

Supporting Information

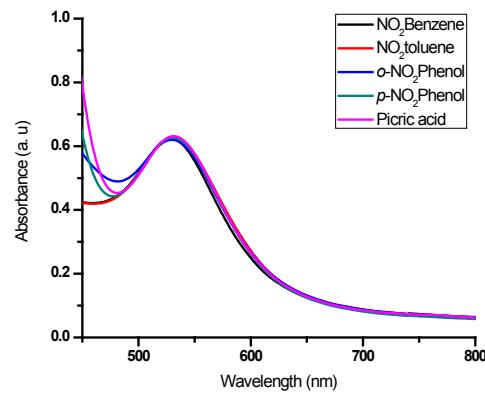


Fig. S1 UV-vis spectra of AuNPs after addition of the nitrocompounds.

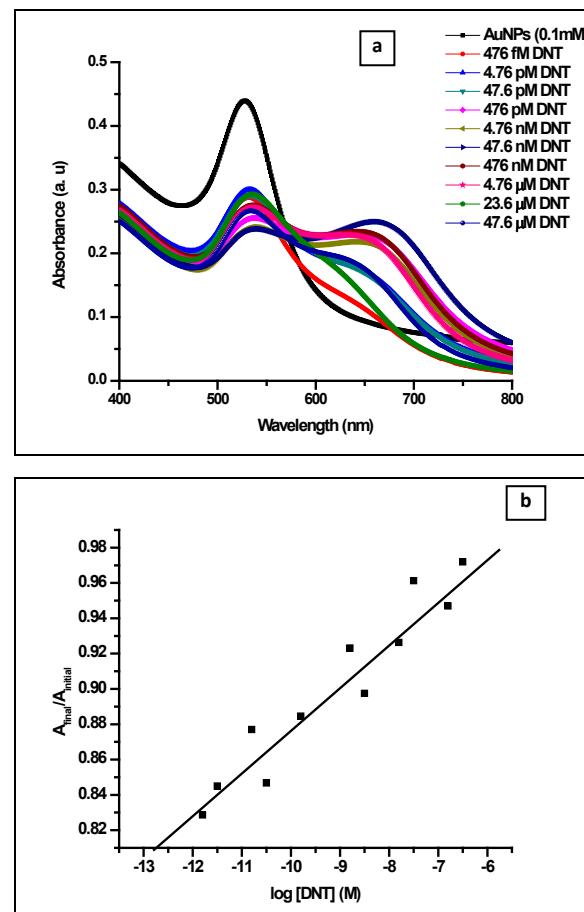


Fig. S2 (a) UV-vis spectra of AuNPs before and after addition of different concentrations of 2,4-DNT, concentration of nitrocompound in the final solutions ranges from 47.6 μM to 476 fM, (b) Plot of $A_{\text{final}}/A_{\text{initial}}$ against $\log [2,4\text{-DNT}]$ for 2,4-DNT assay.

Table S1 Literature data on sensing of TNT and 2,4-DNT using variety of nanoparticles. The reference numbers given in the last column are the references shown in main manuscript.

S.No	Analyte	Nanosensor	Method of detection	Low Limit of Detection	Ref
1.	TNT	Au@SiO ₂ @Ag ₁₅ MF	Fluorescence,	Sub-zeptomole level,	17e
			Colorimetric	>44 μM	
2.	TNT	Popcorn shaped AuNPs functionalized SWCNT	SERS	100 fM	18b
3.	TNT and 2,4-DNT	As prepared amine capped AuNPs	Visual,	476 fM (TNT and 2,4-DNT),	This work
			Colorimetric	155 fM and 359 fM respectively	
4.	TNT, DNT	EDA modified AuNPs	Naked eye,	400 pM,	19b
			Colorimetric,	40 pM, 4 μM	
			DLS	400 fM	
5.	TNT	Cysteamine modified AuNPs	Visual detection within 10min,	nM level,	1a
			Colorimetric	500 fM	
6.	TNT	Cysteine modified AuNPs	SERS	2 pM	18a
7.	TNT		Immunosensor	440 nM- 44 pM	21b
8.	TNT	ATP functionalized AuNPs	Colorimetric,	50 μM,	19a
			DLS	100 pM	
9.	TNT	ATP functionalized AuNPs	Two Photon Scattering assay	120 pM	21c
10.	TNT and DNT	pATP monolayer modified electrode,	Electrochemical method	75 nM and 5 μM	20b
		Cross-linking of AuNPs by oligothioaniline,		2 nM,	
		π donor oligoaniline cross-linked AuNPs functionalized electrode		200 pM	
11.	TNT	NH ₂ -Capped-nanocrystal ZnS-Mn ²⁺	Fluorescence	1 nM	17d
12.	TNT	Fluorescent dye and amine covalently modified onto Silica NPs	FRET	1 nM	17c
13.	TNT	Nanocomposite modified GC electrodecontaining CuNPs and SWCNT in nafion	Adsorptive stripping voltammetry	4.4 nM	20a
14.	TNT and DNT	EHDAB capped Au octahedron array	SERS	nM level 10 nM	18d
15.	TNT	PPV@MSN-NH ₂	FRET	600 nM	17b
16.	TNT	NBD-APTS-Silica NPs	FRET	1-100 μM	17a
17.	TNT	Au@PAT NPs	SHINERS	10 μM level	21c

TNT=2,4,6-trinitrotoluene, 2,4-DNT=2,4-dinitrotoluene, PAT= poly(2-aminothiophenol), NPs= Nanoparticles, SHIERS= Shell-Isolated Nanoparticle Enhanced Raman Spectroscopy, SERS= Surface Enhanced Raman Scattering/Spectroscopy, FRET= Fluorescence resonance energy transfer, DLS= Dynamic Light Scattering, ZnS-NH₂-Q NPs= Hydroquinone functionalized amine capped ZnS nanoparticle, PPV@MSN-NH₂= Amine functionalized mesoporous SiO₂ NPs containing poly(p-phenylenevinylene), ATP= 4-Aminothiophenol, NBD-APTS-Silica NPs= Nitrobenzoxadiazole and 3-aminopropyltriethoxysilane silica NPs, EDA= Ethylenediamine, GC electrode= Glassy Carbon electrode, SWCNT= Single Walled Carbon Nanotube.