Supplementary Information

Rapid continuous aqueous production of copper indium sulfide quantum dots via microwave-assisted microfluidic technique

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Table S1. PL emission wavelengths of CIS QDs prepared with different ligands.

No.	Flow rate (mL h^{-1})	Temperature (°C)	[Cu]/[In] molar ratio	Ligand	Emission wavelength (nm)
1	30	95	1:16	GSH	720
2	30	95	1:16	LCy	Non-fluorescent
3	30	95	1:16	NAC	670

Table S2. PL emission wavelengths of CIS-NAC QDs prepared at different flow rates.

No.	Flow rate (mL h^{-1})	Temperature (°C)	[Cu]/[In] molar ratio	Ligand	Emission wavelength (nm)
1	20	95	1:16	NAC	662
2	25	95	1:16	NAC	663
3	30	95	1:16	NAC	670
4	35	95	1:16	NAC	650
5	40	95	1:16	NAC	655

Table S3. Experimental parameters and fluorescence performance of CIS QDs and CIS@ZnS QDs synthesized with different Cu/In ratios at 30 mL h^{-1}.

NO.	[Cu]/[In] ratio	CIS			CIS@ZnS		
		Peak emission wavelength (nm)	Fluorescence decay (ns)	PL QY(%)	Peak emission wavelength (nm)	Fluorescence decay (ns)	PL QY(%)
1	1:8	684	84.51	4.6	640	214.93	24.4
2	1:12	674	88.41	6.7	627	272.51	27.7
3	1:16	670	121.01	7.0	619	265.67	26.2
4	1:24	651	114.75	5.6	616	271.86	28.6
5	1:32	638	95.01	5.9	604	287.22	44.0
6	1:64	617	89.06	3.0	601	299.80	12.0

Table S4. Time-resolved decay lifetimes of CIS QDs and CIS@ZnS QDs prepared with a Cu/In ratio of 1:32.

Samples	B_1 (%)	τ_1 (ns)	B_2 (%)	τ_2 (ns)	$\bar{\tau}$ (ns)
CIS QDs	28.49	12.66	71.51	127.82	95.01
CIS@ZnS QDs	20.35	63.70	79.65	344.33	287.22

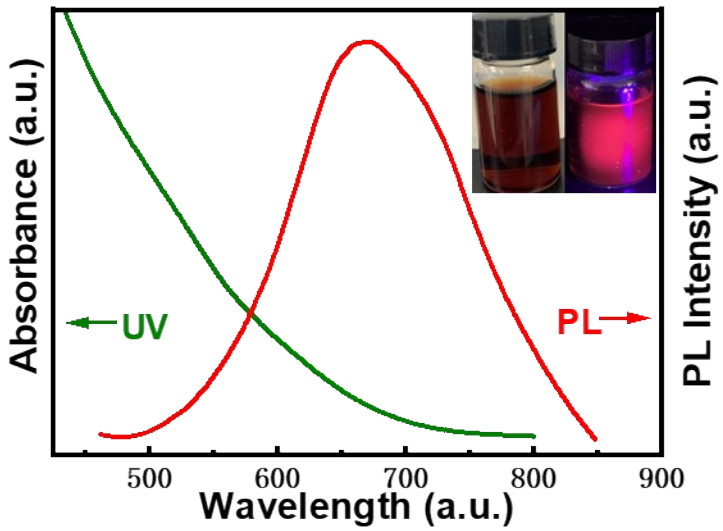

Fig. S1 Absorption and emission spectra of CIS QDs produced with a Cu/In ratio of 1:16 and a flow rate of 30 mL h^{-1}.