Low temperature thermal dissociation of Ag quantum clusters in solution and formation of monodisperse Ag_2S nanoparticles

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S1. Supporting information 1

Preliminary confirmation of cluster formation through UV/Vis profile and a TEM image

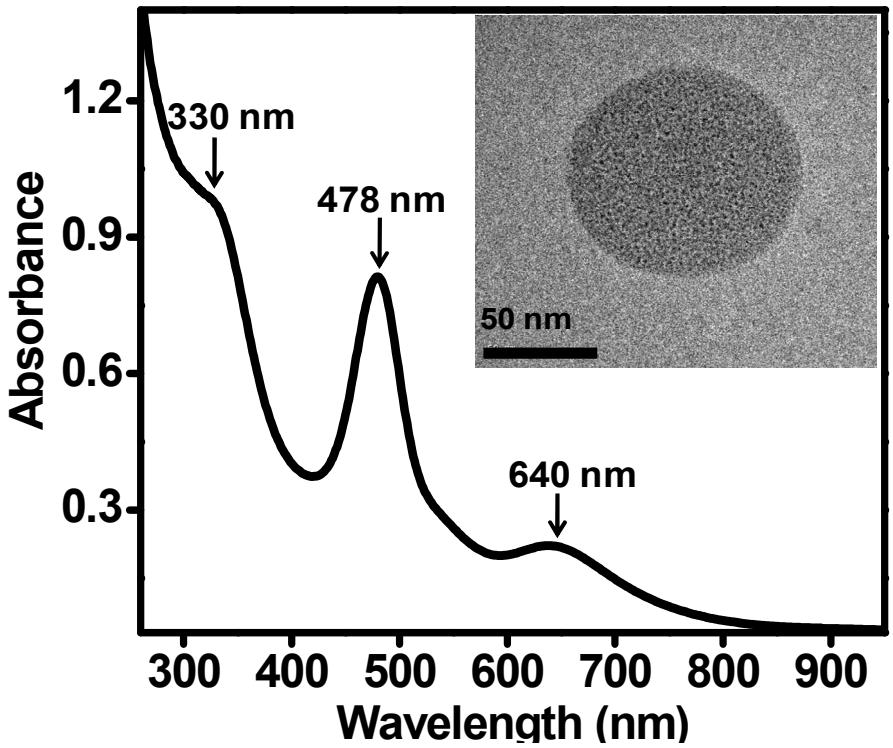

Figure S1. UV/Vis spectrum of freshly prepared $Ag_{25}SG_{18}$ quantum clusters in aqueous solution showing the characteristic absorption peaks. Inset shows the TEM image of the cluster.

S2. Supporting Information 2

Optical absorption spectrum of the freeze dried control cluster solution.

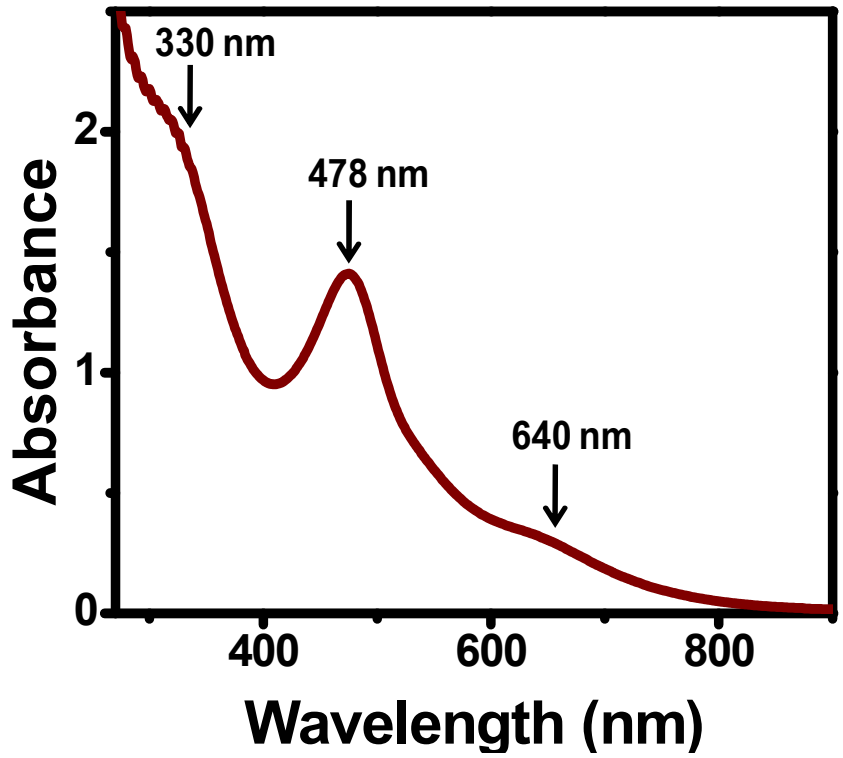

Figure S2. Shows the optical absorption spectrum of cluster after freeze drying (before subjecting to heating).

S3. Supporting Information 3

Time dependent UV/Vis spectra of $Ag_{25}SG_{18}$ quantum cluster.

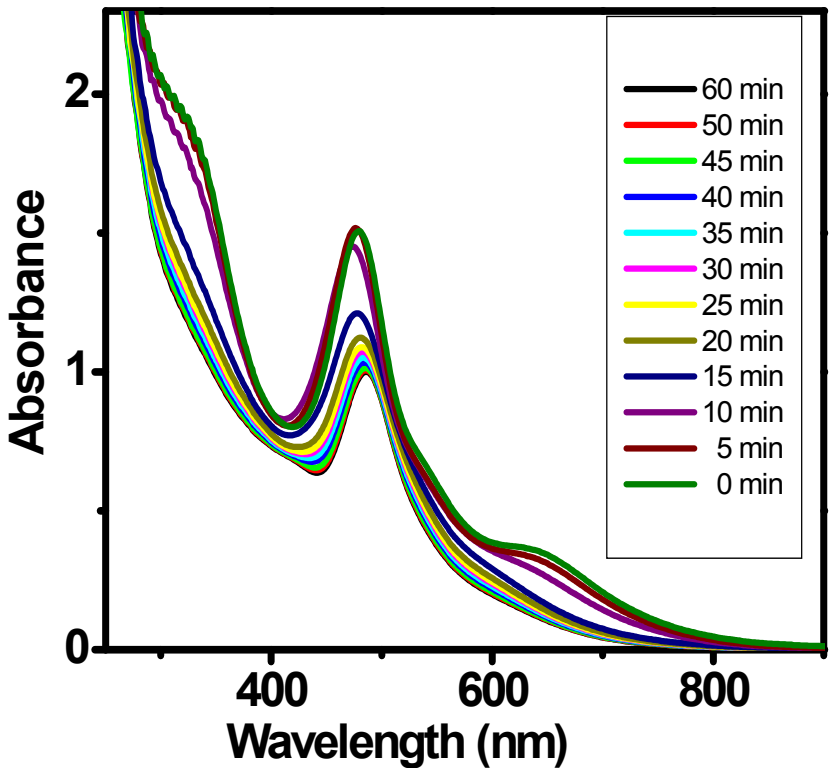

Figure S3. Time dependent UV/Vis spectra of freshly prepared $Ag_{25}SG_{18}$ clusters from 0 min-60 min at room temperature.

S4. Supporting Information 4

Kinetics of decomposition

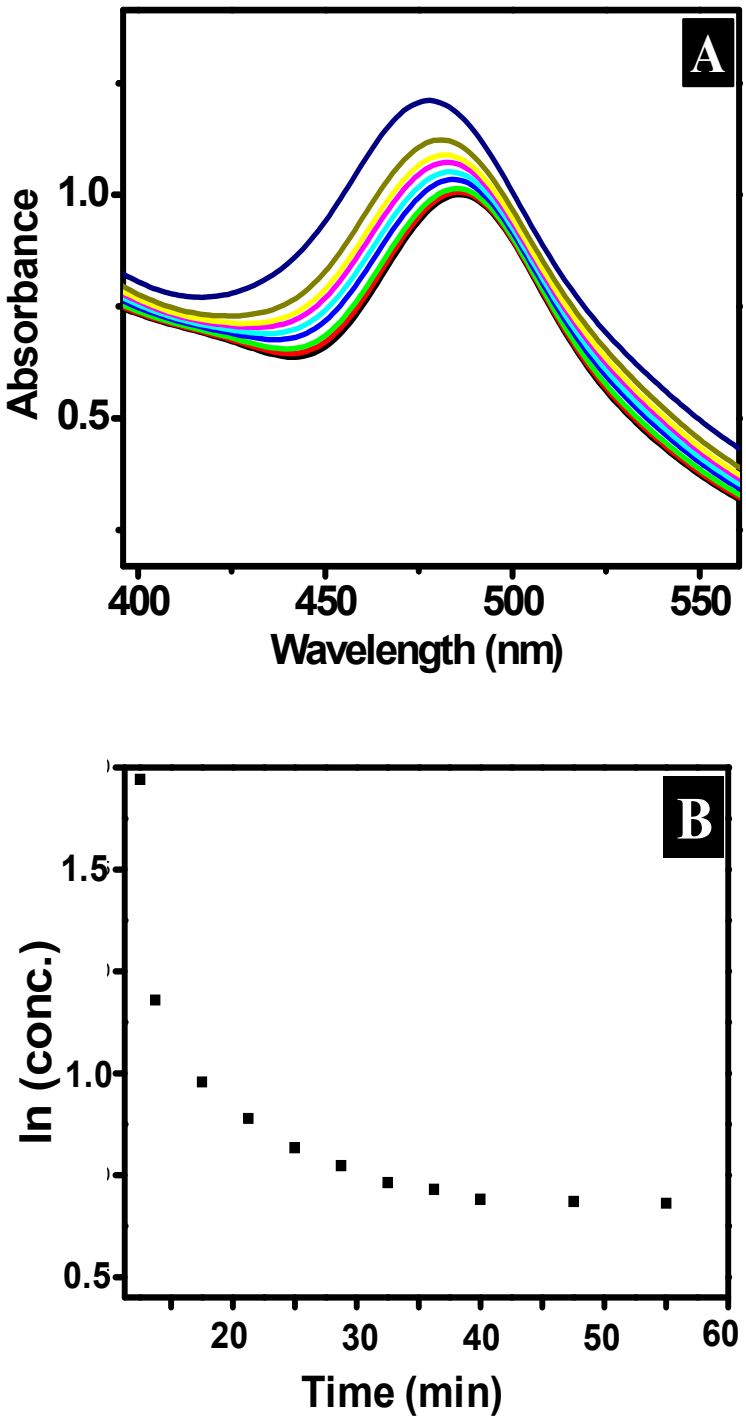

Figure S4. A) Expanded view of time-dependent variation of the 480 nm peak in the UV/Vis spectrum of clusters. B) Graph showing the decrease in the intensity of 480 nm peak with time, indicating a first order kinetics.

S5. Supporting Information 5

X-ray diffraction pattern of $Ag_{25}SG_{18}$ cluster which shows only broad peak at 36º (2θ)

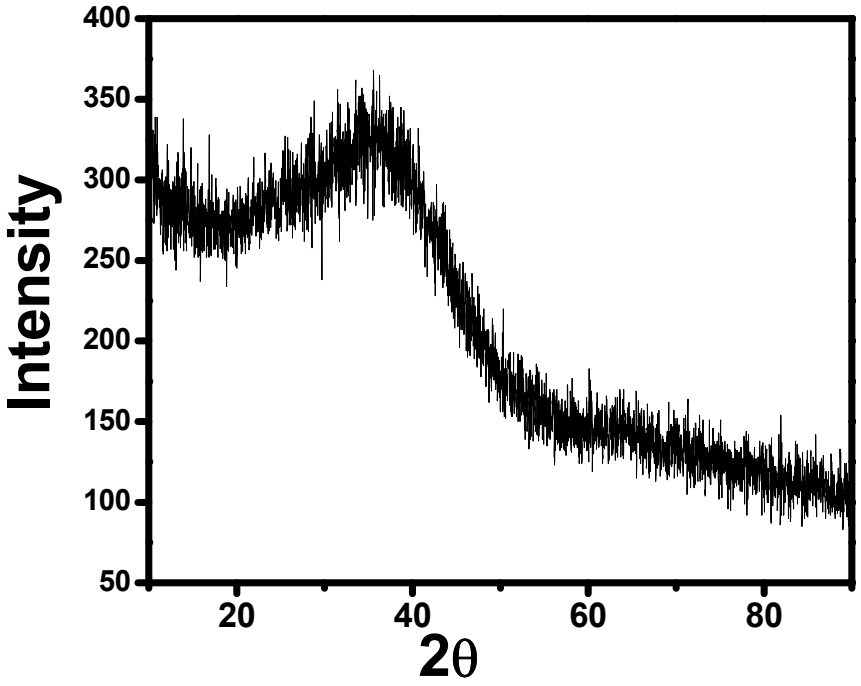

Figure S5. X-ray diffraction pattern of freshly prepared $Ag_{25}SG_{18}$ cluster.

S6. Supporting Information 6

Mass spectrum of glutathione taken in the negative mode showing fragments. The peak positions are comparable with what we obtained for the supernatant solution of the decomposed sample.

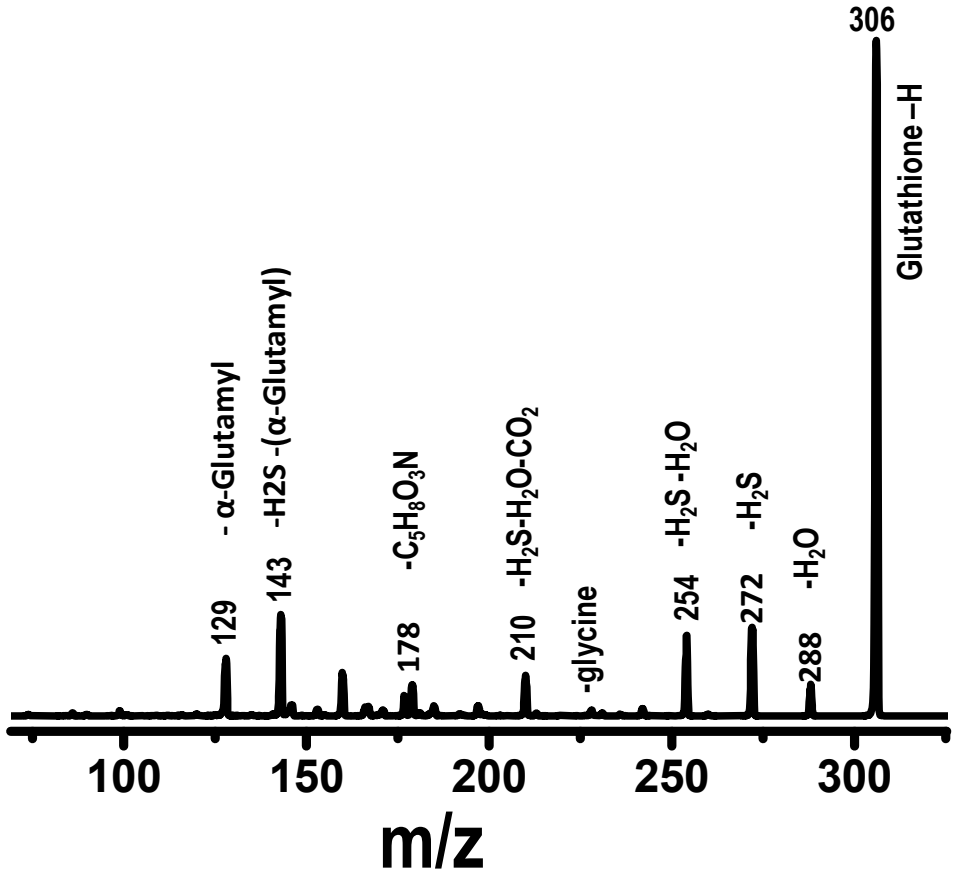

Figure S6. A portion of negative ion ESI MS of glutathione.