

Electronic Supplementary Information (ESI)

Intrinsic anisotropic crystallization of gold into microplates

Sanju Francis ^{a,*}, Lalit Varshney^a

Experimental:

Gold (III) chloride hydrate (Purity 99.999%) was purchased from Aldrich and Bovine serum albumin (Purity ≥ 98 %) was purchased from Sigma-Aldrich. Water used in all the experiments was purified by SG water system and the conductivity was less than 0.055 $\mu\text{S}/\text{cm}$. All glasswares were washed with chromic acid and thoroughly rinsed with deionized water. Aqueous HAuCl_4 solution of different concentrations was prepared in pure water. To synthesize the nanoparticles, the prepared solution was exposed to gamma radiation in a ^{60}Co gamma chamber (GC 5000, BRIT, India) at a dose rate of 1.6 $\text{kGy}\cdot\text{h}^{-1}$.

UV-Visible spectra of the solution were recorded using Thermo, Evolution 300 spectrophotometer. Scanning electron microscopy (SEM) images were recorded using SERON Technologies Inc., (Model: AIS 2100) operating at an accelerating voltage of 20 keV. X-ray powder diffraction studies were carried out with Philips X-ray diffractometer (Model PW 1729) using $\text{Cu K}\alpha$ radiation. Selected area electron diffraction (SAED) pattern was recorded using JEOL (Model: 200 FX) electron microscope.

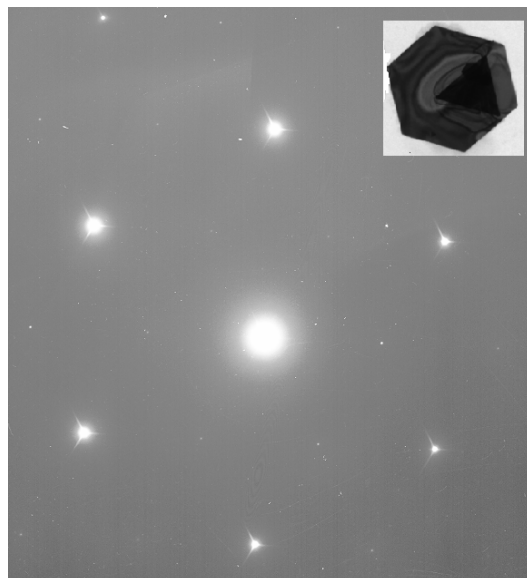


Fig. S1. SAED pattern obtained from a hexagonal microplate (inset).

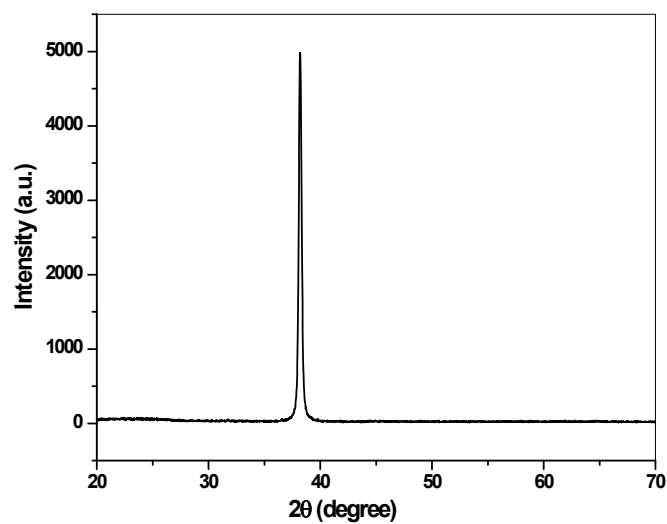


Fig. S2. XRD patterns produced by gold microplates.

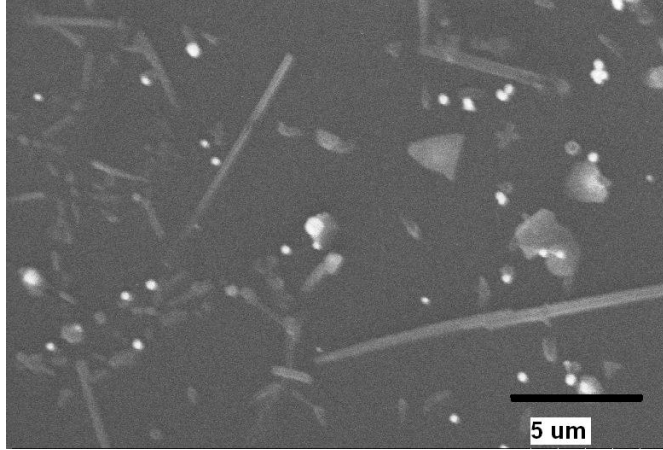


Fig. S3. SEM image recorded immediately after 1 hr of irradiation.