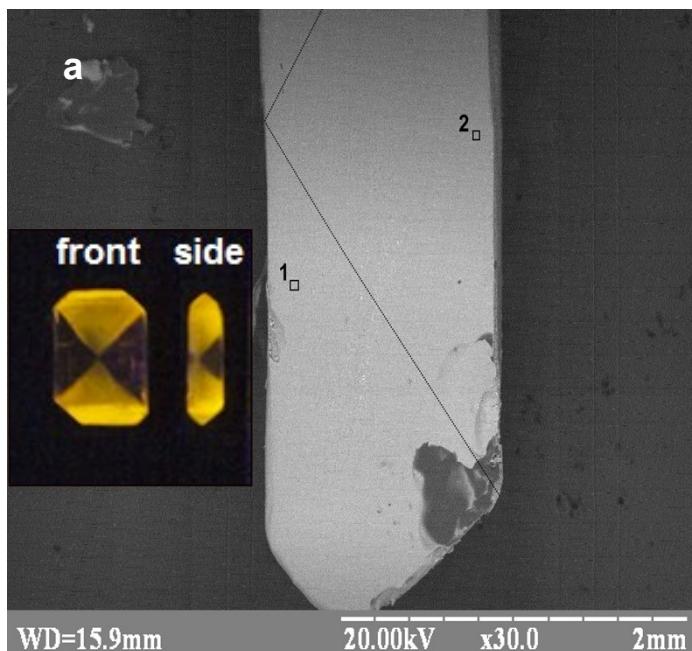


SUPPORTING INFORMATION

Details on crystal growth

Saturated solution of KDP at 20°C has acidic medium with $pH \approx 4$. Solution of CdTe/CdS was prepared in excess amount of Cd^{2+} in alkali medium. Considering that CdTe/CdS nanoparticles are unstable at pH less than 7, the growth of all composite crystals was performed from a parental solution at neutral $pH \approx 7$. Parental solutions were obtained by mixing 10 ml of a saturated at 20°C salt solution of KDP with 5 ml of CdTe/CdS solution and a corresponding amount of alkali solution for increasing of pH till neutral. Parental solutions were stored for slow solvent evaporation in darkness under ambient conditions during the time needed for the growth of the crystals of desired dimensions.



b Elemental composition of KDP:CdTe/CdS composite crystal

Element	Normalized atomic %	
	Area #1	Area #2
K	74.47	73.31
P	17.53	20.35
S	0.12	0.12
Cd	3.91	5.74
Te	3.35	0.48

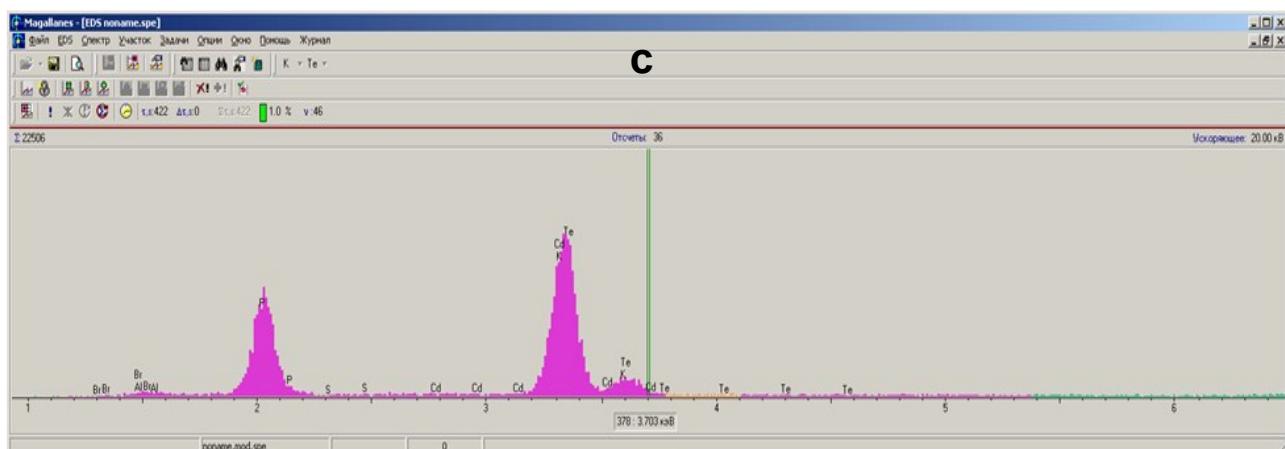


Figure S1. a) EDX scanning areas of KDP:CdTe/CdS composite crystal: 1 – colored and 2 – non colored domains. The inset encodes areas of EDX measurements; b) Elemental composition and c) EDS spectrum of the composite.

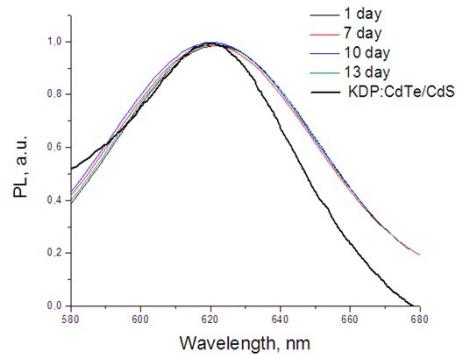


Figure S2. PL spectra of parental solution (colored lines) and KDP:CdTe/CdS composite (black line) measured at different times during the composite crystal growth.

Table S1

AES data for colored 1, 3 and noncolored 2,4 areas of KDP:CdTe/CdS composite crystals

# of sample	D, arb.units	Concentration of Cd ²⁺ , mg/l
1	140.438	0.43571
2	22.558	0.05358
3	113.147	0.34724
4	22.307	0.05374