

Electronic Supplementary Information

**pH-Triggered conversion of soft nanocomposites: *in situ* synthesized
AuNP-hydrogel to AuNP-organogel**

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Table. S1 Minimum gelation concentration (mgc, % w/v) of dipeptide amphiphiles and corresponding sodium salts in different solvents.

Compounds	Toluene	<i>o</i> -Xylene	<i>m</i> - Xylene	<i>p</i> - Xylene	Water
1	0.5	0.55	0.45	0.5	1.7
1a	5.0	5.2	5.1	5.1	I ^a
2	0.45	0.5	0.5	0.55	1.65
2a	4.5	4.6	4.7	4.6	I ^a
3	1.5	1.5	1.6	1.45	3.0
3a	6.0	6.2	6.1	6.2	I ^a
4	0.65	0.7	0.7	0.75	0.58
4a	1.0	1.2	0.95	1.0	I ^a

^aI, Insoluble.

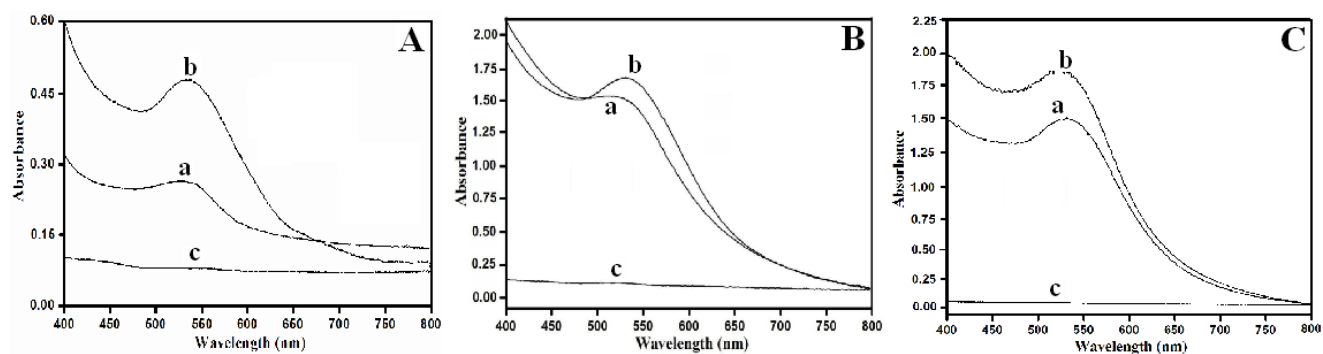


Fig. S1 UV-visible absorption spectra of (a) GNPs synthesized in hydrogel and (b) after transfer to the toluene phase and (c) the remaining aqueous phase after transfer in case of gelator molecule **1** having gelator : HAuCl₄ 15 : 1 (A), 5 : 1 (B) and 3 : 1 (C).

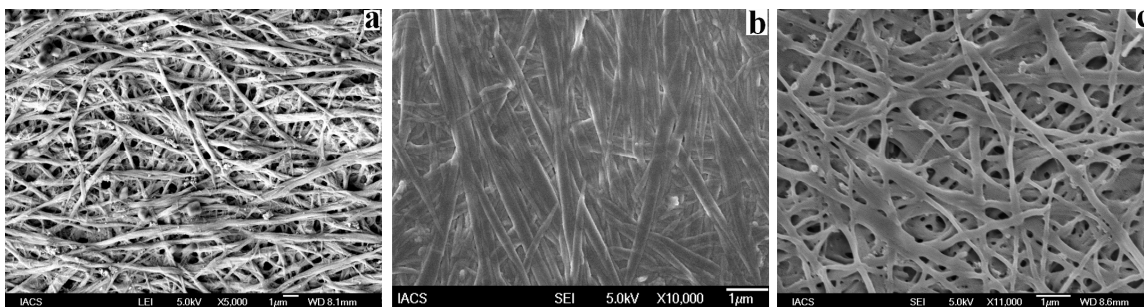


Fig. S2 (a) FESEM images of dried sample of **2** in water. (b,c) FESEM images of dried samples of **1a** and **4a** in toluene.

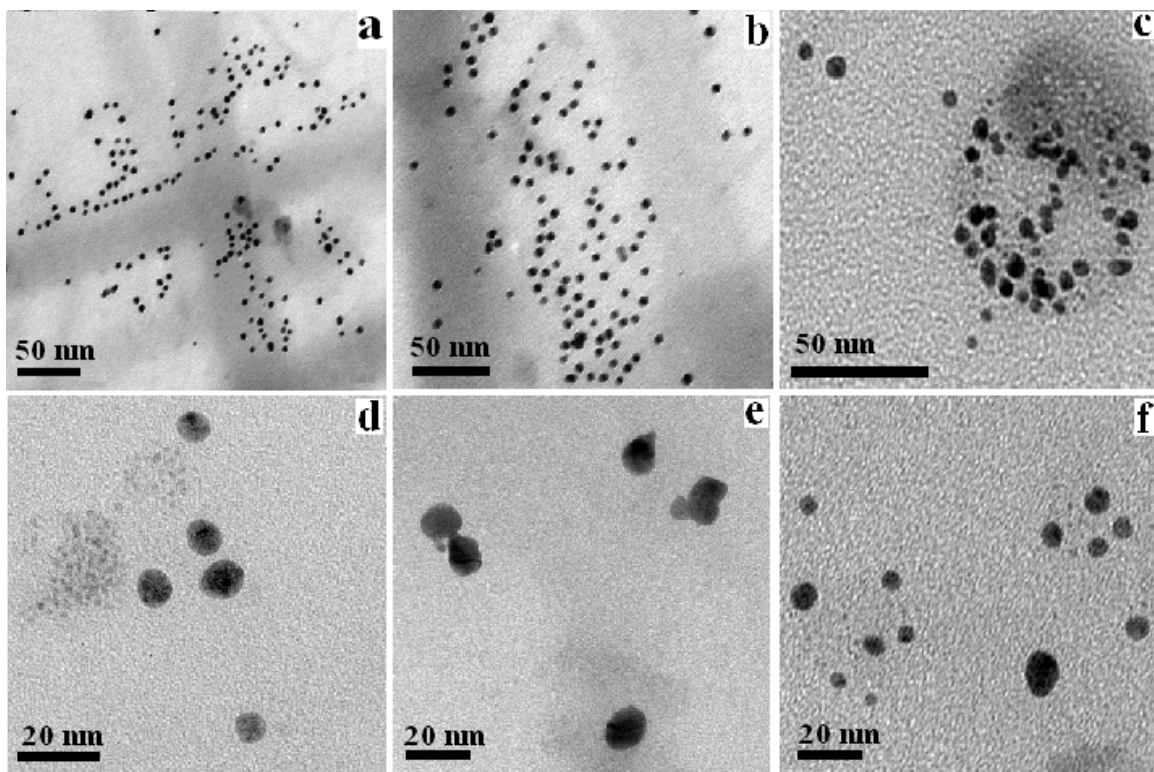


Fig. S3 TEM images of in situ synthesized gold nanoparticles in hydrogels of (a) **1**, (b) **2**, (c) **3**, (d) **4** at MGC and in aqueous solution of (e) **5**, (f) **6**.

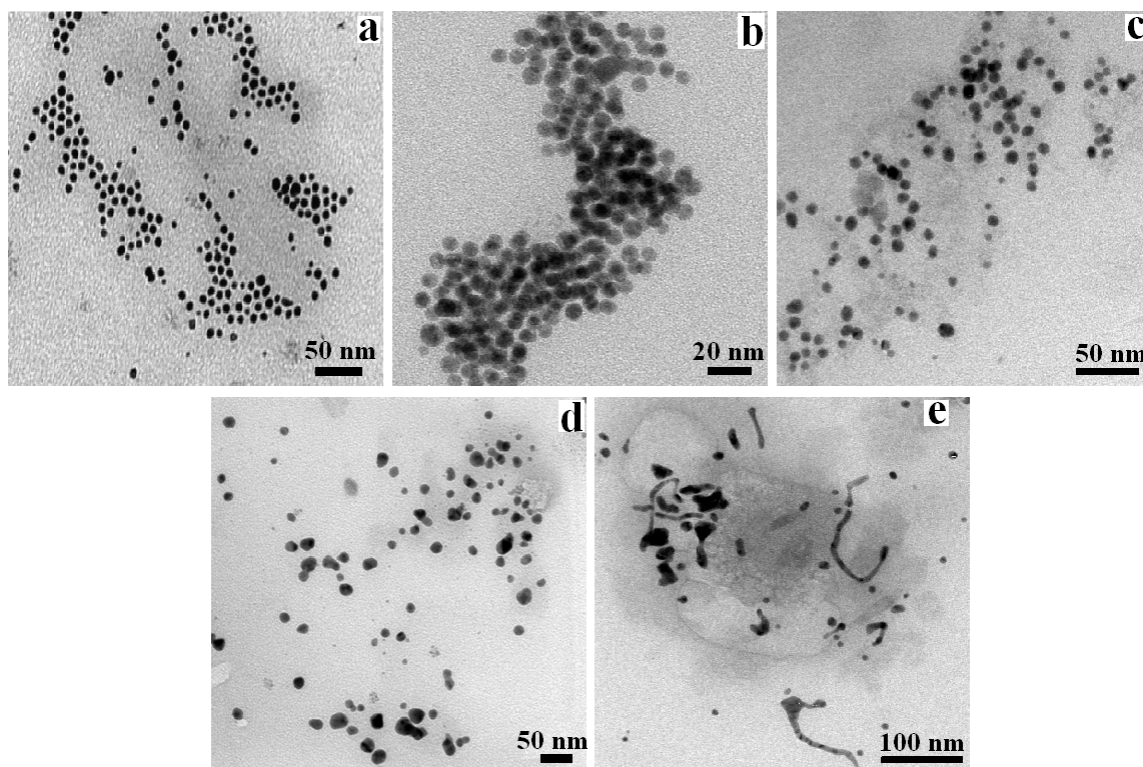


Fig. S4 TEM images of gold nanoparticles after transferring to toluene phase of (a) **1a**, (b) **2a**, (c) **3a**, (d) **4a** and (e) **5a**.