

## Epitaxial growth and defect repair of heterostructured $\text{CuInSe}_x\text{S}_{2-x}/\text{CdSeS}/\text{CdS}$ quantum dots

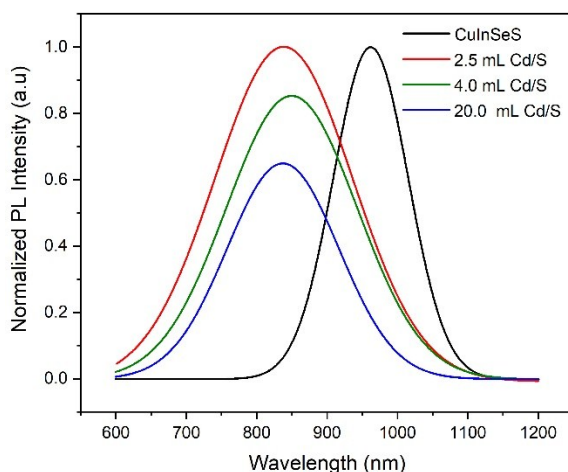
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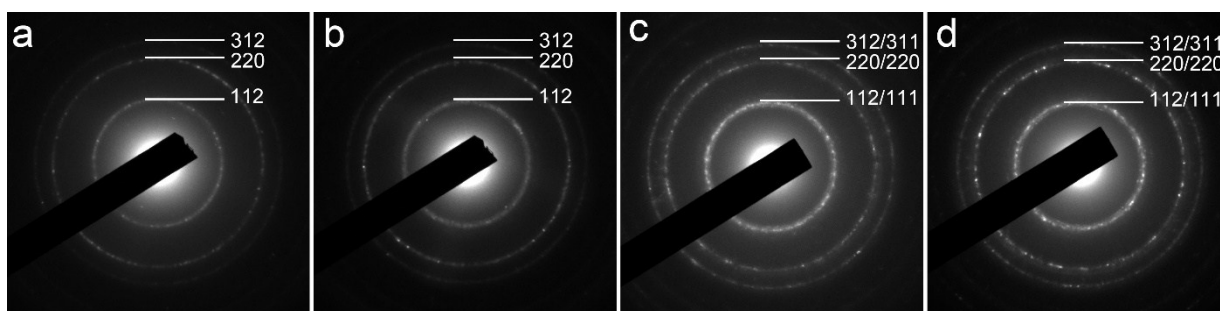
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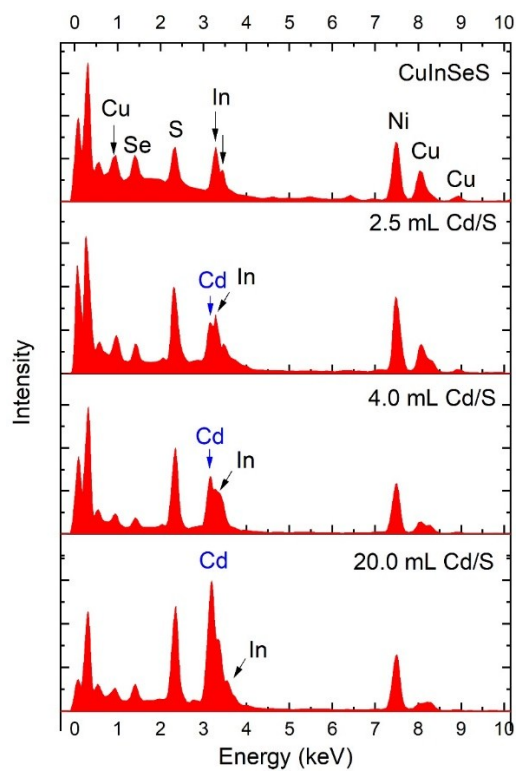
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**Figure S1.** PL spectra of heterostructured  $\text{CuInSeS}/\text{CdSeS}/\text{CdS}$  g-QDs at different growth stages.



**Figure S2.** SAED of heterostructured  $\text{CuInSeS}/\text{CdSeS}/\text{CdS}$  g-QDs at different growth stages. (a)  $\text{CuInSeS}$  QDs, (b) (c) and (d) is the products after injection  $\text{Cd/S}$  precursor of 2.5 mL, 4 mL, and 20 mL, respectively.



**Figure S3.** EDS spectra of heterostructured CuInSeS/CdSeS/CdS g-QDs at different growth stages.

**Table S1.** Atom concentration obtained from EDS analysis.

	<b>Cu</b> <b>(Atomic%)</b>	<b>In</b> <b>(Atomic%)</b>	<b>Se</b> <b>(Atomic%)</b>	<b>S</b> <b>(Atomic%)</b>	<b>Cd</b> <b>(Atomic%)</b>
<b>CuInSeS</b>	24±3	22±3	24±3	30±4	0
<b>2.5 mL Cd/S</b>	15±2	21±3	11±1	33±5	20±3
<b>4.0 mL Cd/S</b>	10±1	13±2	9±1	40±6	29±4
<b>20.0 mL Cd/S</b>	5±1	3±1	8±1	41±6	44±6