Supporting Information of

Complete Inorganic Color Converter Based on Quantum-Dot-Embedded Silicate Glasses for Color-Tunable White-Light-Emitting Diodes

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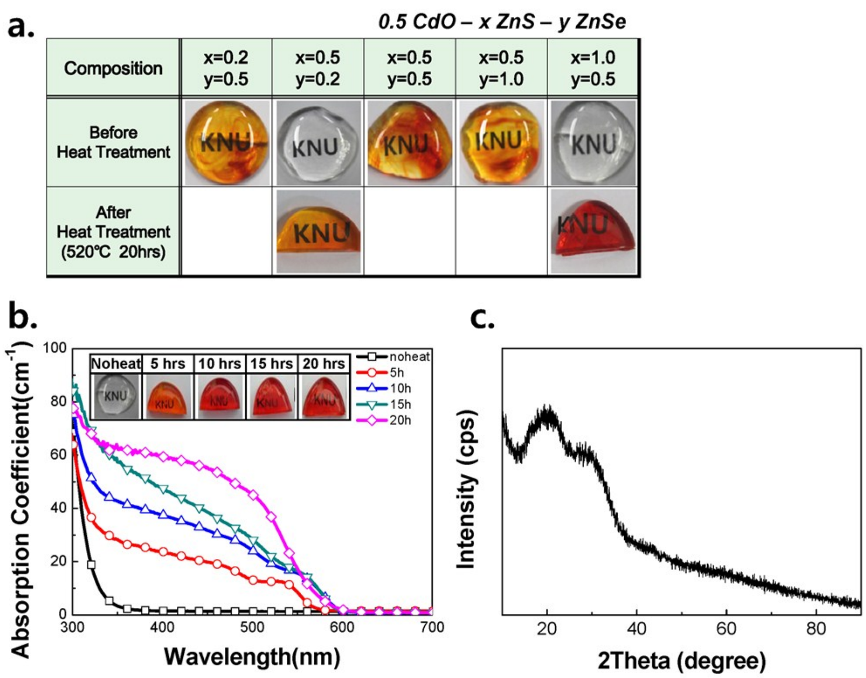

Figure S1. a. Compositional dependency of silicate glasses before and after HT at 520°C for 20 h for various ZnS (x) and ZnSe (y) contents with CdO content fixed at 0.5 mol%. **b**. Absorption spectra of silicate glasses with 0.5 CdO–1.0 ZnS–0.5 ZnSe (mol%) for HT times of 5, 10, 15, and 20 h at 520°C. The glasses after HT are shown in the inset. **c**. XRD result of the silicate glass containing 0.5 CdO–1.0 ZnS–0.5 ZnSe (mol%) after HT at 520°C for 20 h.

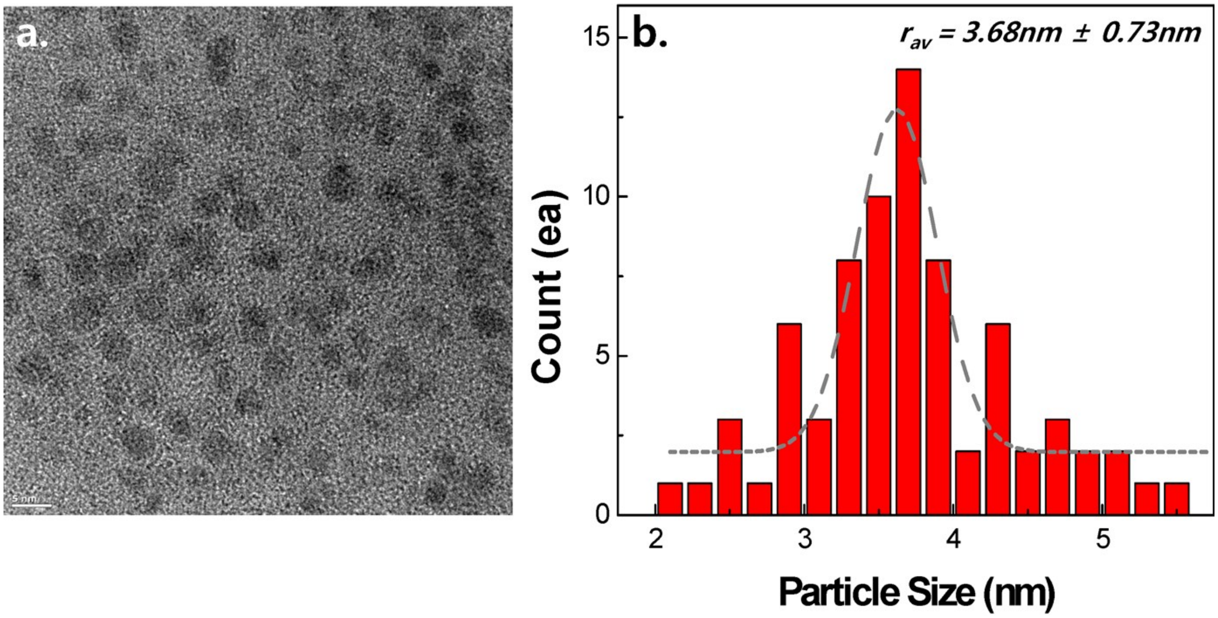

Figure S2. a. TEM image of the glass containing 0.5 CdO–1.0 ZnS–0.5 ZnSe (mol%) after HT at 520°C for 20 h. **b.** Size distribution of QDs within the figure, which indicates a mean QD diameter of 3.68 ±0.73 nm.

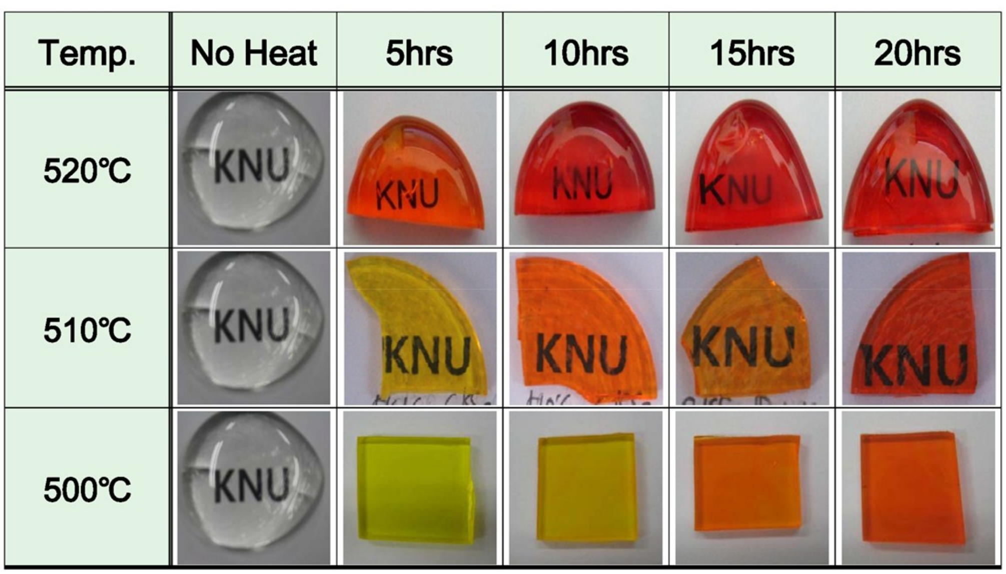

Figure S3. Dependency of silicate glasses containing 0.5 CdO–1.0 ZnS–0.5 ZnSe (in mol%) on the HT temperature and duration.

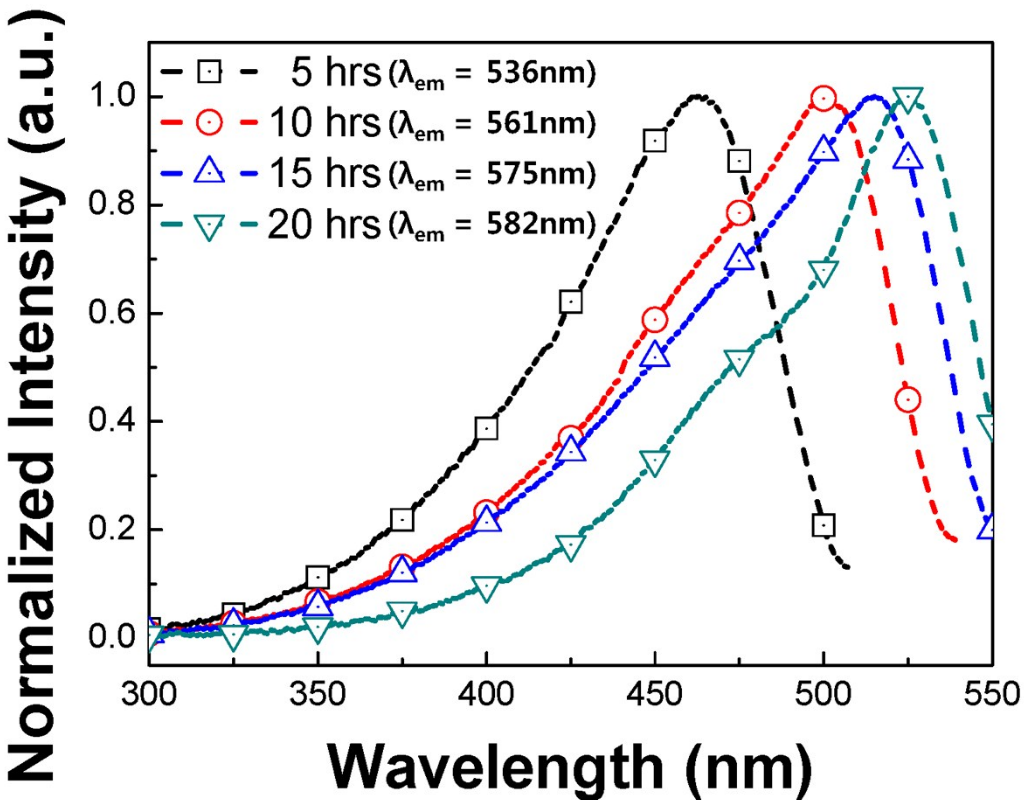

Figure S4. PLE spectra of mCdSe QDEGs which heat treated at 500 ^{o}C varying duration time. PL was monitored at their peak emission wavelengths as indicated in the figure.

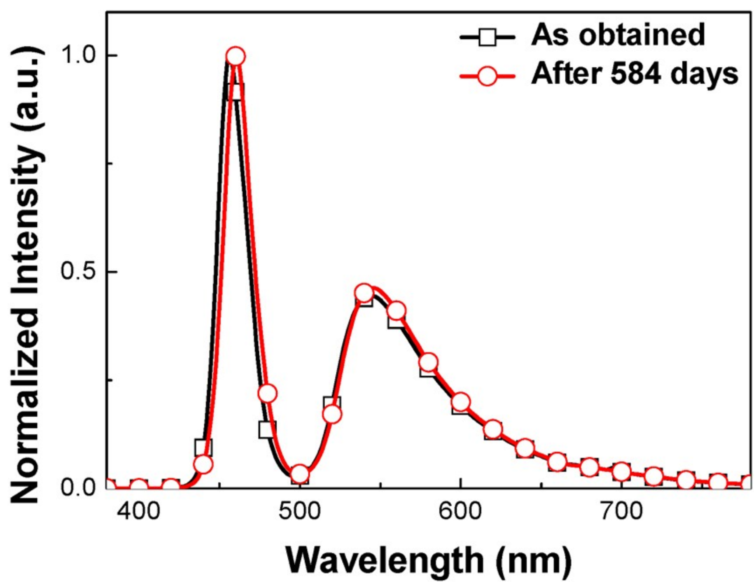

Figure S5. Normalized EL with PL spectra of LED with QDEG, which were measured as obtained and after 584 days under ambient condition, respectively. The spectra were normalized to the peak intensity of a blue LED (~455 nm) to compare the color-converted spectra of the QDEGs.

Table S1. CIE color coordinates, CCT, CRI, and QY of mCdSe QDEGs heat-treated at 500°C for various durations with various thicknesses.

HT time [hours]	Thickness [mm]	Color coordinates	CCT [K]	CRI	QY [%]
10	1.2	(0.3277, 0.3458)	5497	90	14
20	0.8	(0.3288, 0.3575)	5410	90	20

Table S2. Lattice parameters of CdSe, CdS, and $CdS_{1-x}Se_x$ crystal structures. The lattice parameters that were well fitted to the observed results are underlined.

Crystal	**CdSe (Hex.)**				**CdS (Hex.)**				**$CdS_{0.75}Se_{0.25}$ (Hex.)**				**$CdS_{0.33}Se_{0.67}$ (Hex.)**			
JCPDS #	***77-2307***				***77-2306***				***49-1459***				***50-0721***			
	d(A)	h	k	l	d(A)	h	k	l	d(A)	h	k	l	d(A)	h	k	l
	3.7230	1	0	0	3.5818	1	0	0	3.6067	1	0	0	3.6750	1	0	0
	3.5050	0	0	2	3.3565	0	0	2	3.3890	0	0	2	3.4510	0	0	2
	3.2880	1	0	1	3.1601	1	0	1	3.1850	1	0	1	3.2370	1	0	1
	2.5520	1	0	2	2.4492	1	0	2	2.4700	1	0	2	2.5020	1	0	2
	2.1495	1	1	0	2.0680	1	1	0	2.0880	1	1	0	2.1020	1	1	0
	1.9791	1	0	3	1.8977	1	0	3	1.9210	1	0	3	1.9310	1	0	3
	1.8615	2	0	0	1.7909	2	0	0	1.8096	2	0	0	1.8215	2	0	0
	1.8323	1	1	2	1.7606	1	1	2	1.7800	1	1	2	1.7960	1	1	2
	1.7991	2	0	1	1.7304	2	0	1	1.7513	2	0	1	1.7630	2	0	1
	1.7525	0	0	4	1.6782	0	0	4								