Electronic Supplementary Material (ESI) for CrystEngComm.

Supporting Information

Multifaceted Application of Designed Coulomb Explosion Occurred on the Oxidized Topological Crystalline Insulator SnTe

*Guofeng Zhang *, Jianbin Chen **

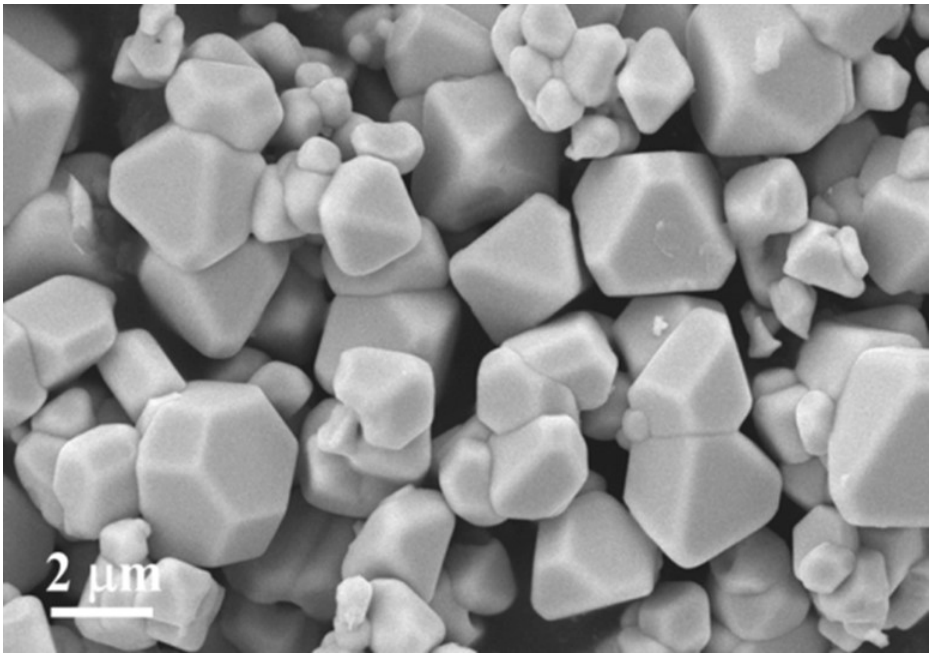

Figure S1. SEM image of prepared SnTe microcrystals.

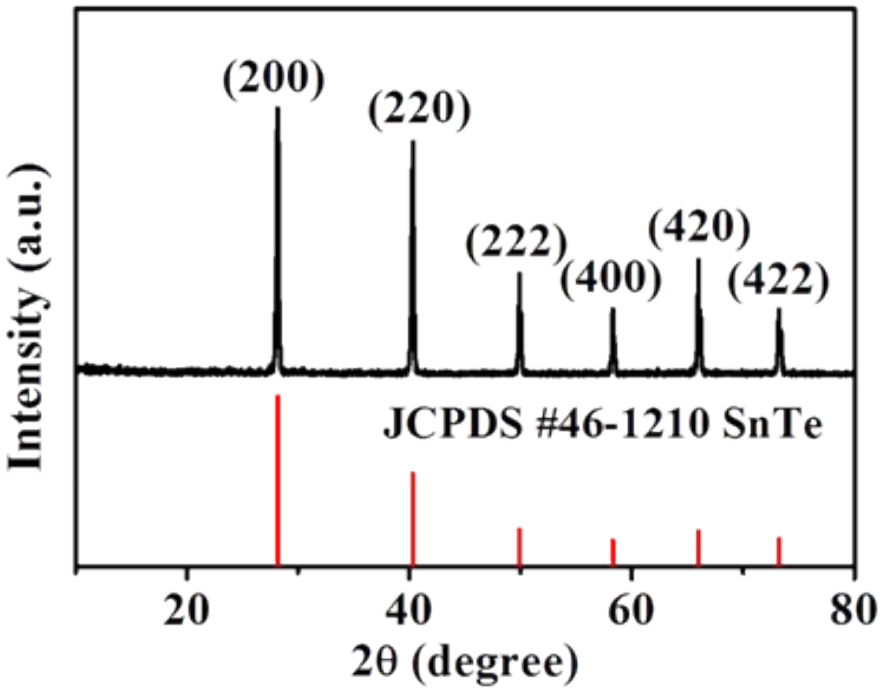

Figure S2. XRD pattern of prepared SnTe microcrystals.

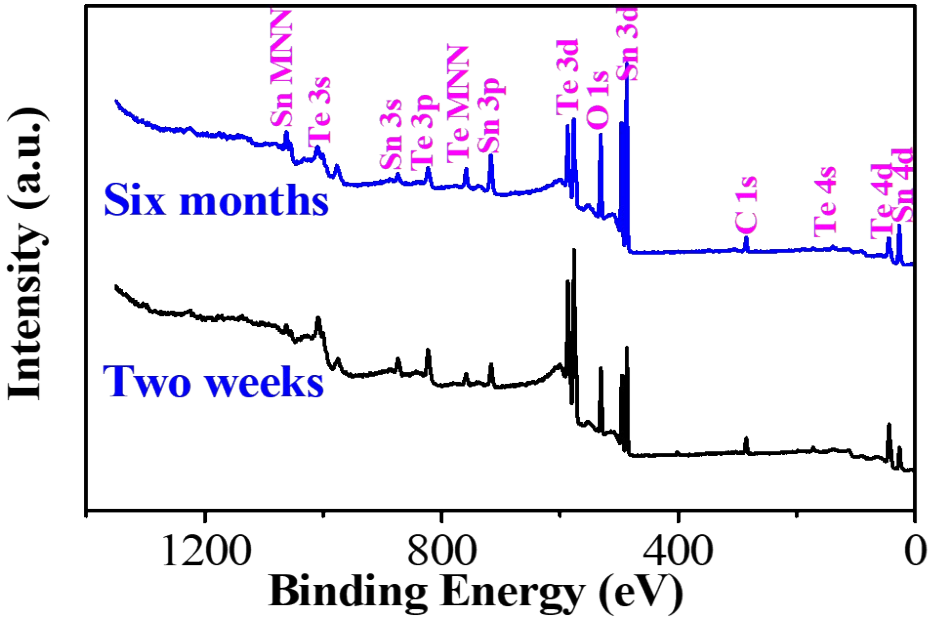

Figure S3. XPS survey spectra of the SnTe surface exposed to air for two weeks and six months.

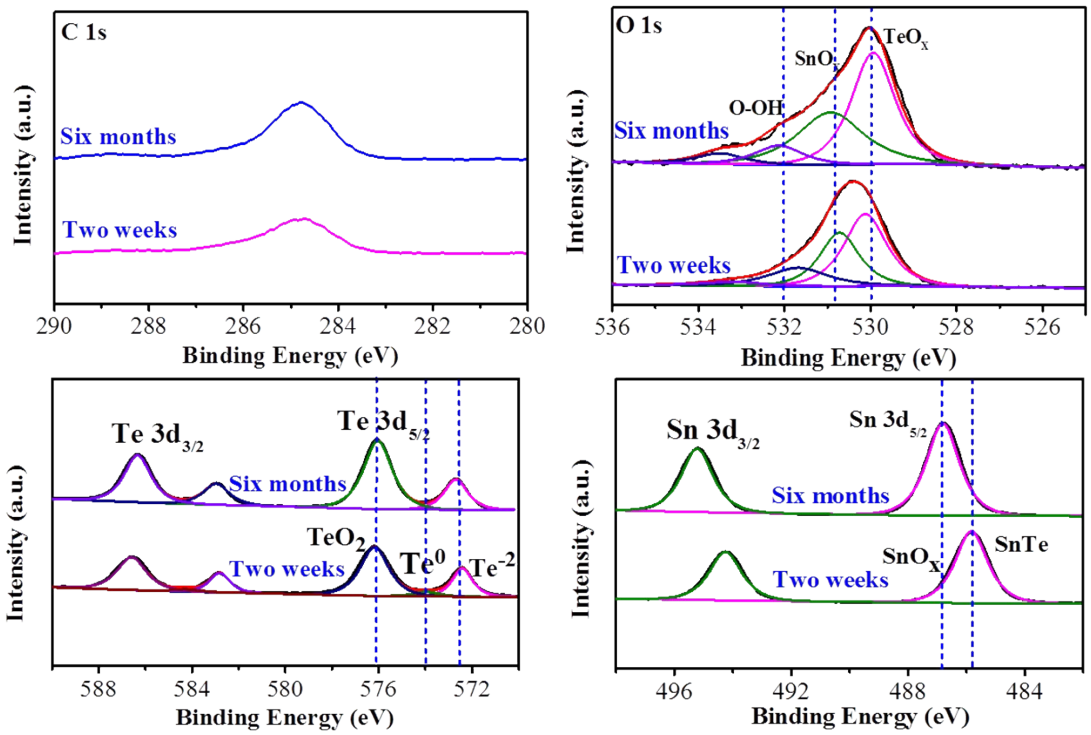

Figure S4. XPS spectra of a) C 1s, b) O 1s, c) Te $3d_{5/2}$, and d) Sn $3d_{5/2}$ core-level peaks for the SnTe surface exposed to air for two weeks and six months.

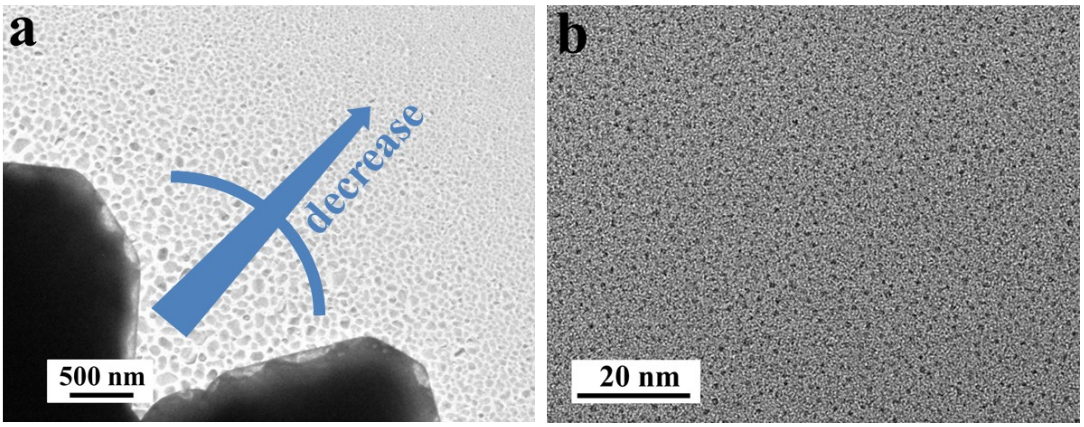

Figure S5. TEM images of a) the size distribution of the ejected SnTe nanocrystals around the parent body, b) a local area away from the parent body for about 10 μm.

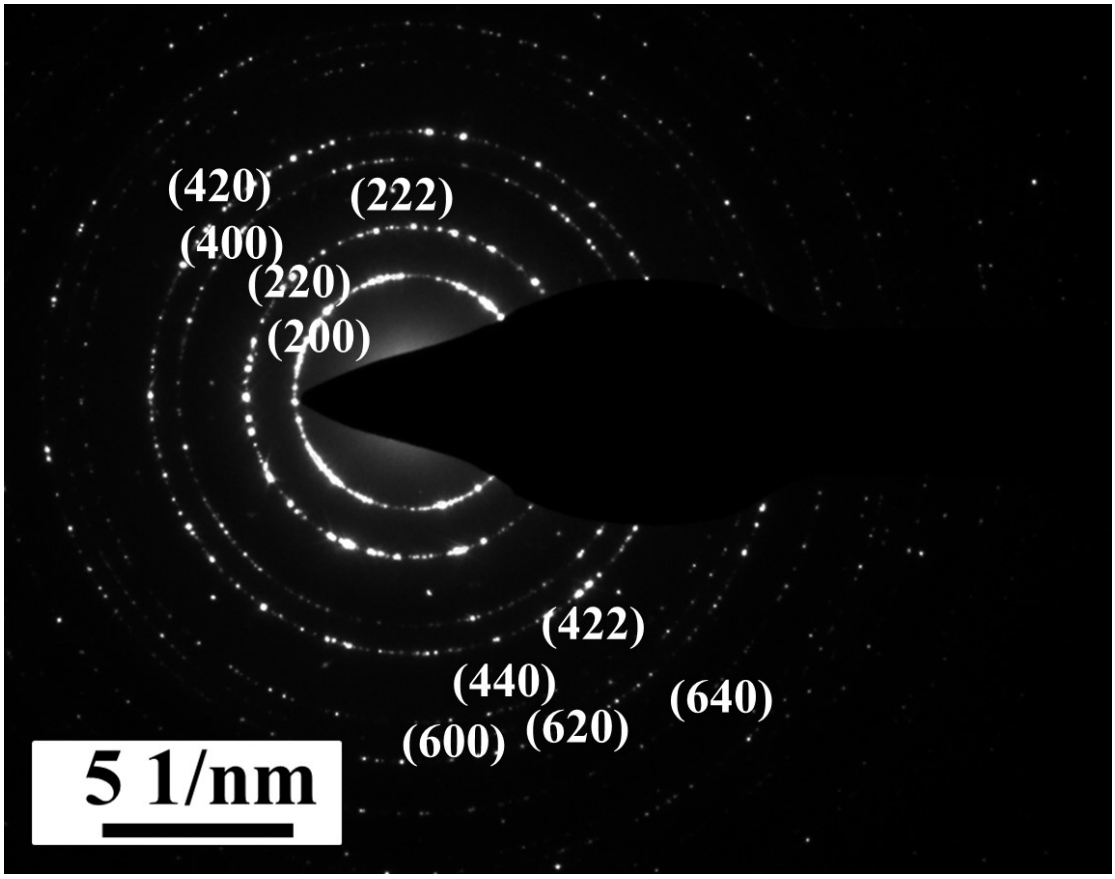

Figure S6. SAED pattern of the ejected SnTe nanocrystals

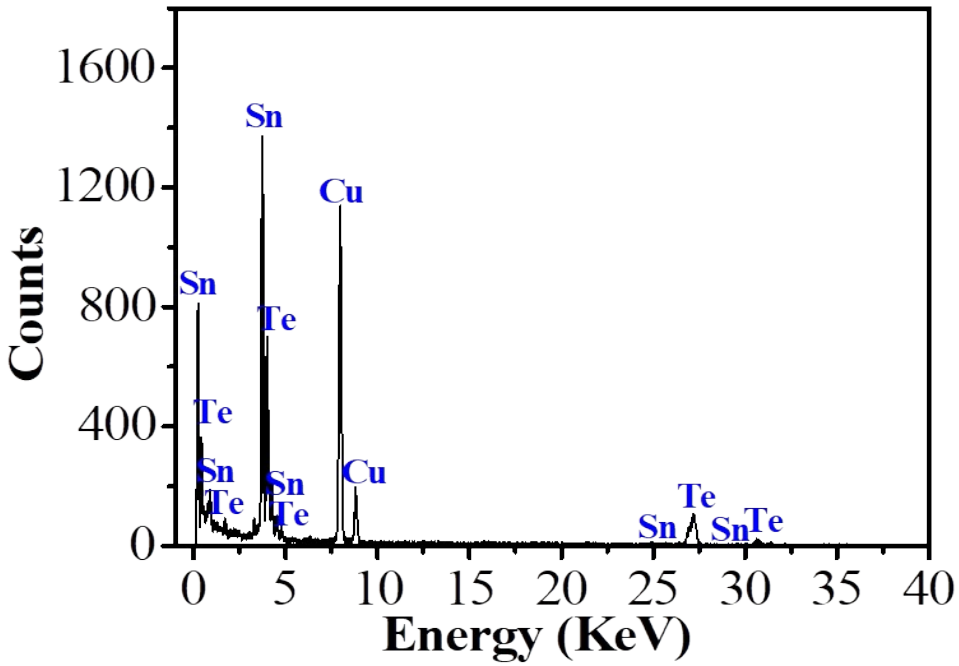

Figure S7. EDS of the ejected SnTe nanocrystals.

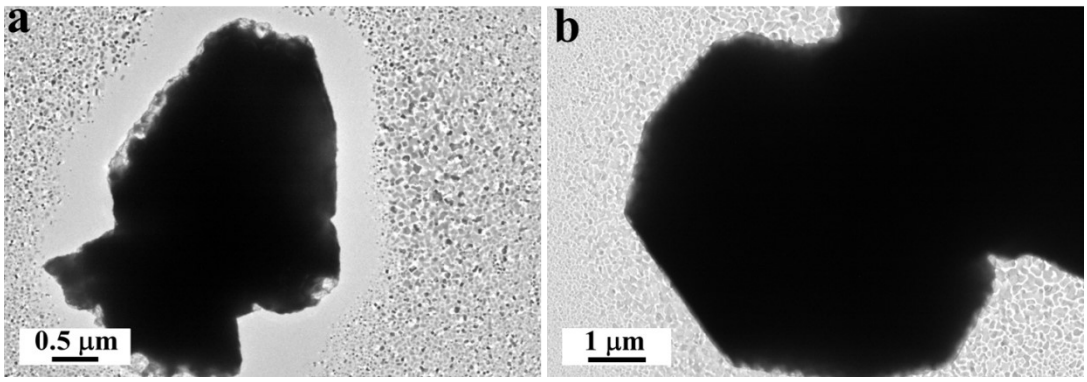

Figure S8. (a, b) TEM images of occurred Coulomb explosion process on the samples with different shapes.

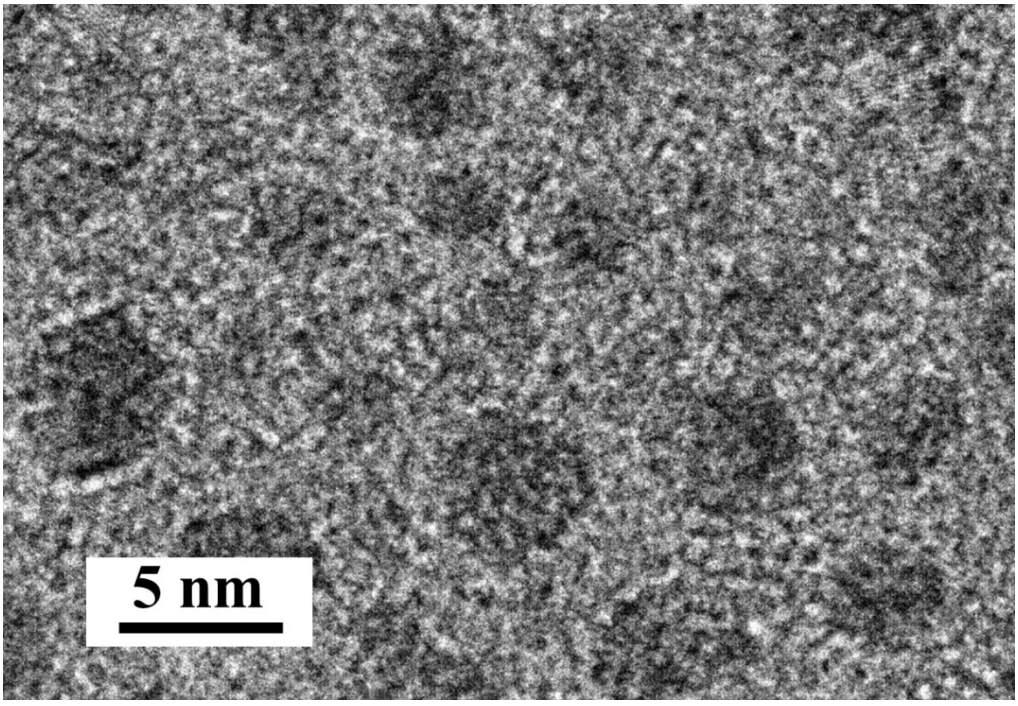

Figure S9. HRTEM images of the deposited nanoparticles in the initial 5 s of the Coulomb explosion process.

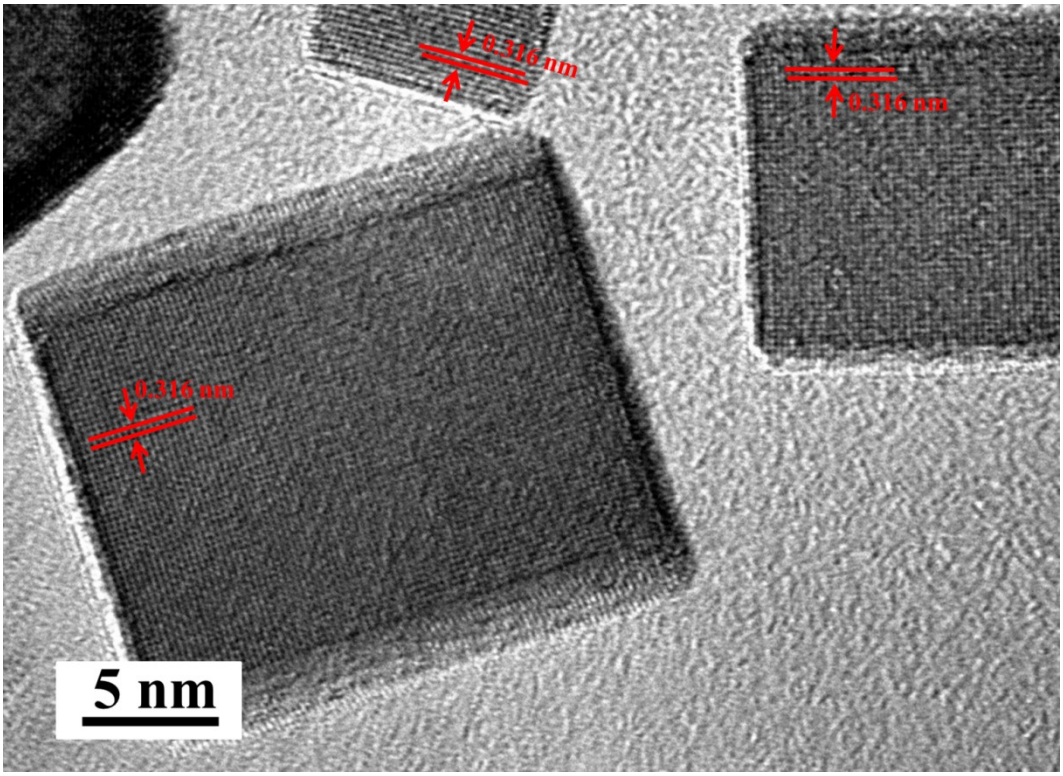

Figure S10. HRTEM images of several randomly selected rectangular nanoplates.

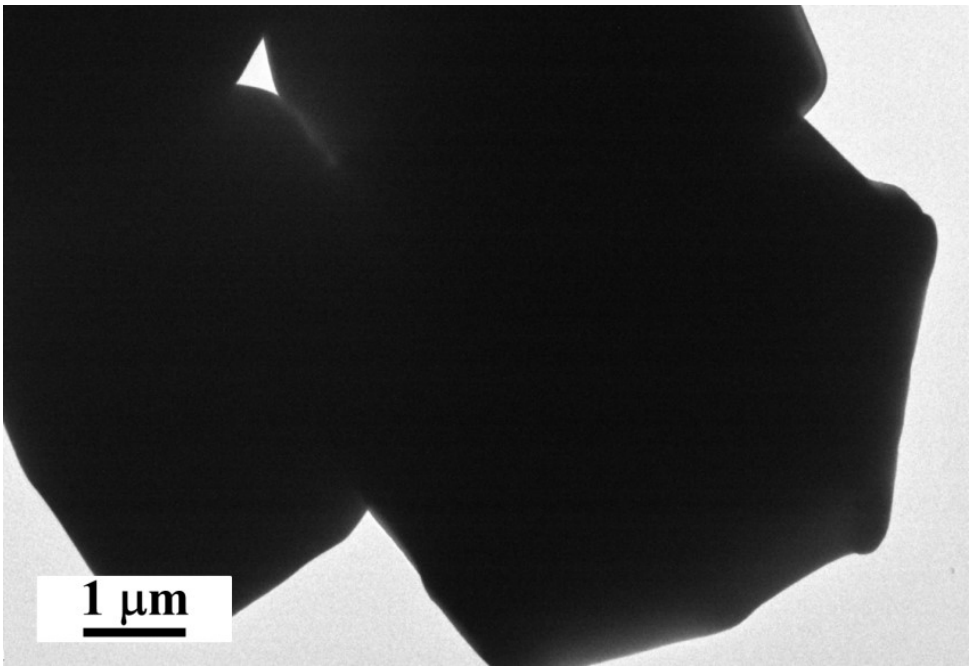

Figure S11. TEM image of the parent body for rapid coating film process.

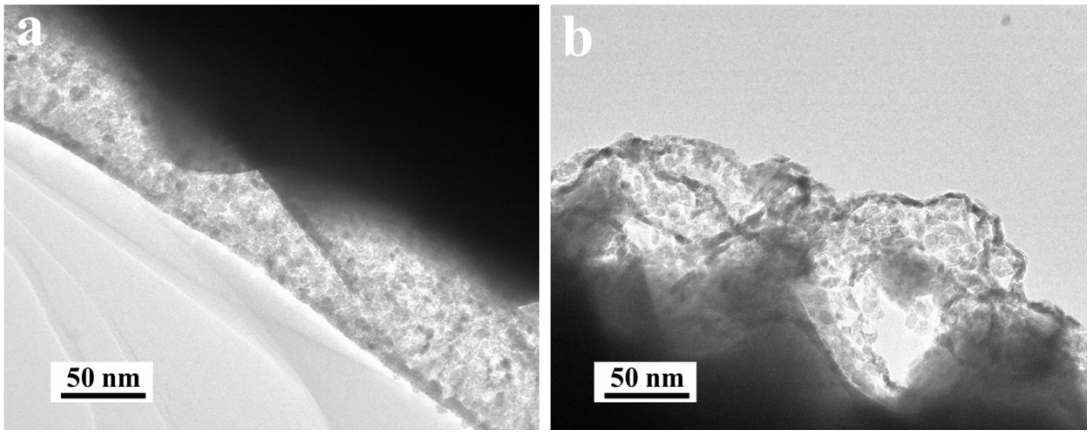

Figure S12. TEM images of the surface porosity of the samples ultrasonic-treated for a) 20 and b) 60 mins.

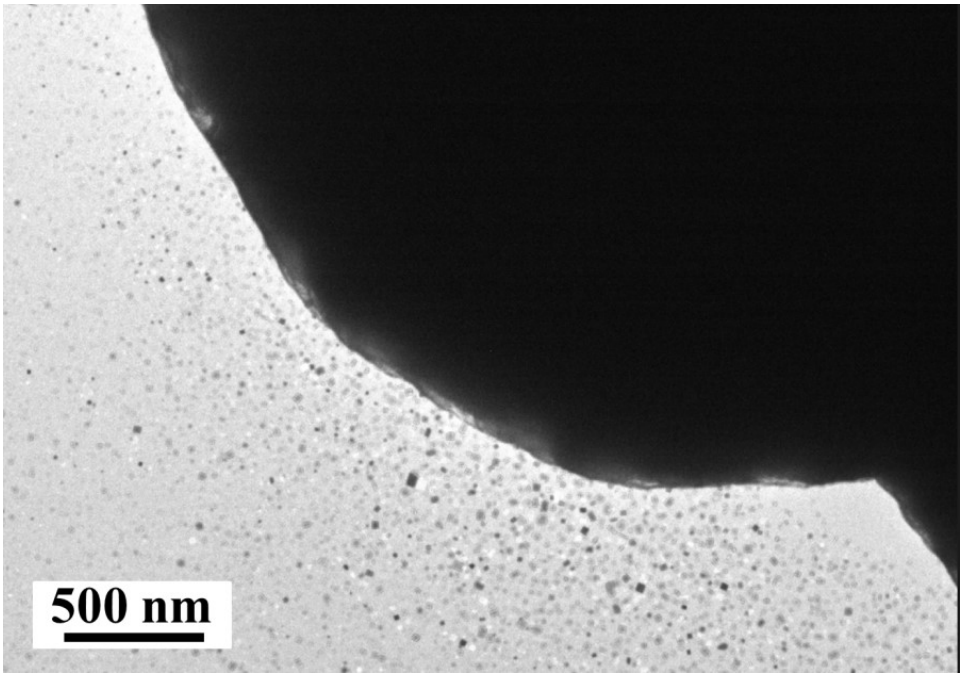

Figure S13. Selected sample for the observing of attachment and self-recrystallization of larger nanocrystals.

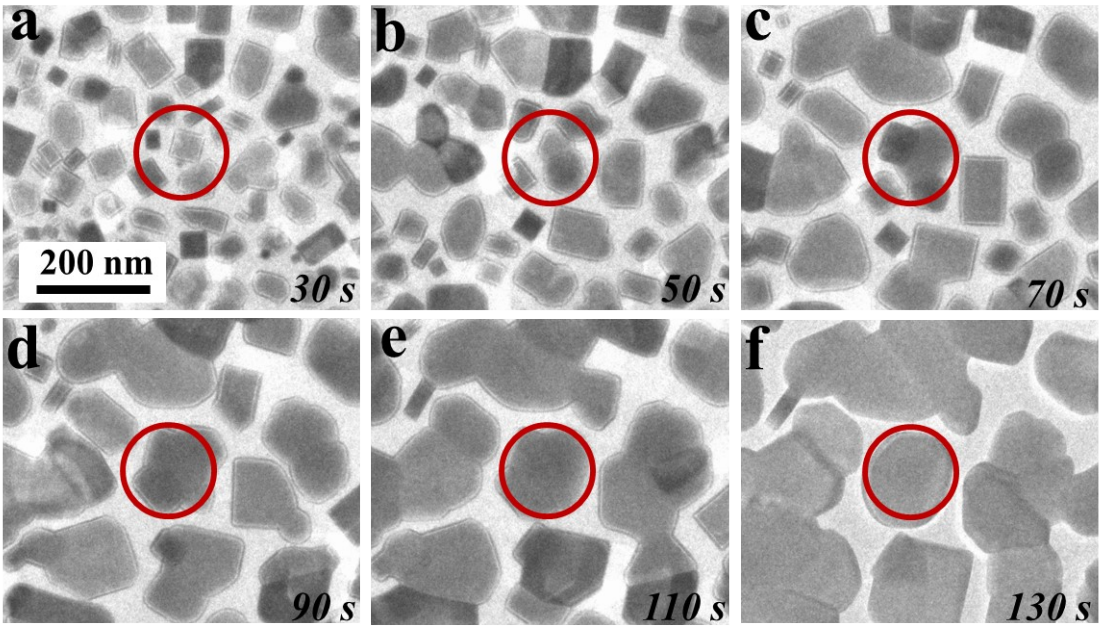

Figure S14. a-f) Other one set of time-dependent TEM images of the oriented attachment and self-recrystallization of SnTe nanocrystals.

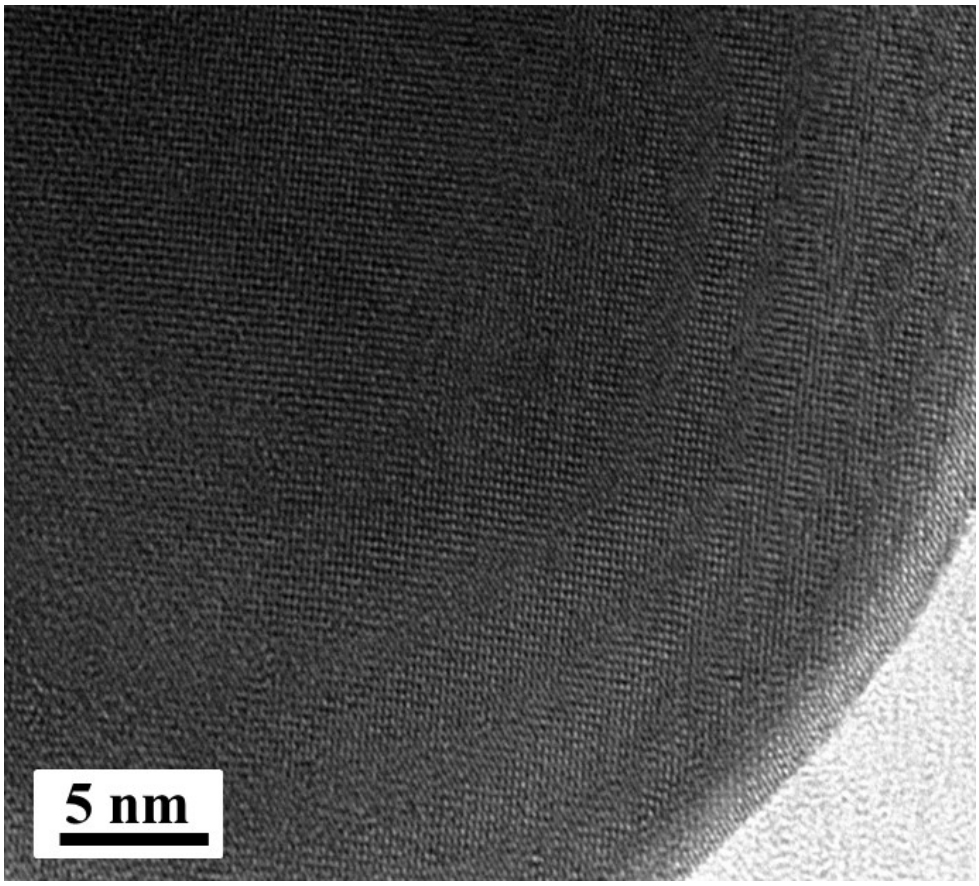

Figure S15. The corresponding HRTEM image of the SnTe single crystal coalesced in Figure S13f.

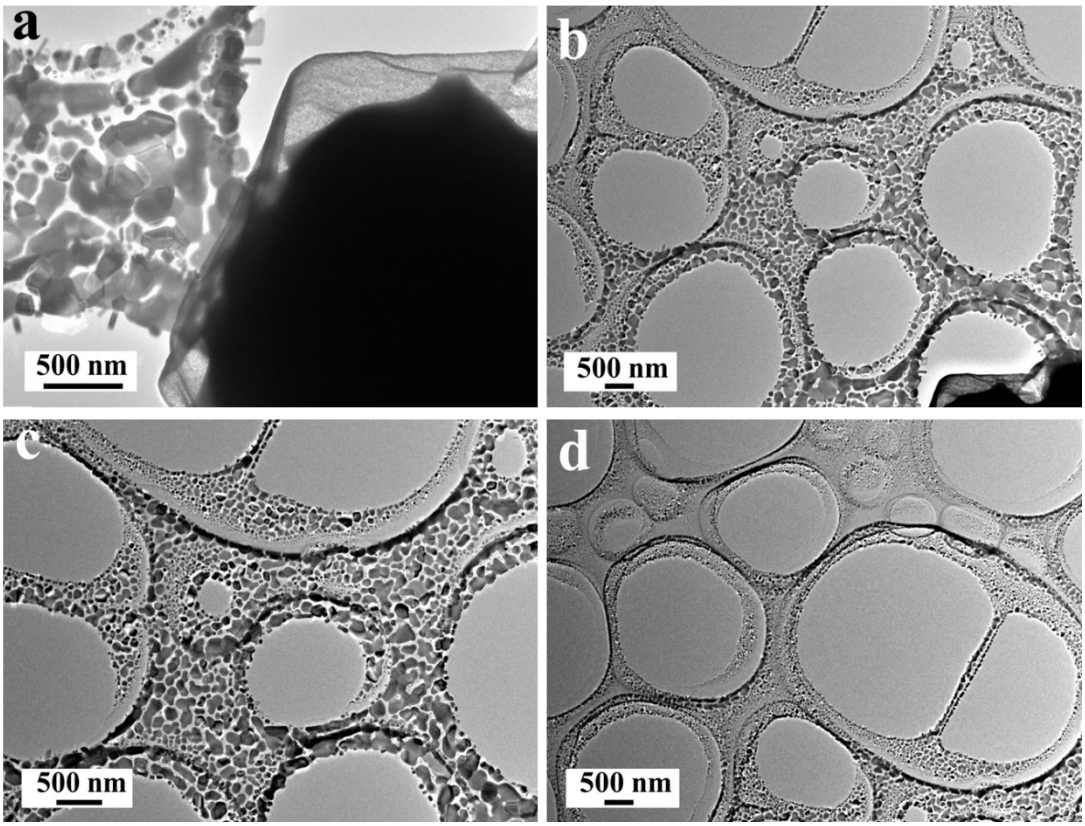

Figure S16. a-d) TEM images of the ejected SnTe nanocrystals distributing along the micrograte.