

Fig S1. Histograms depicting AuNS branch length from TEM analysis of (a) one-step and (b) two-step reactions.

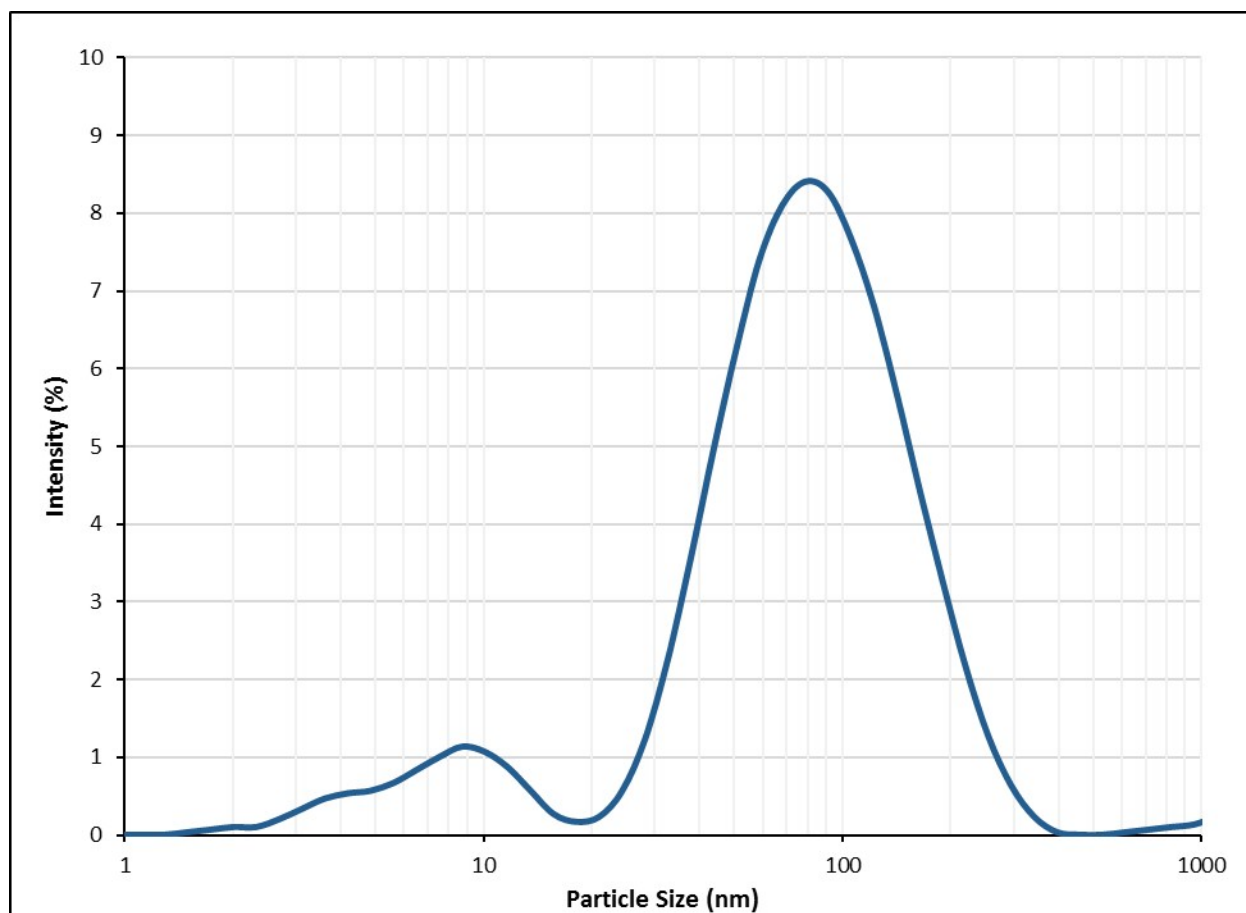


Fig S2. Hydrodynamic diameter of bare AuNSs prepared through the two-step reaction.

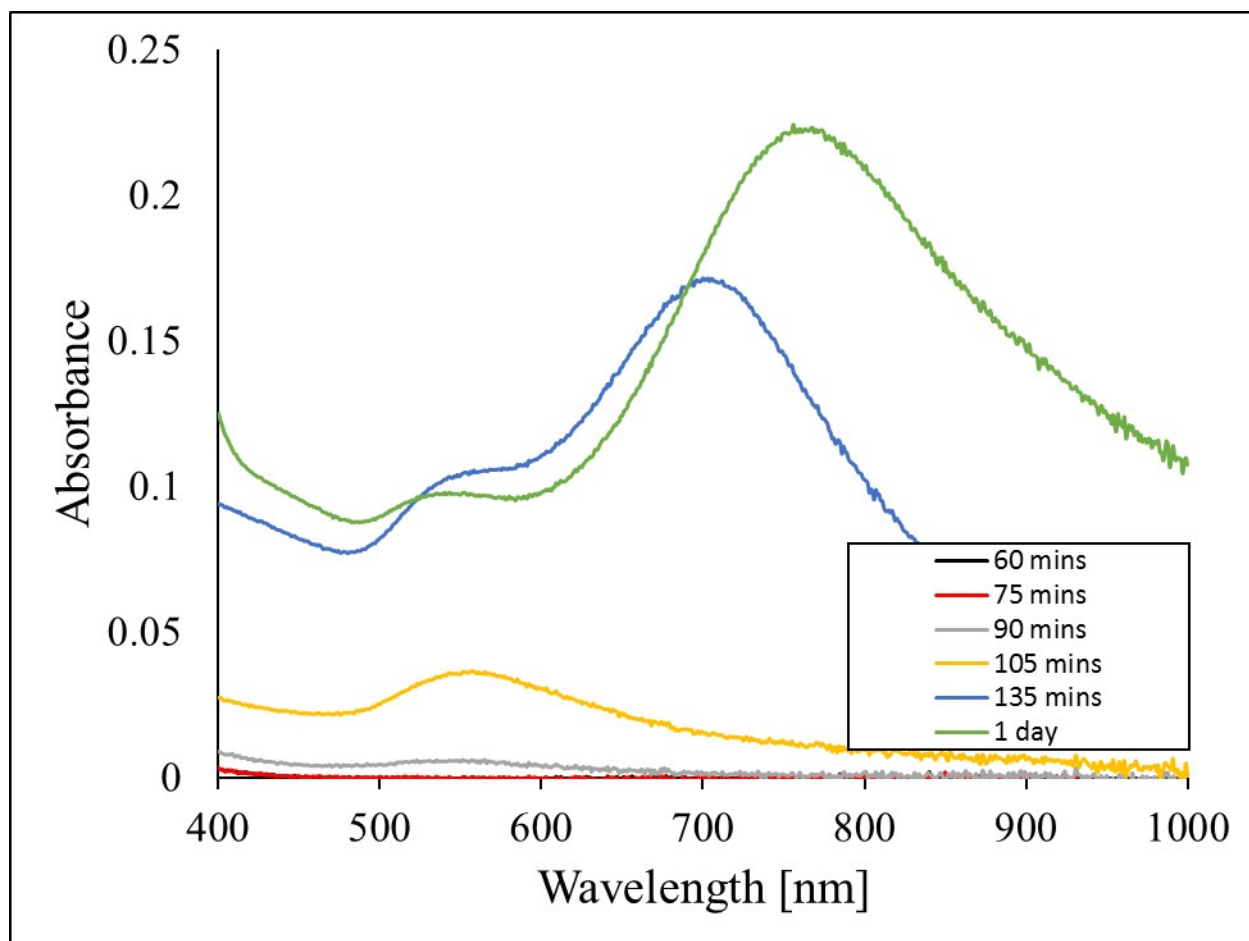


Fig S3a. Evaluation of the LSPR during AuNS formation. Values indicate elapsed time since the first addition of HAuCl_4 to HEPES. The second addition occurs 80 minutes after the start of the reaction.

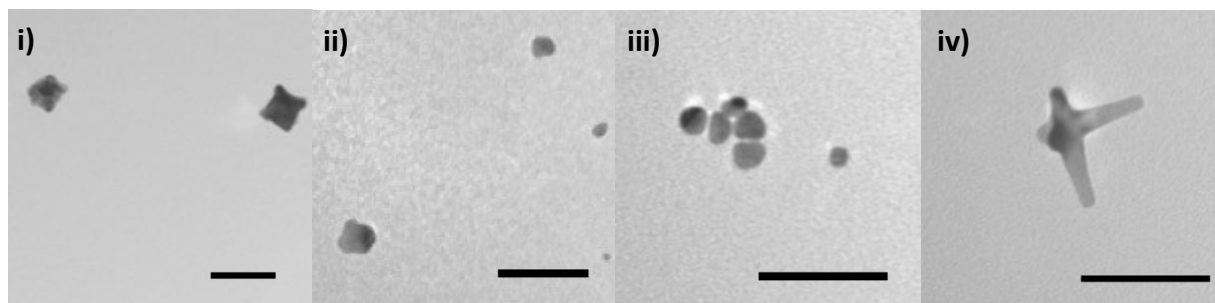


Fig S3b. TEM images of AuNSs prepared using a seed-mediated approach. Images correspond to time values after the start of the reaction: (i) 75 mins (ii) 105 mins (iii) 135 mins (iv) one day. (scale bar = 50 nm)

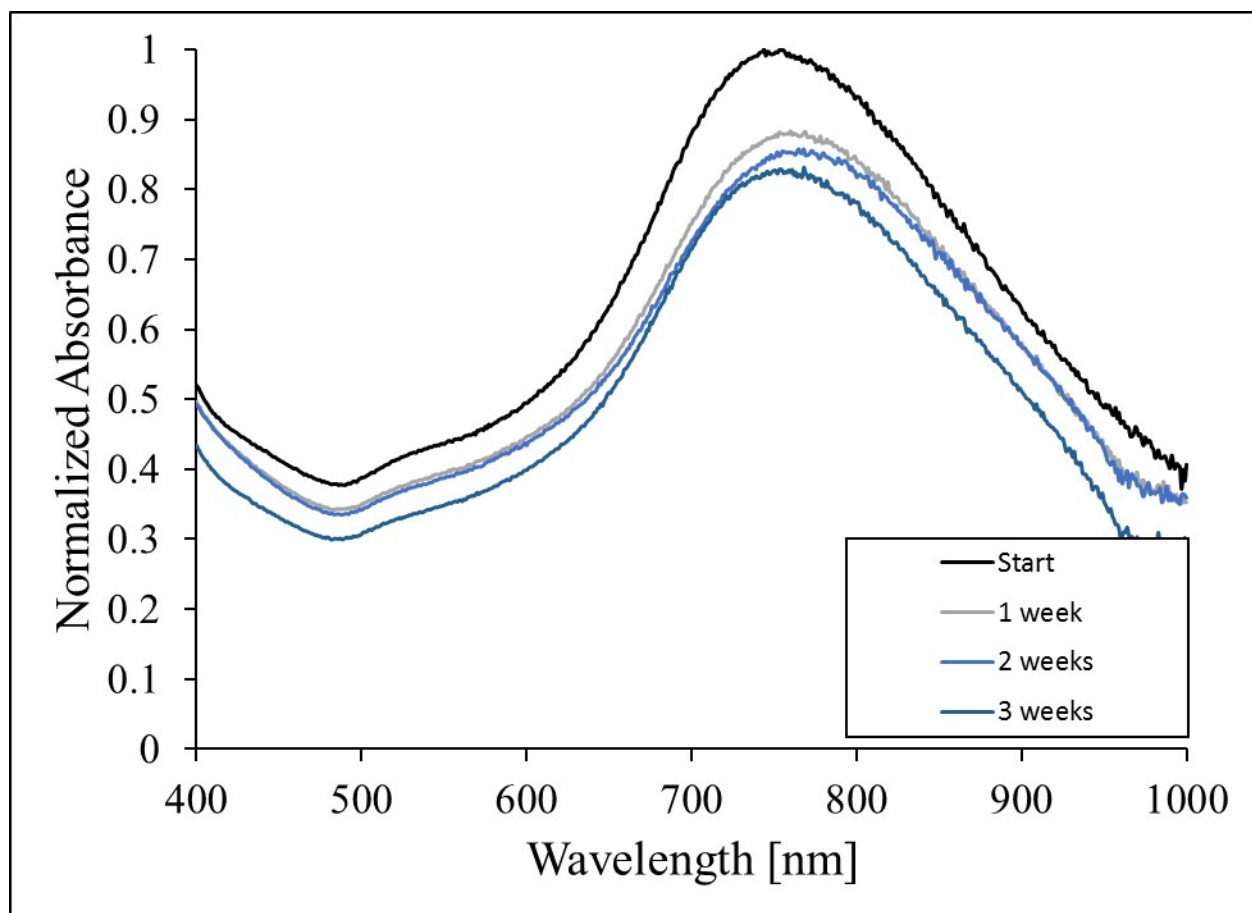


Fig S4a. Colloidal stability of AuNS in D.I. water. Reported values are normalized differences in O.D. of the nanoparticle suspension.

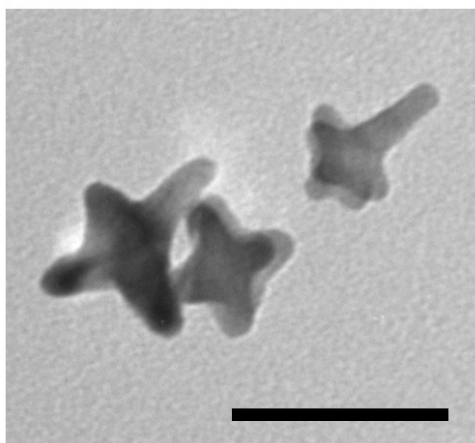


Fig S4b. Representative TEM image of AuNS sample, prepared using seed-mediated synthesis, after three-weeks suspension in D.I. water. (scale bar = 50nm)

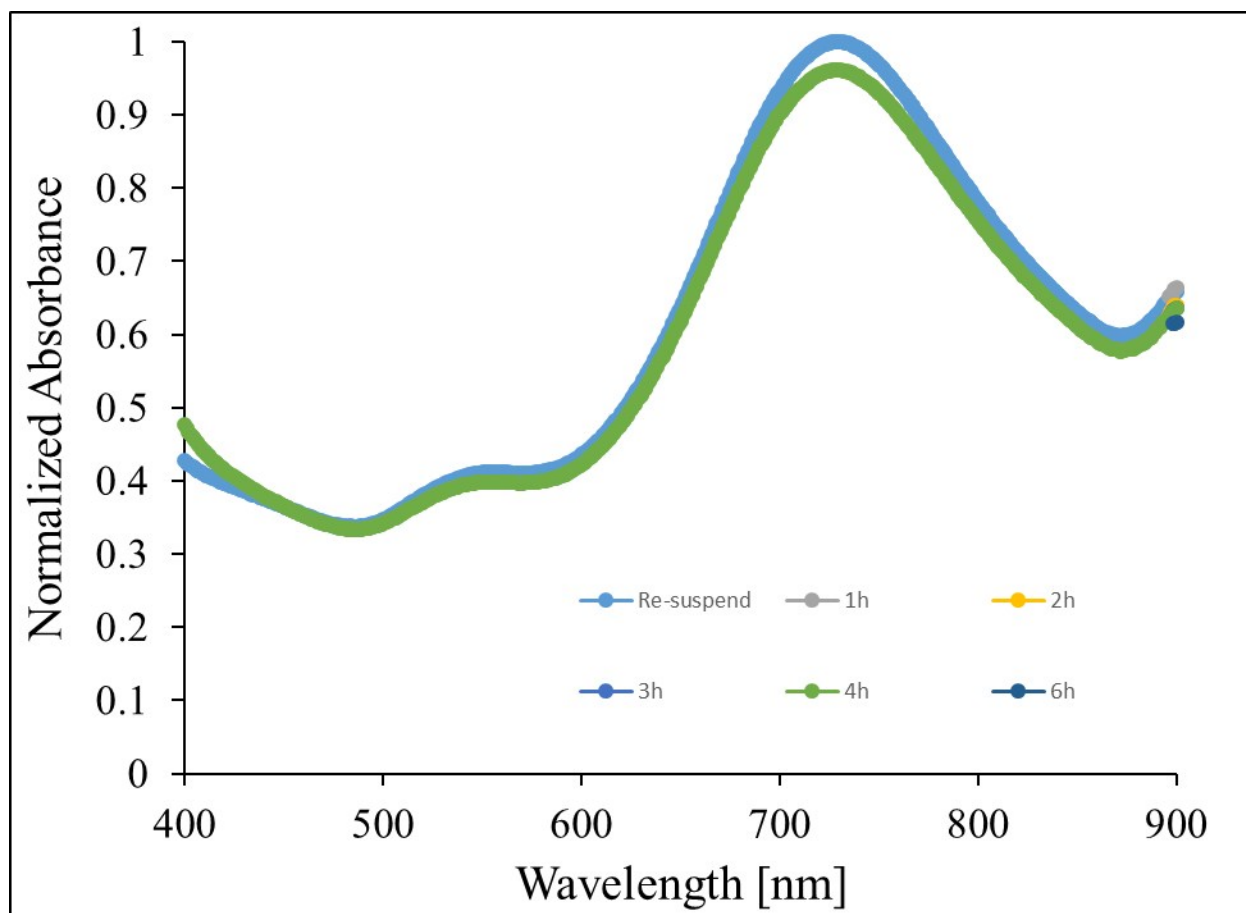


Fig S5. Colloidal stability of AuNS re-suspended in 1X PSB. Reported values are normalized differences in O.D. of the nanoparticle suspension.

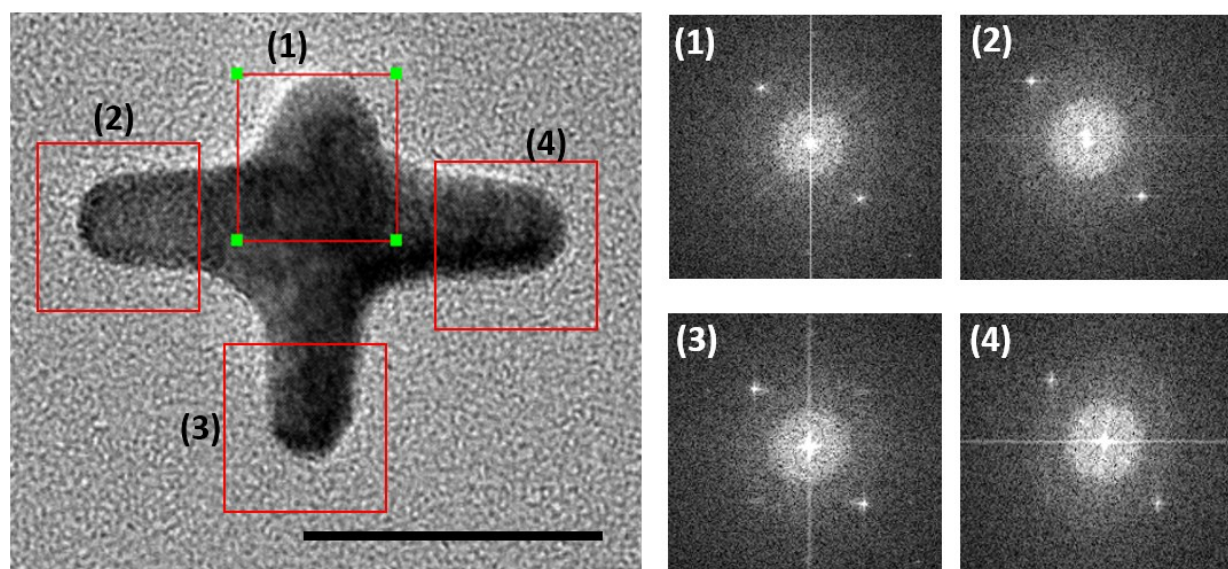


Fig S6. FFT diffraction of a AuNS at its four arms. Each arm depicts an identical FFT pattern.

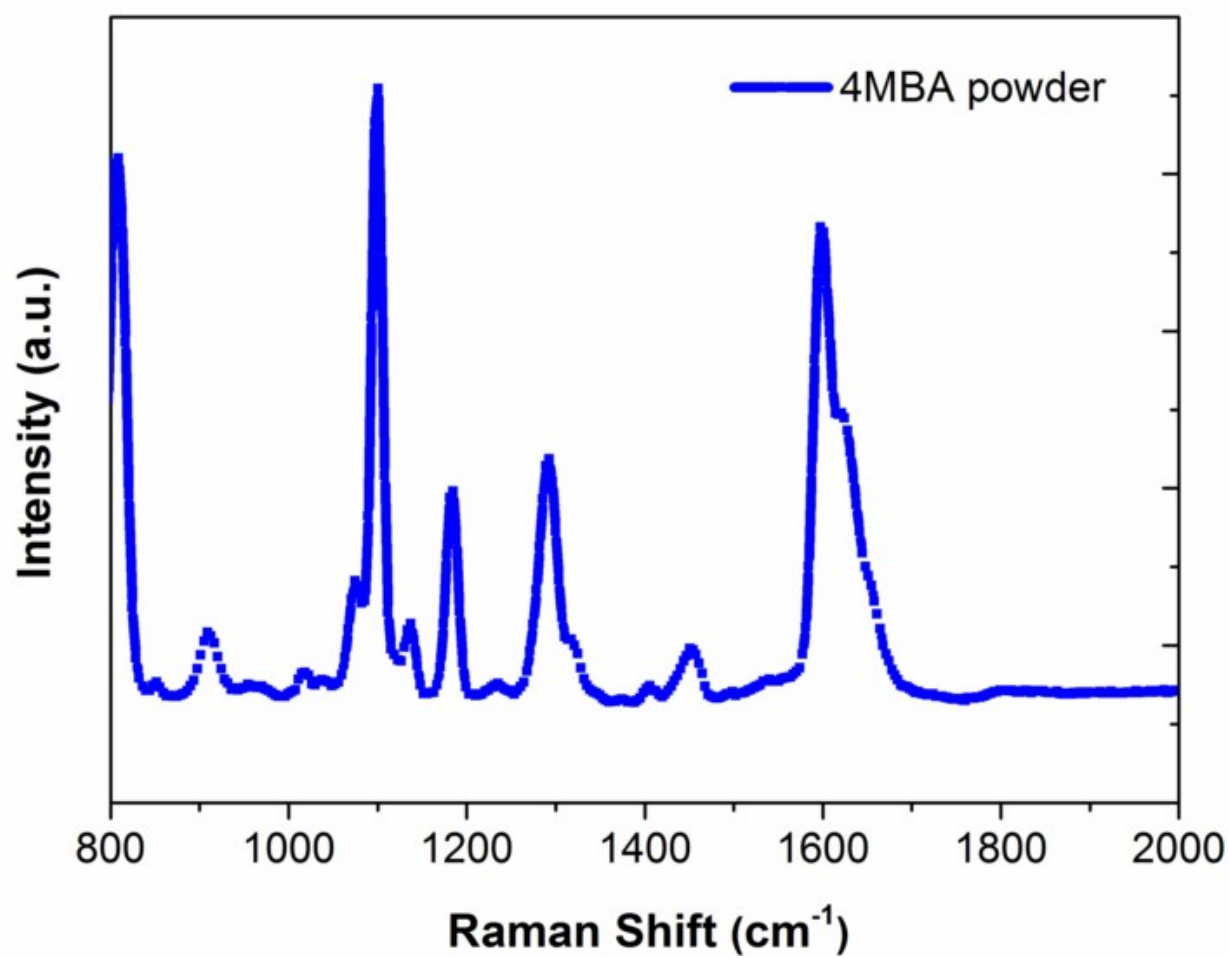


Fig S7. Raman signal of pure 4-MBA powder.