Supporting Information

Colloidal PbS Nanoplatelets Synthesized via Cation Exchange for Electronic Applications

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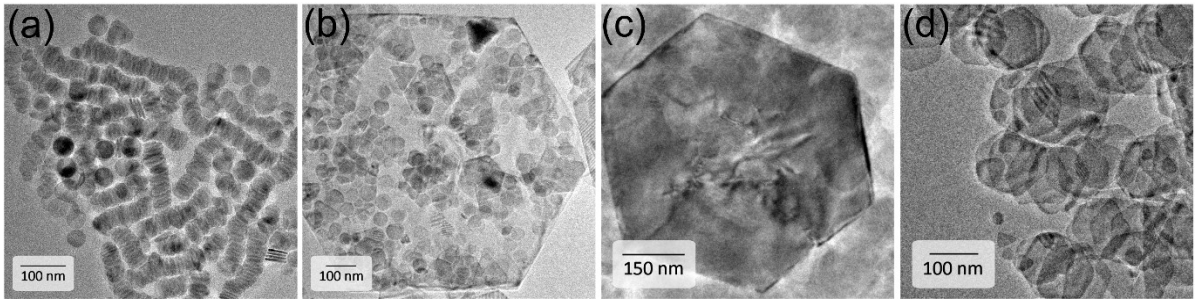

Figure SI1. TEM images of CuS NPLs and larger nanosheets obtained with a Cu:S mol. ratio of 1:8 (a, b) and 1:16 (c, d).

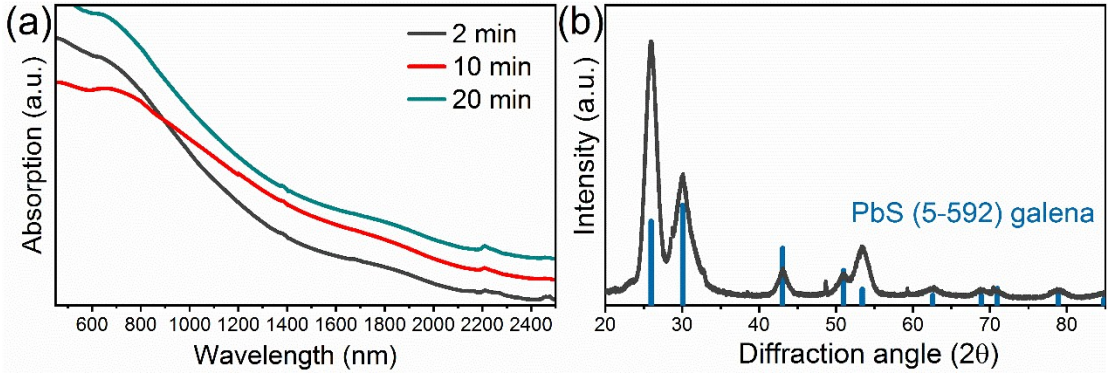

Figure SI2. Absorption spectra of the products of Cu^{+}-to-Pb^{2+} CE reaction sampled after 2, 10 and 20 minutes (a) along with XRD pattern of the 2 min sample (b).

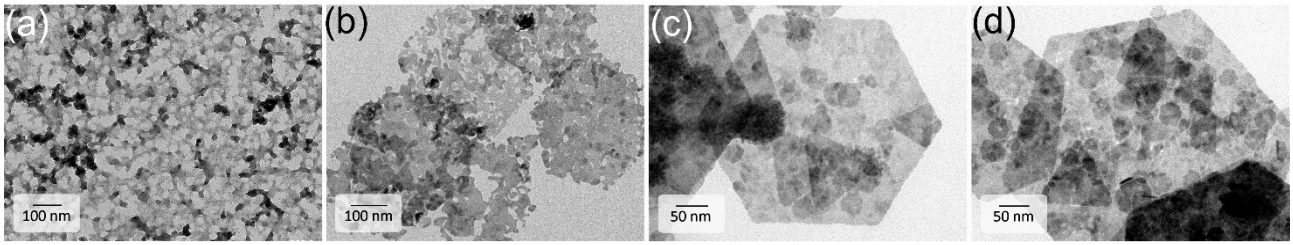

Figure SI3. TEM images of PbS NPLs and nanosheets after ligand exchange with NH_4I in MFA (a) and in DMF (b), with PbI_2 in DMF (c), and with LiI in DMF (d).

Table SI1. Ratio of Pb:Cu:S determined with ICP-OES after cation exchange from CuS to PbS and after ligand exchange with LiI or PbI_2.

PbS/OlAc			PbS/LiI				PbS/PbI_2		
Pb	Cu	S	Pb	Cu	Li	S	Pb	Cu	S
1	0.08	0.8	1	0.04	0.08	0.8	1	0.04	0.7

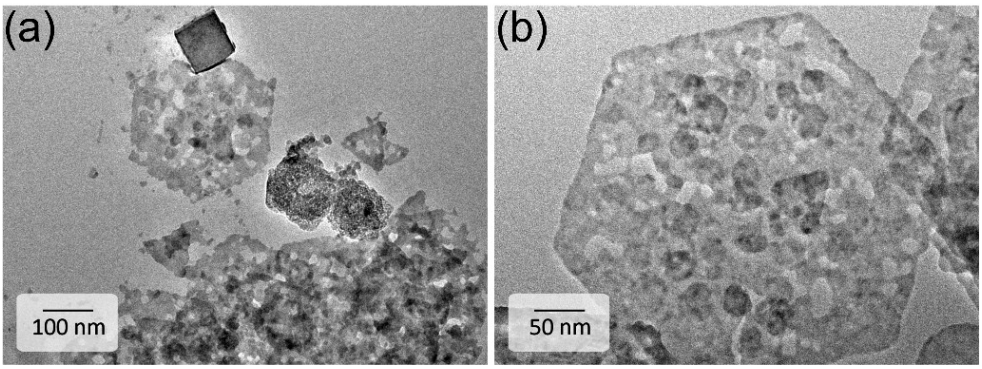

Figure SI4. TEM images of PbS NCs capped with LiI (a) and PbI_2 (b) stored in DMF.

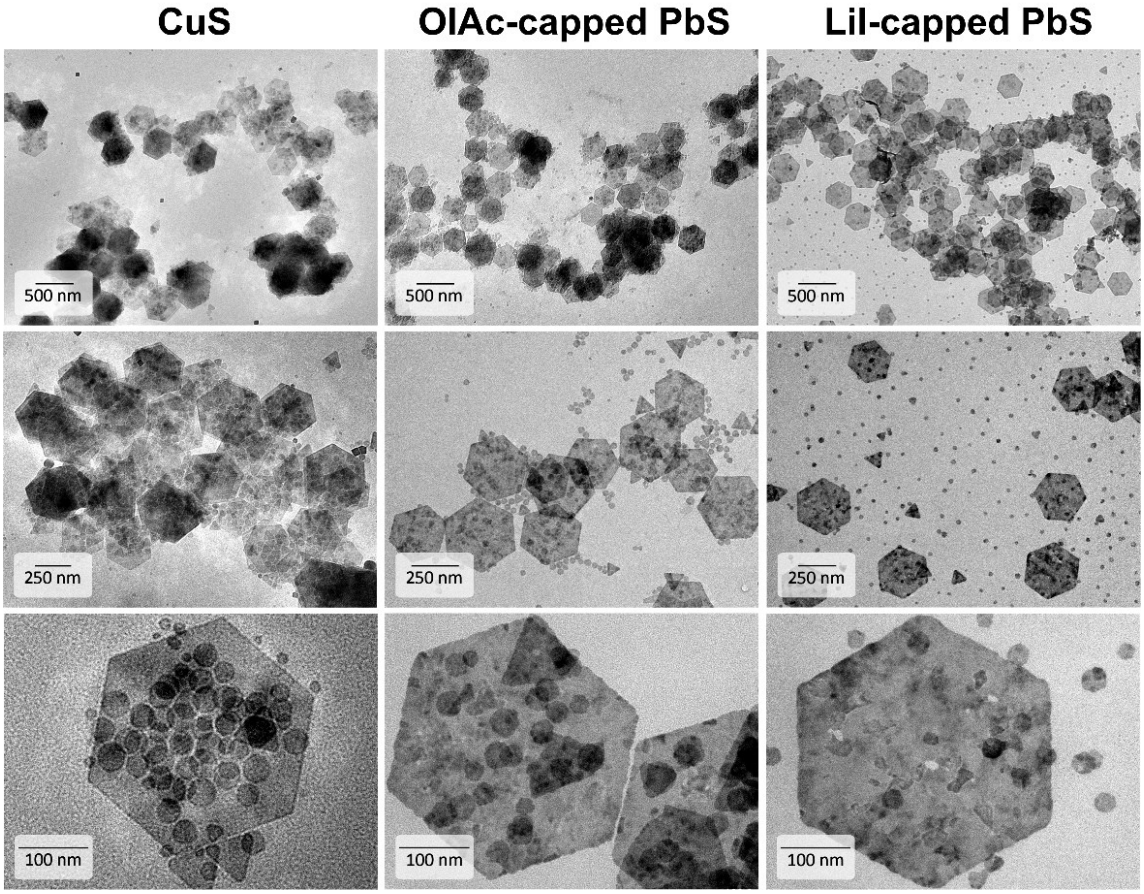

Figure SI5. TEM images of parental CuS, OlAc- and LiI-capped PbS NPLs acquired at different magnifications.

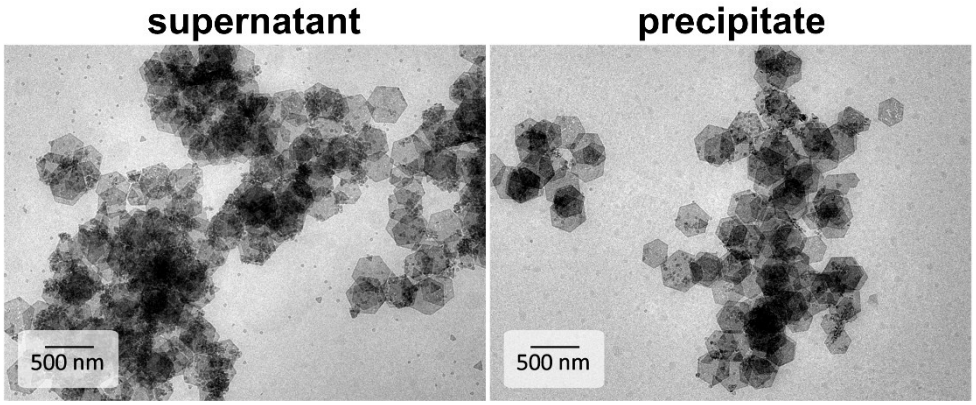

Figure SI6. TEM images of A) precipitate and B) supernatant of LiI-capped PbS NCs after centrifugation.

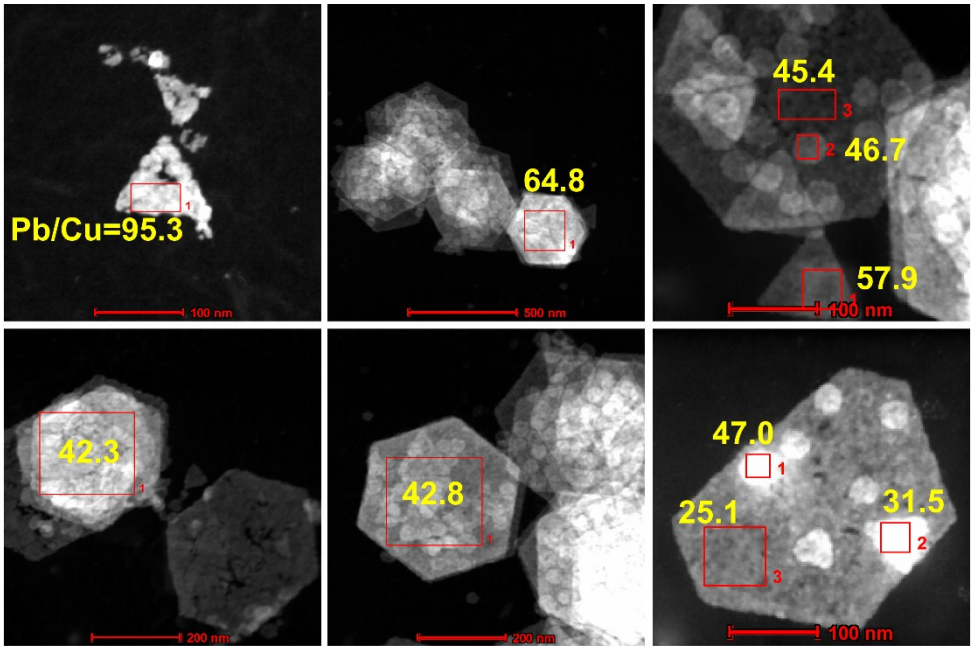

Figure SI7. Results of EDX characterization of individual NPLs as well as NPL ensembles revealing a random distribution of residual copper atoms all over the NPLs (the Pb:Cu ratio is shown in each image with a corresponding area on which the analysis was performed).