# Supporting Information

## Highly luminescent and ultrastable cesium lead bromide perovskite patterns generated into phosphate glass matrices

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**SI Figures**

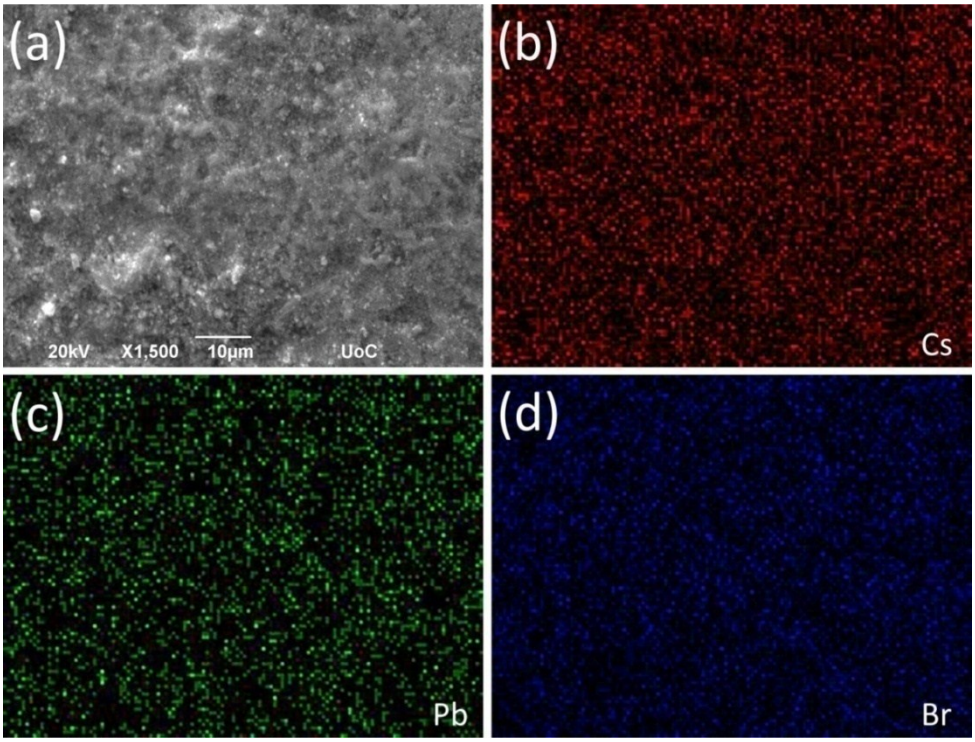


**Fig. S1: (a)** Representative SEM image of the surface of PvG-L glass, and corresponding EDS elemental mapping analysis for Cs **(b)**, Pb **(c)**, and Br **(d)**.

The elemental mapping analysis reveals a homogeneous distribution of the perovskite elements across the depicted area. The ratio of Cs:Pb:Br is found 3.6:1:5.6, i.e. close to $Cs_4PbBr_6$ stoichiometry.

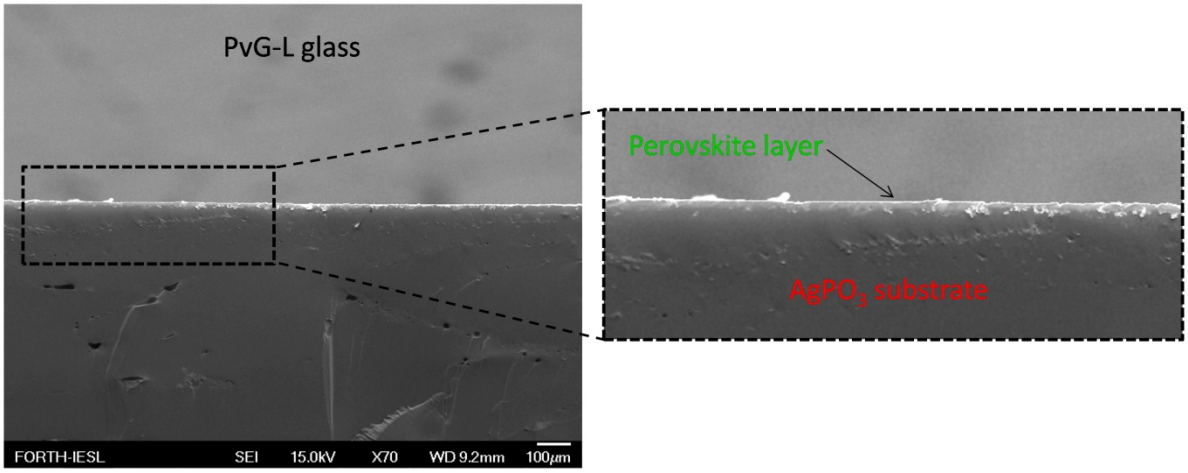


**Fig. S2:** Indicative cross-section SEM photos of PvG-L sample.

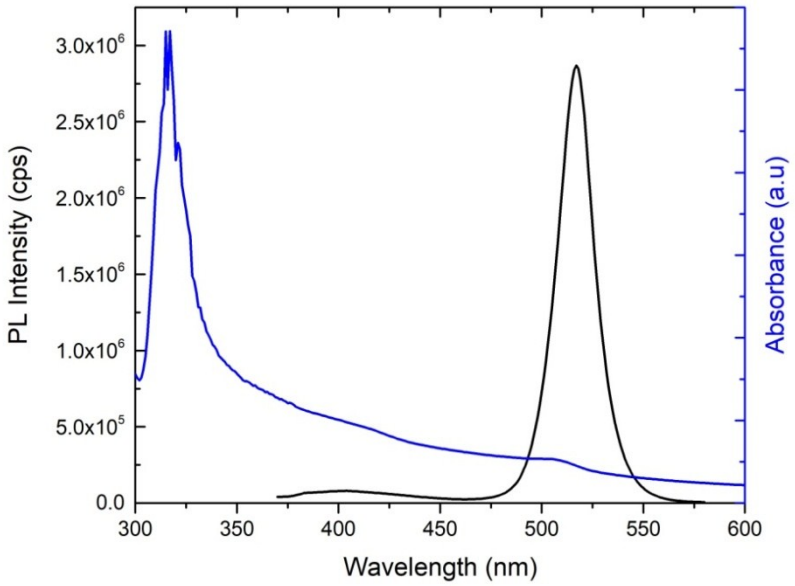


**Fig. S3:** Photoluminescence (black line) and optical absorbance (blue line) of the as prepared perovskite nanocrystals dispersion.

The PL peak at 517 nm corresponds to the $CsPbBr_3$ orthorhombic phase. The dispersion exhibits two absorbing features, one from 300 to 350 nm that is attributed to the $Cs_4PbBr_6$ rhombohedral phase, and a weaker absorption profile at the vicinity of 505 nm that is due to the $CsPbBr_3$ orthorhombic phase.

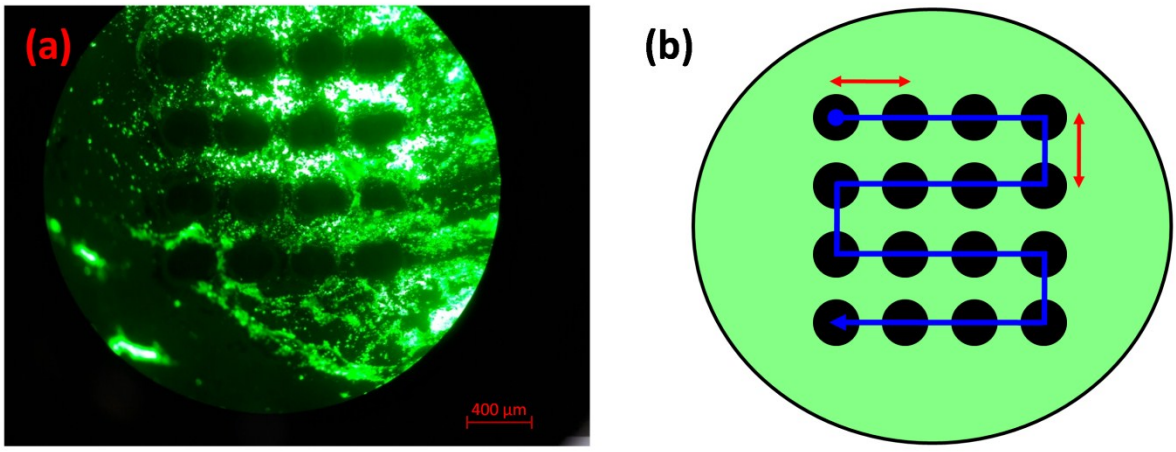


**Fig. S4:** Schematic representation of the laser irradiation pathway for the formation of the encapsulated luminescent patterns.

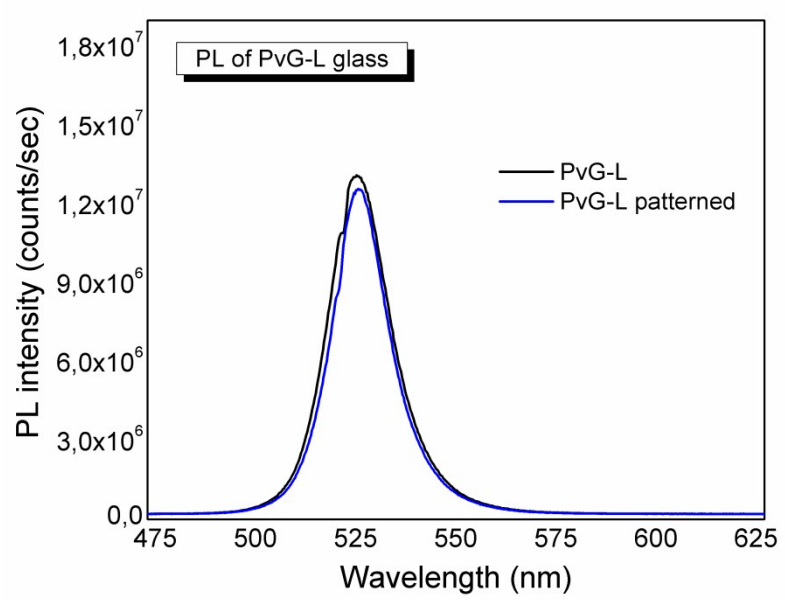


**Fig. S5:** Photoluminescence spectra of PvG-L glass before and after laser processing, with the latter PL spectrum collected from a non-irradiated region between the dark dots of the micropattern shown in Fig. 8c.

**SI Video**

**Vid. S1:** Photoluminescence of PvG-C sample following excitation with the 473 nm diode-pumped solid-state (DPSS) Nd:YAG laser of the micro-photoluminescence (μ-PL) setup. The video illustrates the transition of green photoluminescence upon moving the blue laser inside and outside the confined perovskite core region of the PvG-C glass.