Electronic Supplementary Information (ESI)

	Name	Position	% Conc
Increasing gold tip size ↓	Cd 3d Au 4f	404.4 83.4	33.75 67.25
	Cd 3d Au 4f	404.3 83.4	28.5 71.4
	Cd 3d Au 4f	404.2 83.2	22.2 77.9

Table S1. XPS relative concentrations of Cd:Au. As the gold tip increases the relative intensity of Cd:Au decreases

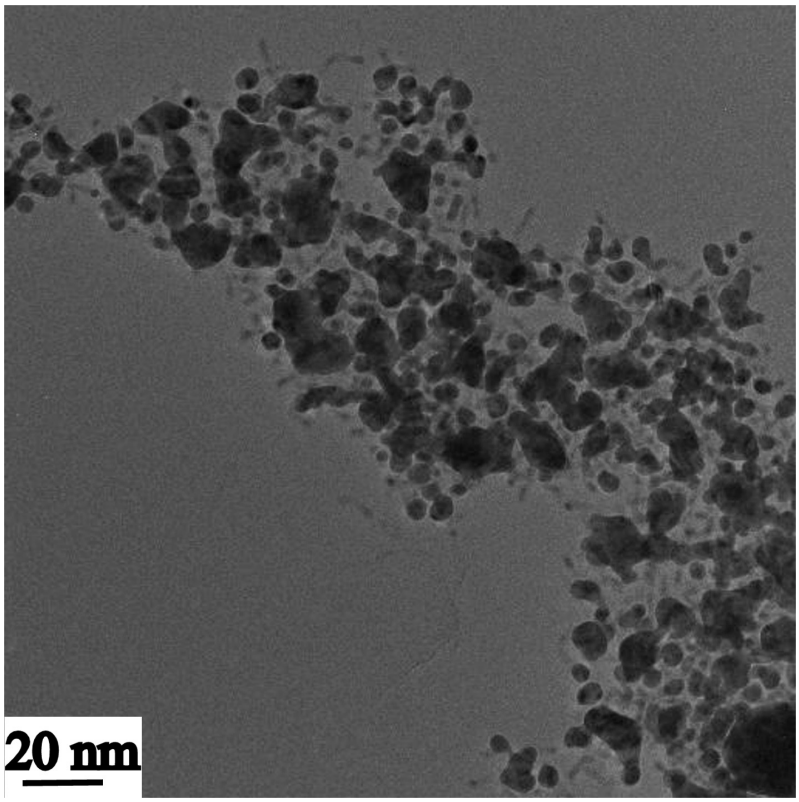

Fig. S1. Gold growth onto CdTe nanorods using 0.0086 mmol AuCl

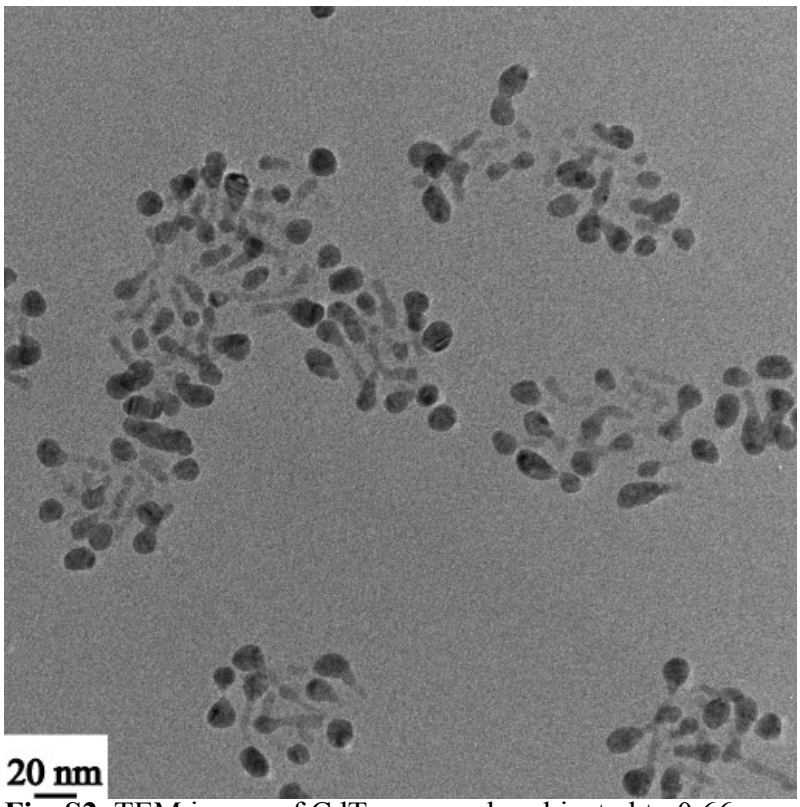

Fig. S2. TEM image of CdTe nanorods subjected to 0.66 mmol $AuCl_3$. The nanorod tip size is approximately 20 nm

Material	A	ΔA	p	Δp	c_0	Δc_0
CdS	41	3	0.44	0.06	0.008	0.002
CdSe	250	30	0.91	0.09	0.005	0.002
CdTe	241	20	0.59	0.05	0.0077	0.0009

Table S2. Fitting parameters used for the model

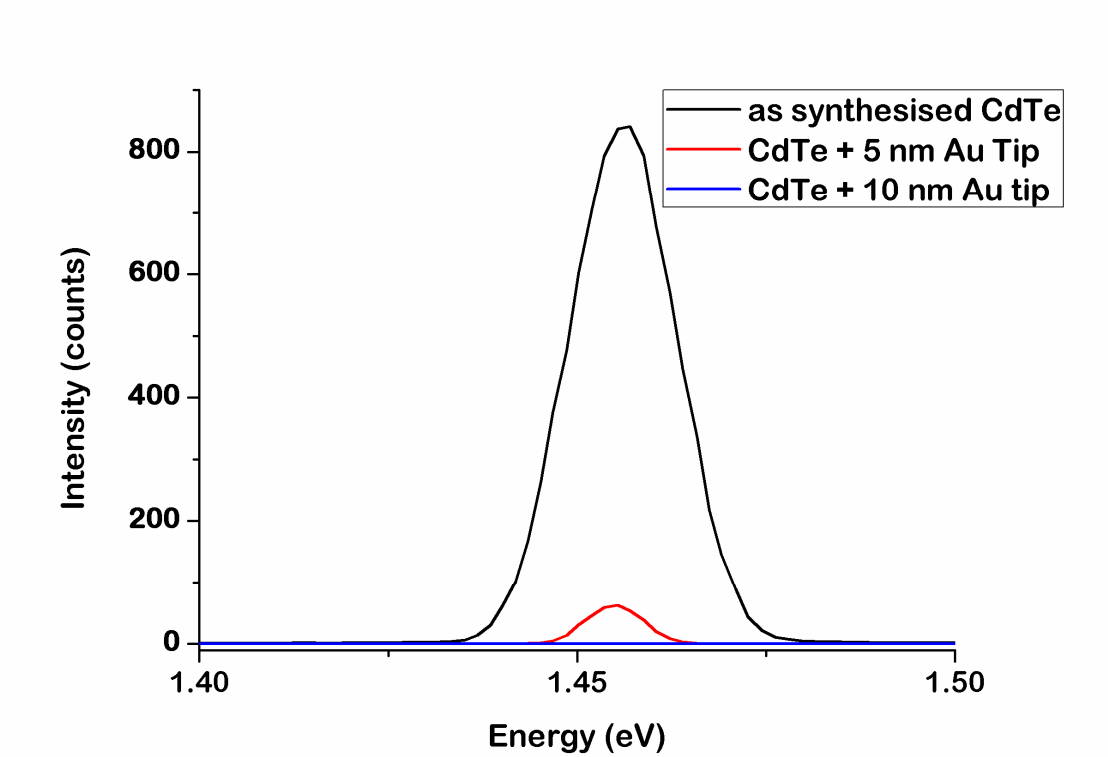

Fig. S3. PL data from as synthesised CdTe nanorods, CdTe nanorods with 5 nm tip and CdTe nanorods with ~ 10 nm gold tip, similar to those images in Fig. 3a and 3b. As the size of gold in the sample increases the emission decreases and disappears for Au tip greater than 10 nm.

Scherrer Analysis			
	CdSe	**CdS**	**CdTe**
Sample 1	10.2 (corresponding to Fig. 1b)	10.6 (corresponding to Fig. 2b)	4.2 (corresponding to Fig. 3a)
Sample 2	38.2 (corresponding to Fig. 1c)		9.1 (corresponding to Fig. 3b)

Table S3. Scherrer analysis of Au peaks from XRD analysis