Supplementary Information

In Situ Precipitation of $Cs_3Cu_2I_5$ Nanocrystals in Inorganic Glass with Long-Term Water Stability for X-ray Imaging

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Table S1. Composition of $Cs_3Cu_2I_5$ NCs glass (mol.%) with varying SnO content.

Sample	SiO_2	B_2O_3	ZnO	CaO	MgO	Al_2O_3	Cs_2O	CuI	NaI	SnO
i	29	35	5	1	1	3	10	2	12	0
ii	29	35	5	1	1	3	10	2	12	1.94×10^{-4}
iii	29	35	5	1	1	3	10	2	12	2.92×10^{-4}
iv	29	35	5	1	1	3	10	2	12	5.84×10^{-4}
v	29	35	5	1	1	3	10	2	12	4.86×10^{-4}
vi	29	35	5	1	1	3	10	2	12	3.89×10^{-4}

*To accurately compare all glass compositions, the total molar content of the $Cs_3Cu_2I_5$ NCs glass composition was not set to 100%.

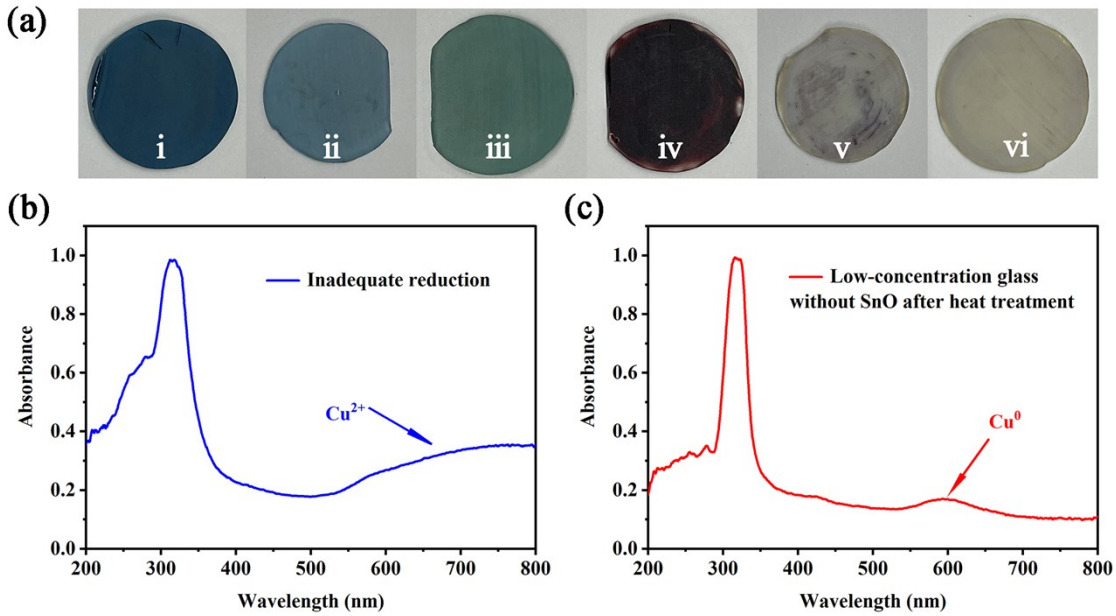

Figure S1. (a) Some sample photographs in the experimental optimization process. (b, c) Absorption spectrum of insufficiently reduced glass and low-concentration glass without SnO after heat treatment glass.

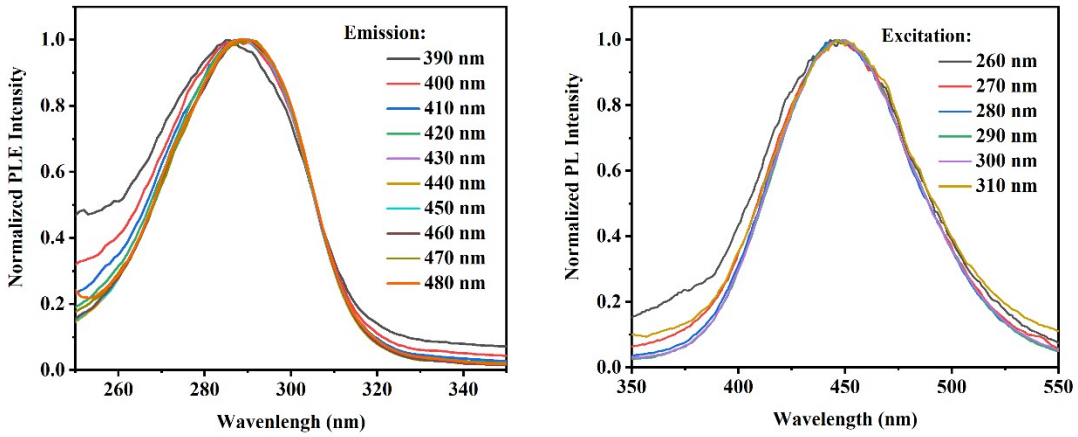

Figure S2. (a, b) PLE and PL spectra of $Cs_3Cu_2I_5$ glass measured at different emission and excitation wavelengths, respectively.

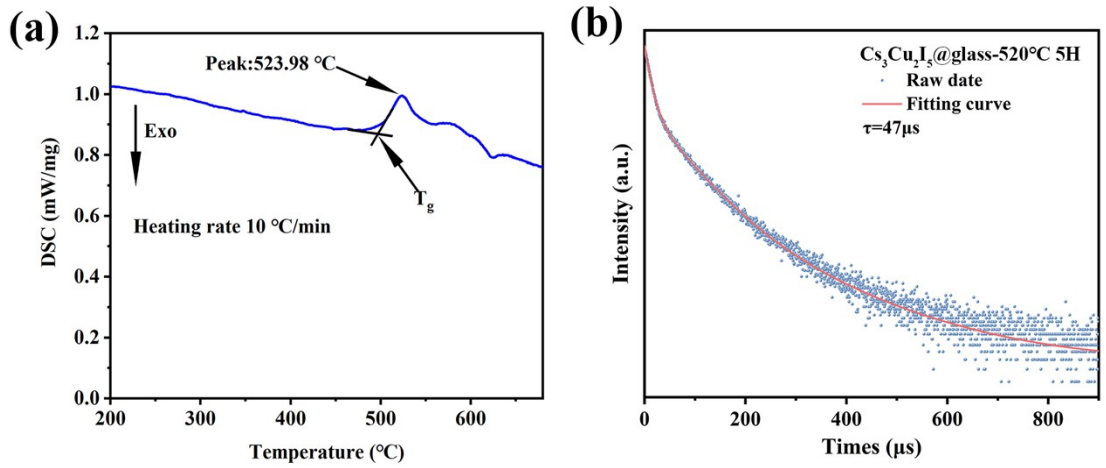

Figure S3. (a) DSC curves for $Cs_3Cu_2I_5$ glass. (b) Decay lifetimes of $Cs_3Cu_2I_5$ glass at 520 ℃.

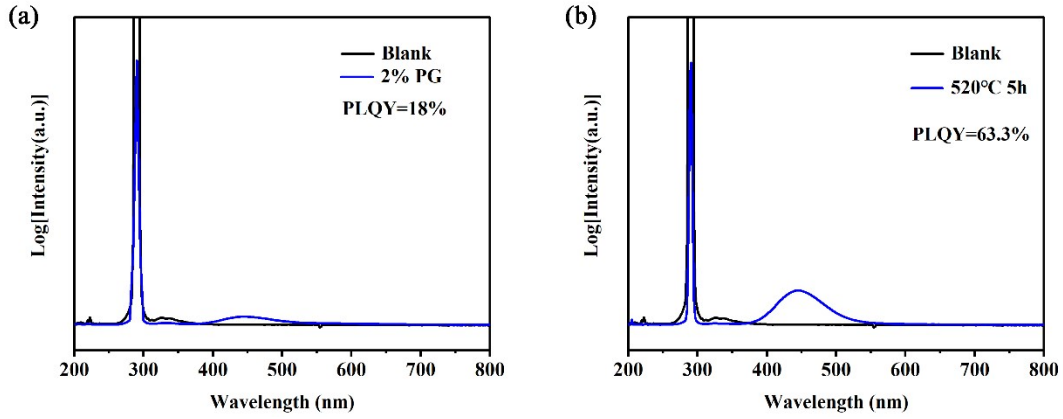

Figure S4. The PLQY spectrum of $Cs_3Cu_2I_5$ NCs glass.

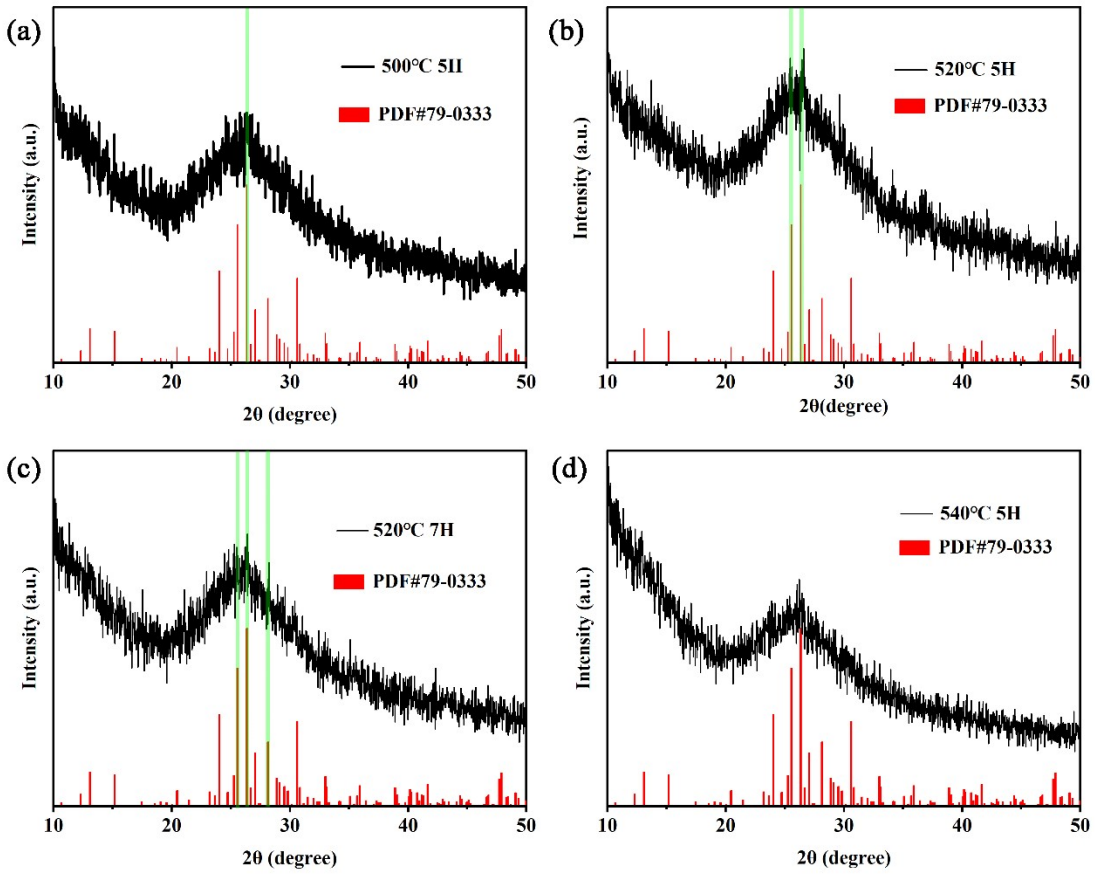

Figure S5. XRD patterns of the glass at different heat treatment temperature.

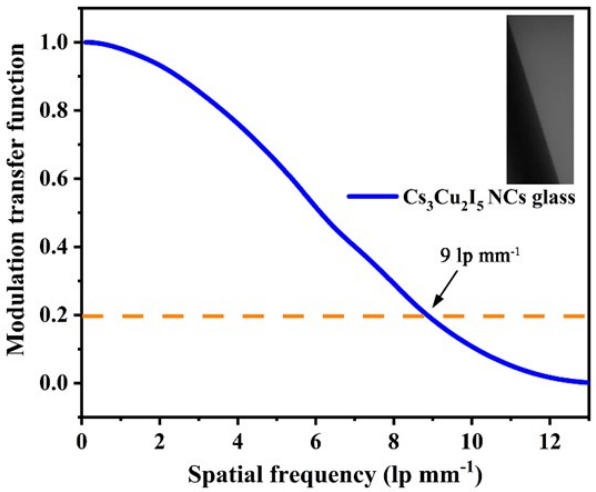

Figure S6. Modulation transfer functions (MTF) of X-ray images obtained from $Cs_3Cu_2I_5$ NCs glass.

Table S2. Compare the recently reported performance of $Cs_3Cu_2I_5$.

Materials	Emission peak (nm)	PLQY (%)	stability	Ref
$Cs_3Cu_2I_5$ single crystal	445	91.2	air-stability	(1)
$Cs_3Cu_2I_5$ Nanocrystals	441	67	air stability over 45 days	(2)
$Cs_3Cu_2I_5$ Nanocrystals	442	42	stability in air	(3)
$Cs_3Cu_2I_5$ Nanocrystals	445	29.2	air stability over 45 days	(4)
$Cs_3Cu_2I_5$ Nanocrystals	445	73.7	air stability over 30 days	(5)
$Cs_3Cu_2I_5$ Films	446	50	air stability over 50 days	(6)
$Cs_3Cu_2I_5$ Films	441	58		(7)
$Cs_3Cu_2I_5$ Nanocrystals	445	59	air stability over 90 days	(8)
$Cs_3Cu_2I_5$ Powder	445	49.2		(9)
$Cs_3Cu_2I_5$ Nanocrystals	443	30	air stability over 16 days	(10)
$Cs_3Cu_2I_5$ Films	445	76	air stability over 150 days	(11)
$Cs_3Cu_2I_5$ Powder	445	80	air stability over 30	(12)

			days	
$Cs_3Cu_2I_5$ Nanocrystals	445	87	air stability over 35 days	(13)
$Cs_3Cu_2I_5$ Powder	445	89	air stability over 46 days	(14)
$Cs_3Cu_2I_5$ Nanocrystal glass	446	63.3	water stability over 30 days	This work

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