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 Cu²⁺-to-Pb²⁺ 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 NH₄I in MFA (a) and in DMF (b), with PbI₂ 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 PbI₂.

<table>
<thead>
<tr>
<th>PbS/OIAc</th>
<th>PbS/LiI</th>
<th>PbS/PbI₂</th>
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<tbody>
<tr>
<td>Pb</td>
<td>Cu</td>
<td>S</td>
</tr>
<tr>
<td>1</td>
<td>0.08</td>
<td>0.8</td>
</tr>
</tbody>
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Figure SI4. TEM images of PbS NCs capped with LiI (a) and PbI₂ (b) stored in DMF.

Figure SI5. TEM images of parental CuS, OIAc- 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).