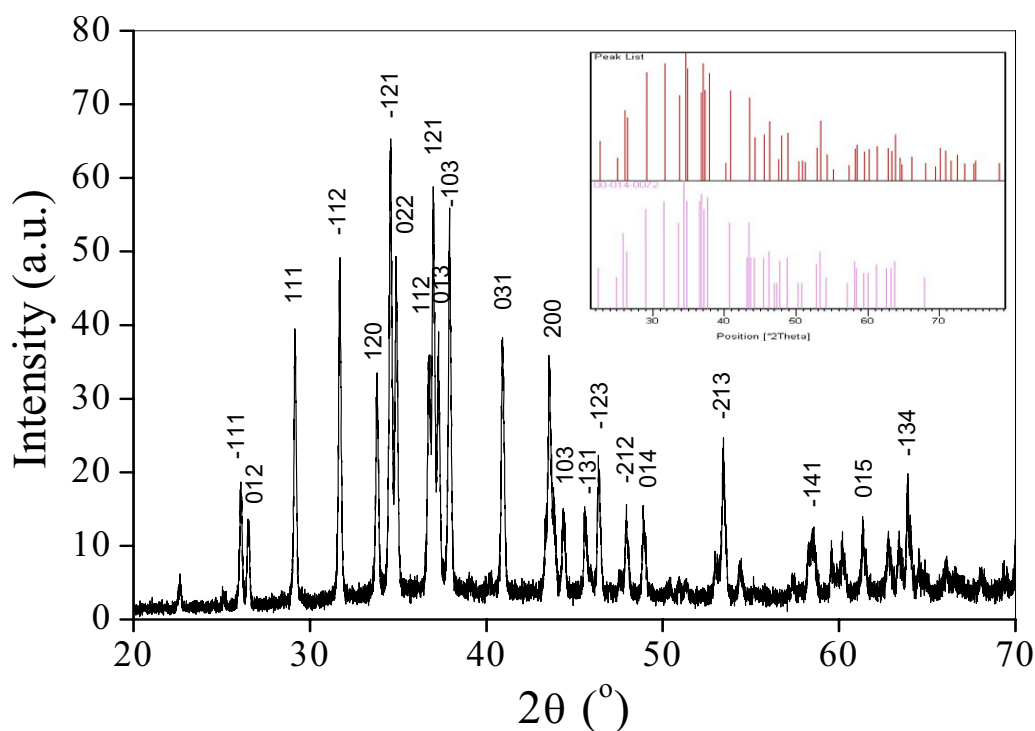


## Electronic Supplementary Information

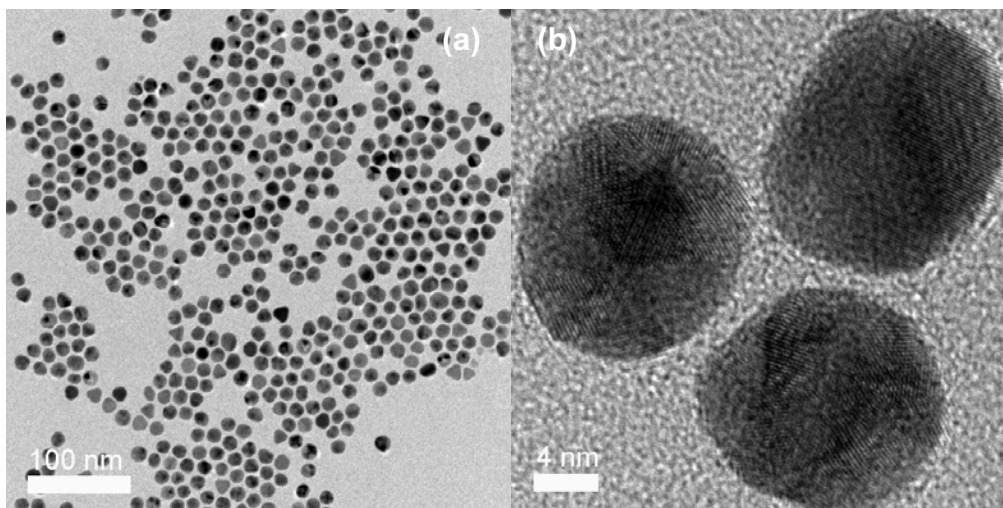
### Room-temperature synthesis of nanocrystalline Ag<sub>2</sub>S and its nanocomposites with gold

Jun Yang<sup>a</sup> and Jackie Y. Ying\*<sup>a</sup>

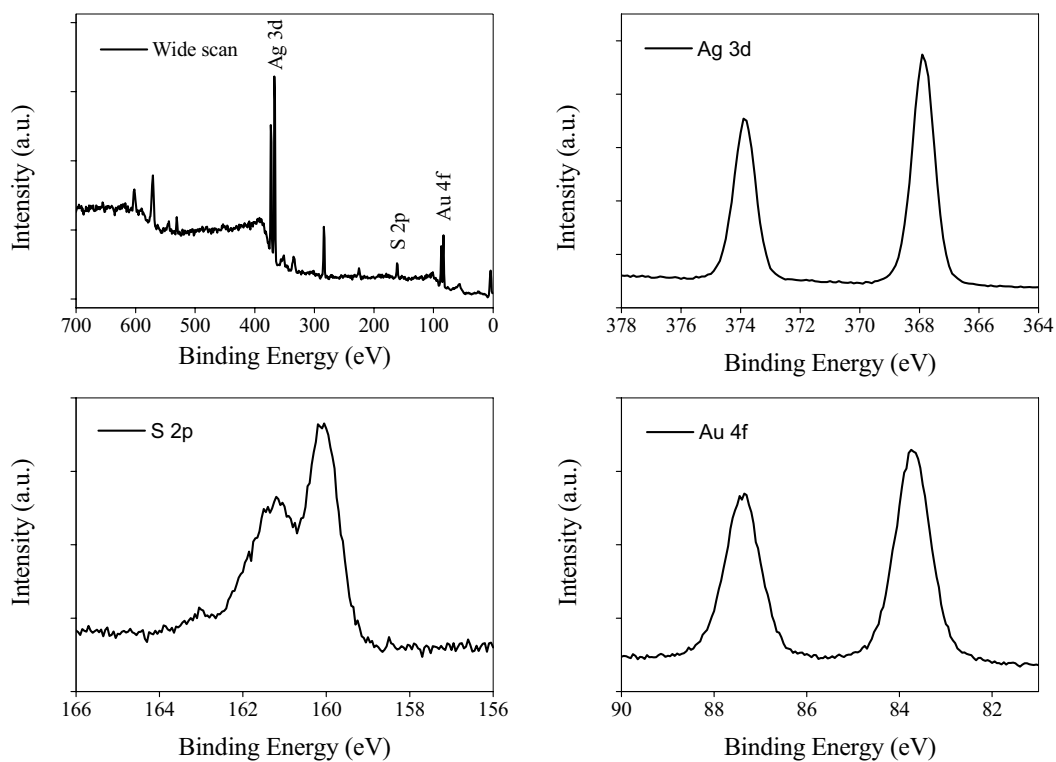
<sup>a</sup>Institute of Bioengineering and Nanotechnology, 31 Biopolis Way, The Nanos, Singapore 138669, Singapore. E-mail: jyying@ibn.a-star.edu.sg; Fax: (+65) 6478-9020



**Fig. S1** XRD pattern of the as-prepared Ag<sub>2</sub>S nanocrystals. Insert shows the peak positions for the Ag<sub>2</sub>S nanocrystals (top) and the monoclinic Ag<sub>2</sub>S phase (JCPDS Card File 14-0072) (bottom).



**Fig. S2** (a) TEM and (b) HRTEM images of 13-nm Au nanoparticles transferred from water to toluene.



**Fig. S3** XPS spectra of the Ag<sub>2</sub>S-Au heterodimers.