Electronic supplementary information (ESI)

Au Nanoparticles in Alumina Sols and Coatings

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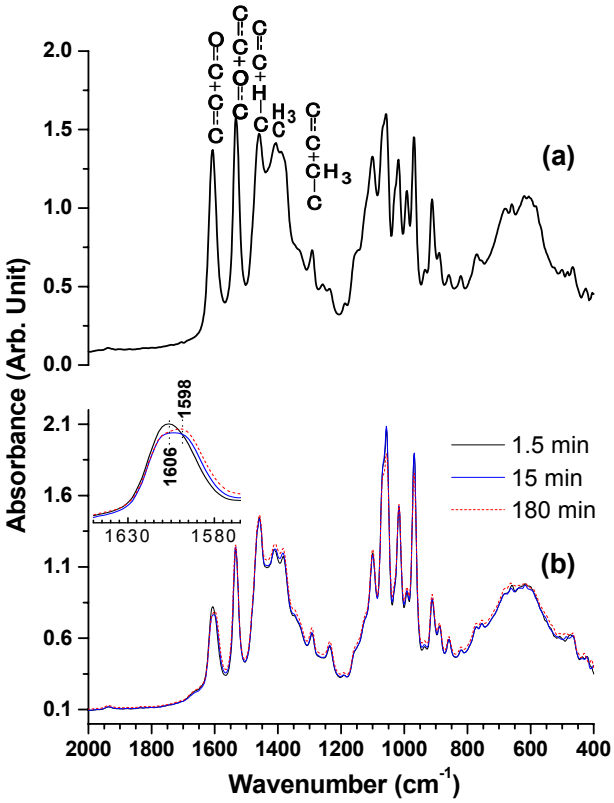

Fig. S1. FTIR spectra of (a) 1-propanol – 2-butanol solution of $[Al(O–s\text{-}Bu)_{3–0.66}(acac)_{0.66}]$ (designated as $ASB_{0.66acac}$), and (b) a representative $ASB_{0.66acac}$ solution after addition of equivalent amount of $HAuCl_4$ for obtaining 1 mol% Au-99% $AlO_{1.5}$ sol with respect to time. Inset shows spectra of 1650-1570 cm^{-1} region in a magnified scale. FTIR of sols up to 5 mol% Au have also been recorded and found similar type of spectra.

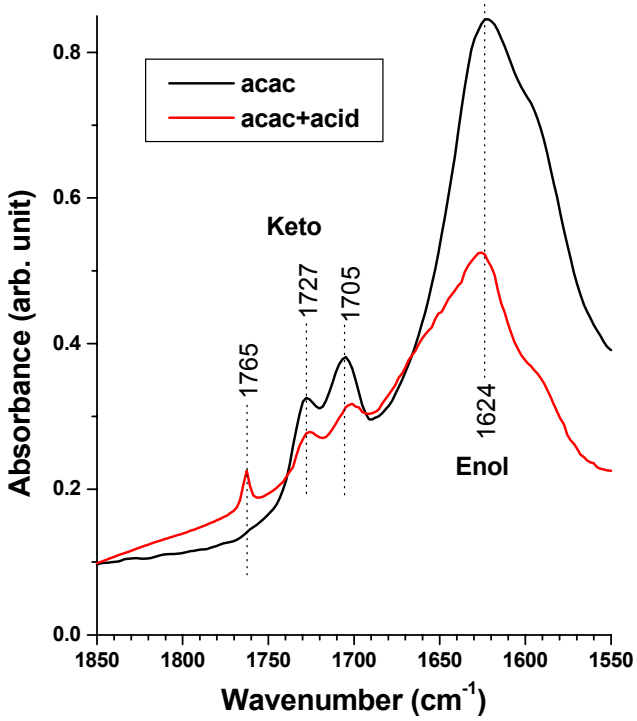

Fig. S2. FTIR spectra of acetylacetone (5 wt% in 1-propanol – 2-butanol mixture) and after addition of equimolar HNO_3 into it.

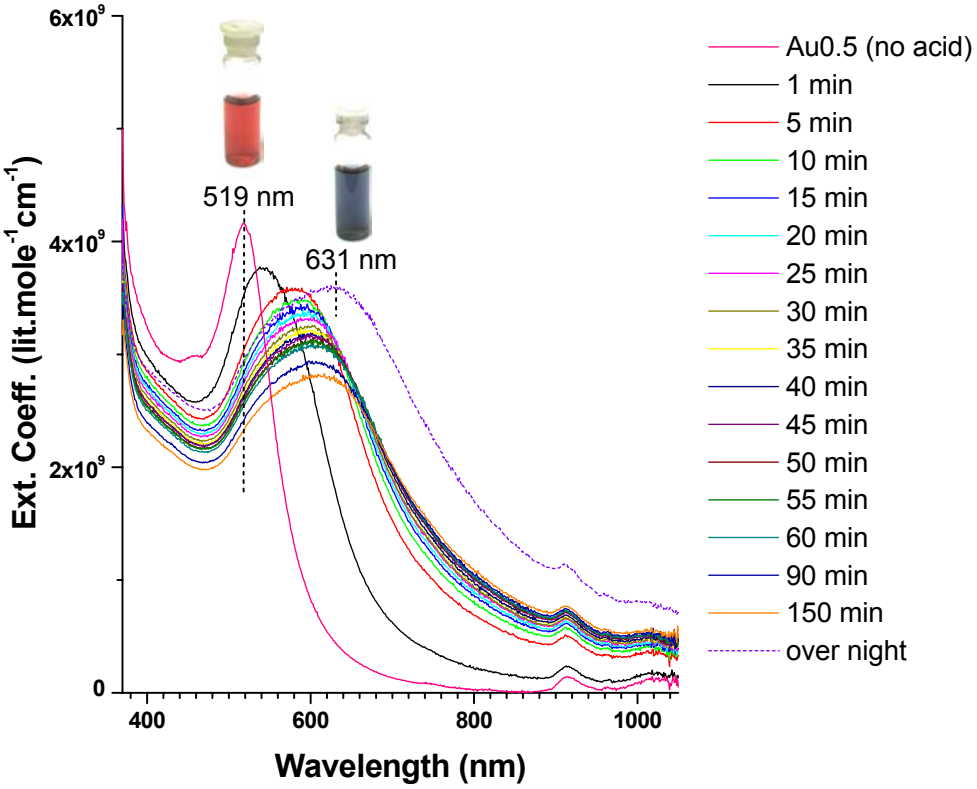

Fig. S3. Optical absorption spectral evolution of 0.5 mol% Au-99.5% $AlO_{1.5}$ sols (Au0.5) before and after addition of HNO_3 (1 mole H^+ per mole of Al) with respect to time. The first spectrum was recorded after 1 min of acid addition followed by as indicated in the body of the figure. The photographs of sols before acid addition and after end of reactions (over night / ~16 h) are also shown.