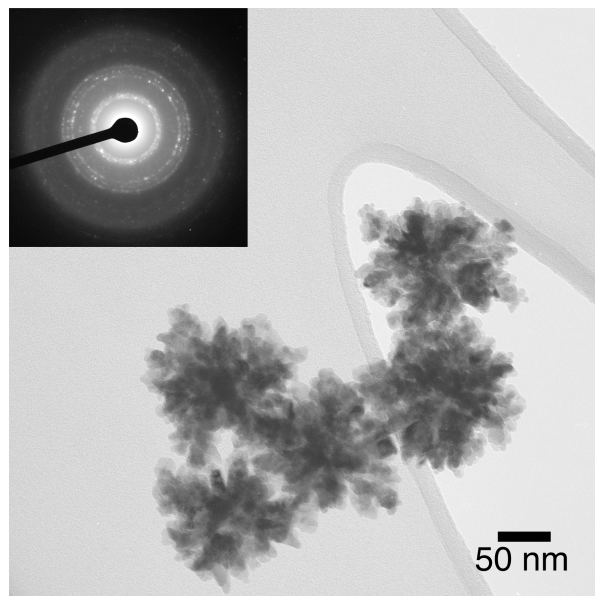


Supplementary Figure 1. UV-Vis absorbance spectra of a PA suspension with $\text{Cd}^{2+}:\text{PA} = 2.4:1$ at several time intervals after injection of $\text{H}_2\text{S}(\text{g})$. The absorption onset (measured as the inflection point) shifts from 466 nm to 476 nm, indicating growth of nanocrystals from ~ 4 to ~ 4.5 nm. Spectrum prior to exposure to H_2S has been subtracted.



Supplementary Figure 2. TEM micrograph of a control sample of CdS mineralized without PA showing spherical aggregates of ~ 5 -10 nm particles. Inset shows electron diffraction pattern corresponding to the wurtzite CdS structure, as indexed by rings with d-spacings of 3.57, 3.34, 3.15, 2.44, 2.06, 1.89, and 1.75 Å, corresponding to the (100), (002), (101), (102), (110), (103), and (112) reflections, respectively.