Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

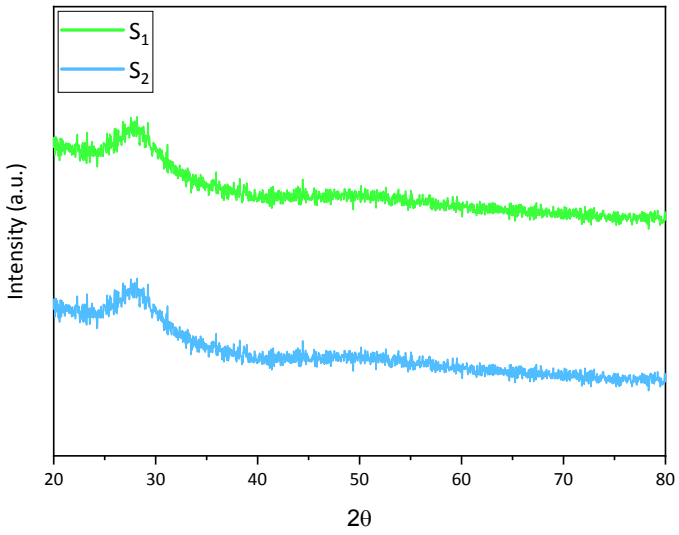

Fig. S1 XRD patterns of S_1 and S_2 samples

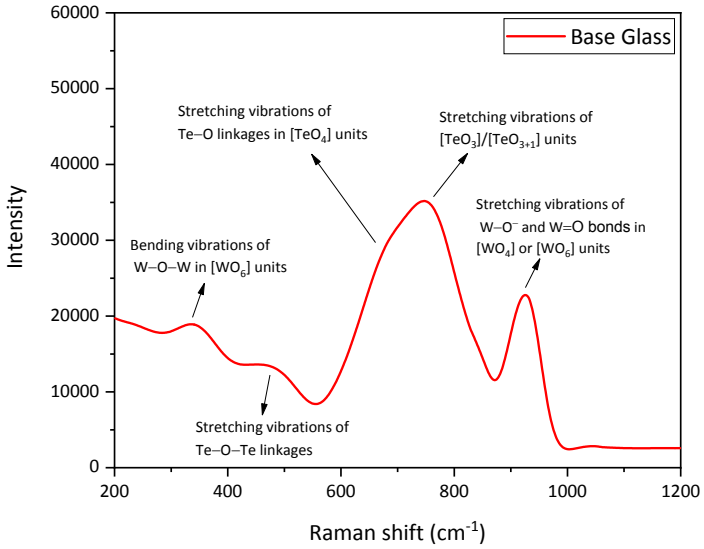

Fig. S2 Raman spectrum of $50TeO_2$-$25WO_3$-$25Li_2O$ base glass

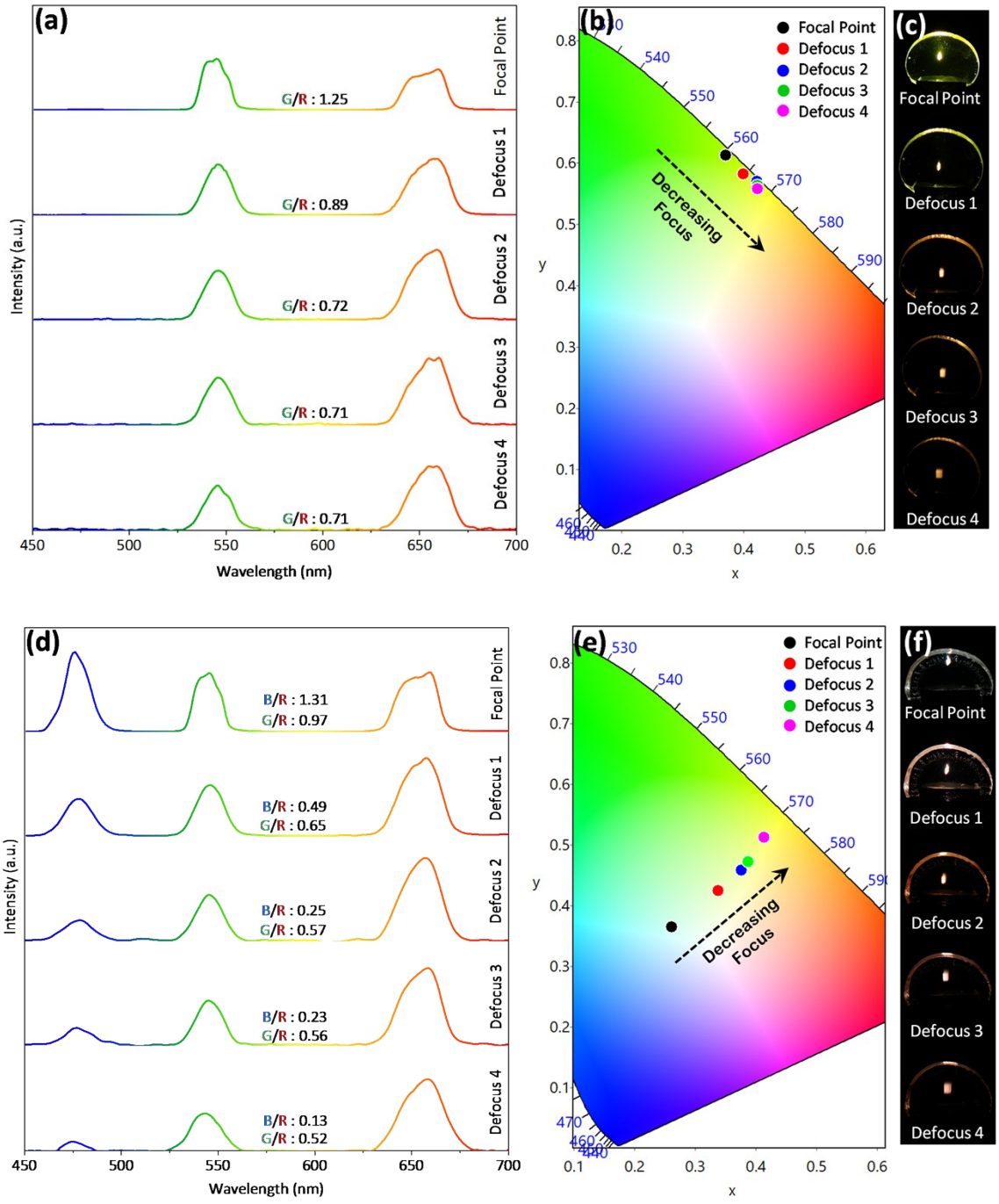

Fig. S3 (a) and (d) PL emission spectra, (b) and (e) color coordinates, (c) and (f) digital images for corresponding positions of the laser beam for bulk S_1 and S_2 samples, respectively

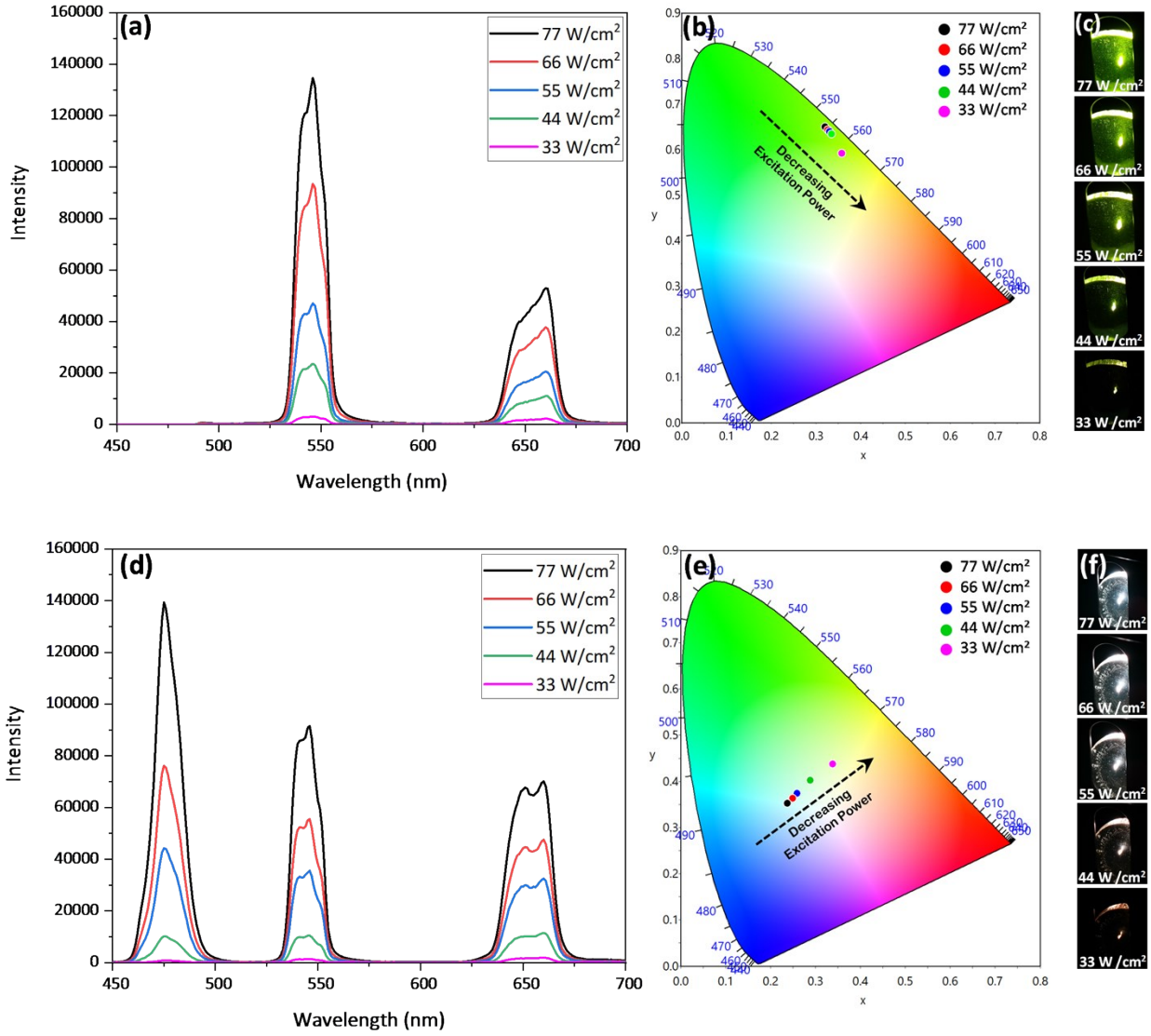

Fig. S4 (a) and (d) PL emission spectra, (b) and (e) CIE color coordinates, (c) and (f) digital images of glass samples for related excitation power densities for bulk S_1 and S_2 samples, respectively

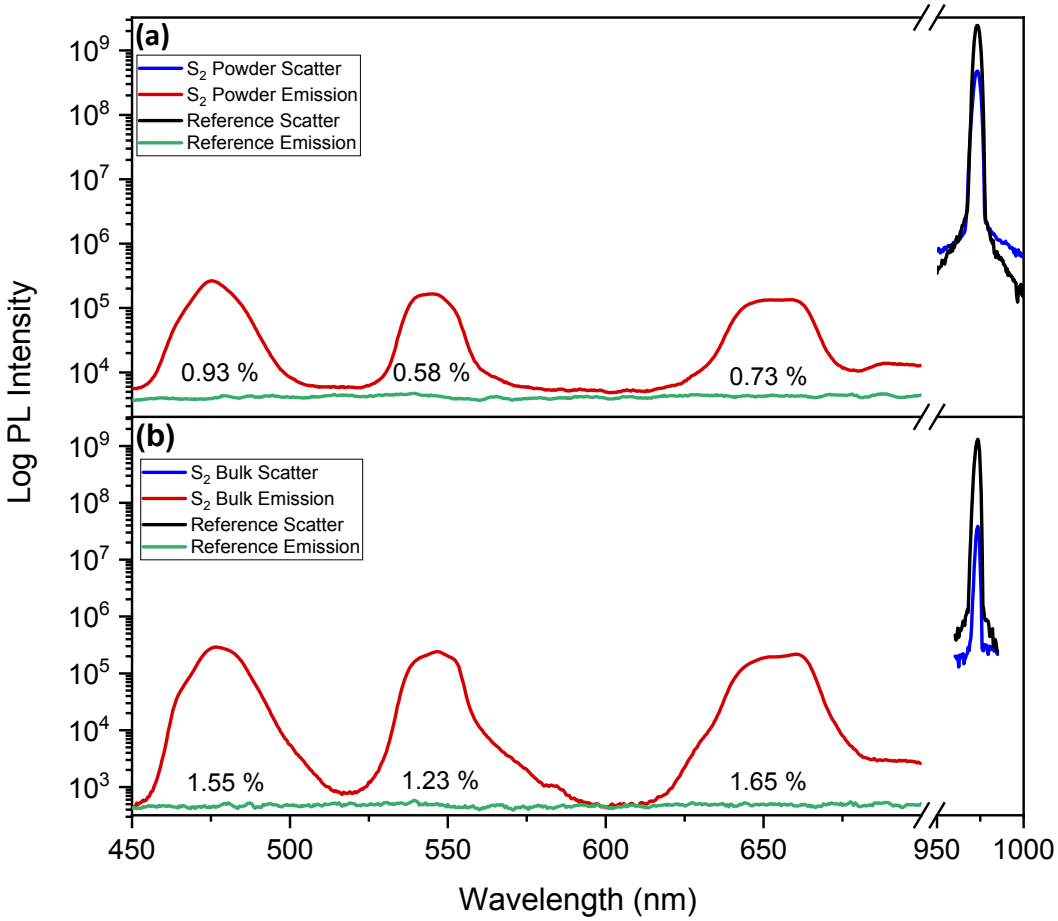

Fig. S5 PL spectra and calculated UCQY values of (a) powder, (b) bulk forms of S_2 sample recorded at 77W/cm^2 power density

Table S1 Chemical compositions of S_1 and S_2 samples

Sample	TeO_2	WO_3	Li_2O*	Yb_2O_3	Ho_2O_3	Tm_2O_3
Batch Composition (mol %)						
S_1	50	25	25	2	0.05	
S_2	50	25	25	2	0.05	0.05
Batch Composition (wt %)						
S_1	50.915	37.004	4.730	7.327	0.25	
S_2	50.906	36.997	4.729	7.325	0.25	0.18
Final Composition (wt %)						
S_1	50.09	37.36	4.73	7.82	-	
S_2	50.03	37.48	4.73	7.76	-	-

*: As Li could not be detected by XRF analysis, the final composition of Li_2O in S_1 and S_2 samples are considered the same as the starting composition.

-: Ho_2O_3 and Tm_2O_3 could not be detected due to their smaller quantities.

Table S2 Calculated UCQY values (%) of powder and bulk forms of S_1 and S_2 samples under 77W/cm^2 power density for different wavelengths

Sample	475 nm		545 nm		659 nm	
	Powder	**Bulk**	**Powder**	**Bulk**	**Powder**	**Bulk**
S_1	-	-	1.92	2.33	1.73	2.23
S_2	0.93	1.55	0.58	1.23	0.73	1.65

-: Not available