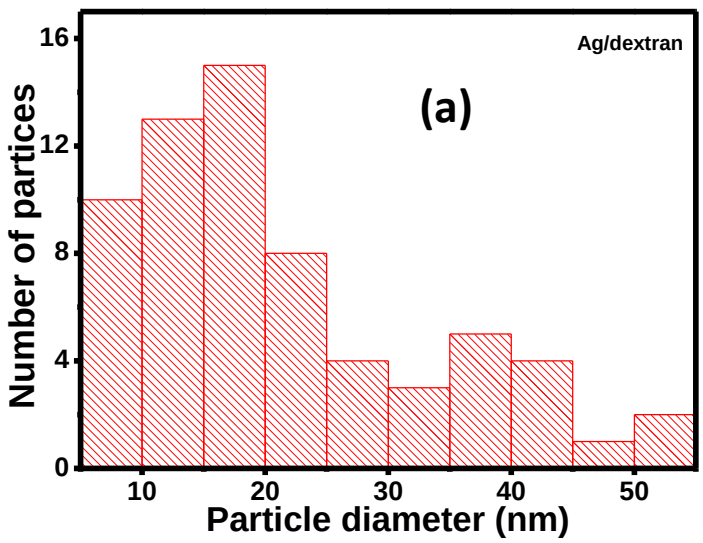
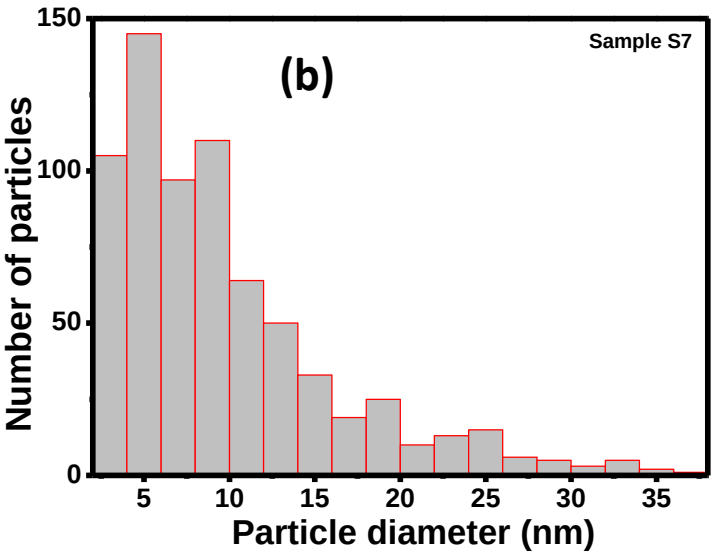
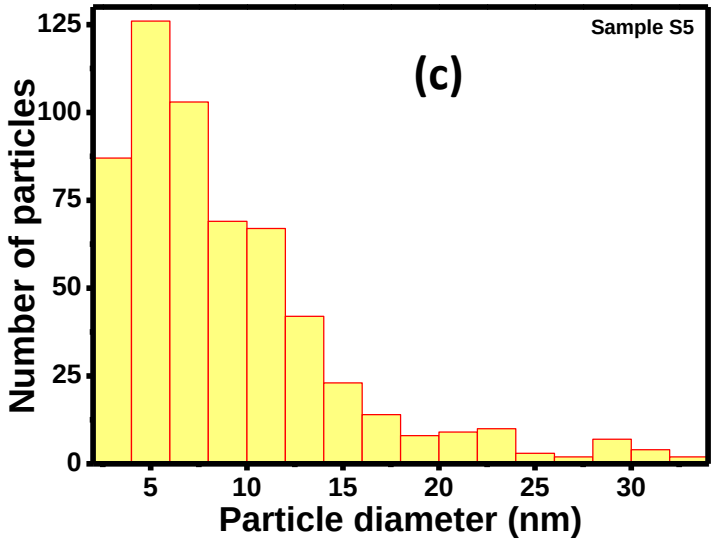
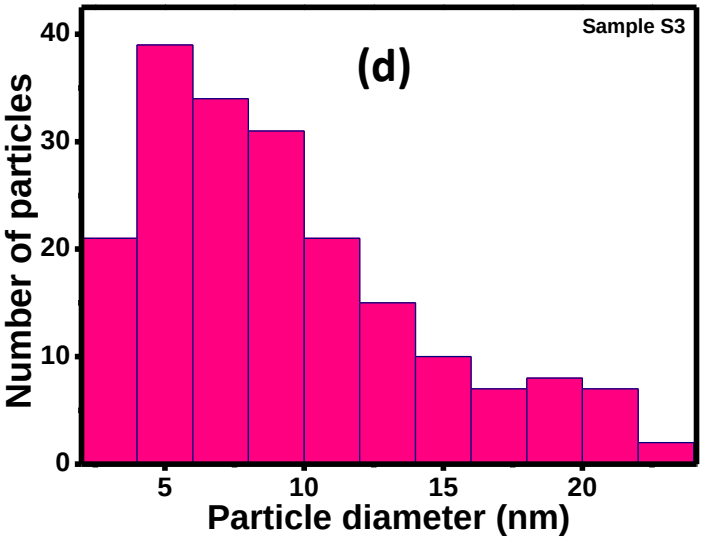


Fig. S2. Particle size distribution analysis of Ag/dex tran (a), Au/dextran (e) and Ag-Au bimetallic NPs in dextran (b-d).









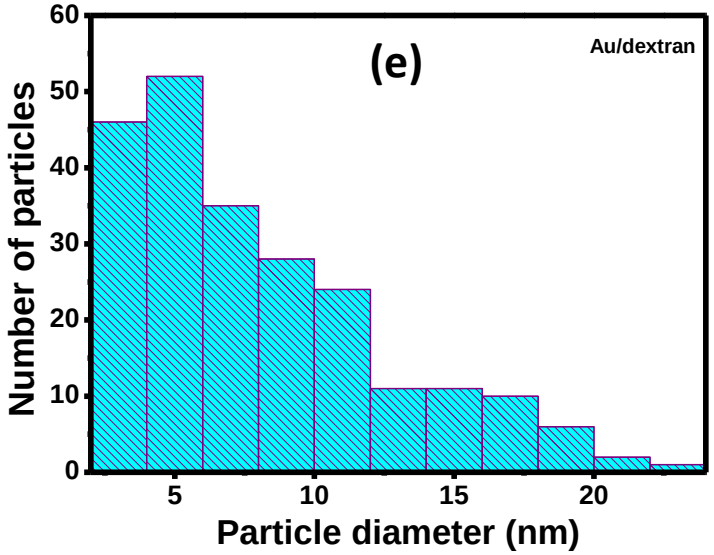


Table S1. Elemental composition of sample S7.

Element	Weight%	Atomic%
C K	53.56	75.43
O K	19.87	20.99
Cl K	1.08	0.28
Ag L	15.14	2.36
Au M	10.35	0.94
Totals	100.00	100.00

Table S2. Elemental composition of sample S5.

Element	Weight%	Atomic%
C K	47.62	75.17
O K	16.99	20.11
Cl K	0.56	0.30
Ag L	13.50	2.37
Au M	21.33	2.05
Totals	100.00	100.00

Table S3. Elemental composition of sample S3.

Element	Weight%	Atomic%
C K	49.14	73.01
O K	21.45	23.89
Ag L	5.93	0.98
Au M	23.58	2.12
Totals	100.00	100.00

Table S4. The bands of hydroxyl and carbonyl stretching vibration of dextran, Ag/dextan, Au/dextran and Ag-Au bimetallic/dextran.

Sample	ν(OH) band (cm^{-1})	ν(C=O) band (cm^{-1})
Dextran	3471	1658
Ag/dextran	3444	1645
Au/dextran	3363	1635
S3	3392	1647
S5	3444	1635
S7	3442	1637