

Supporting Information

Enhancing the Brightness of CsPbBr₃ Quantum Dots Electroluminescence Light-Emitting Diodes through the Manipulation of PEDOT:PSS Films

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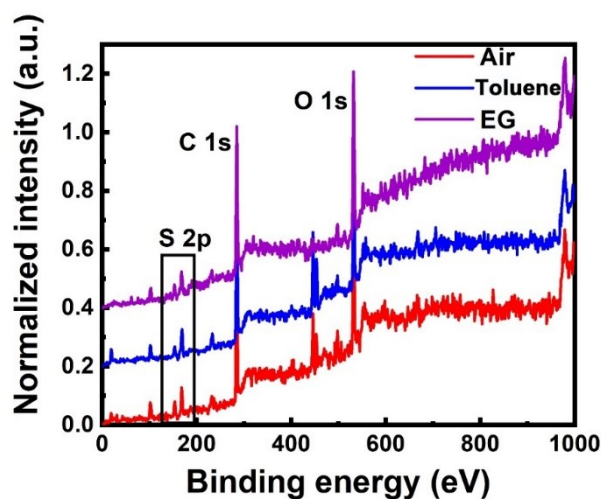


Fig. S1 The wide XPS spectra of PEDOT:PSS thin films prepared with air annealing, toluene vapor annealing, and EG-washed.

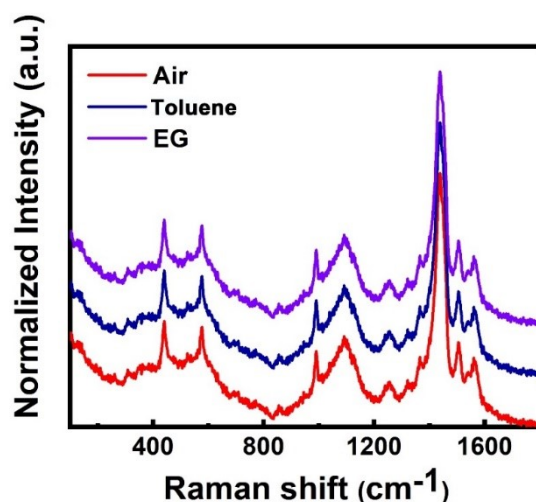


Fig. S2 Raman spectra of air annealed, treated with toluene vapor and EG-washed PEDOT:PSS films.

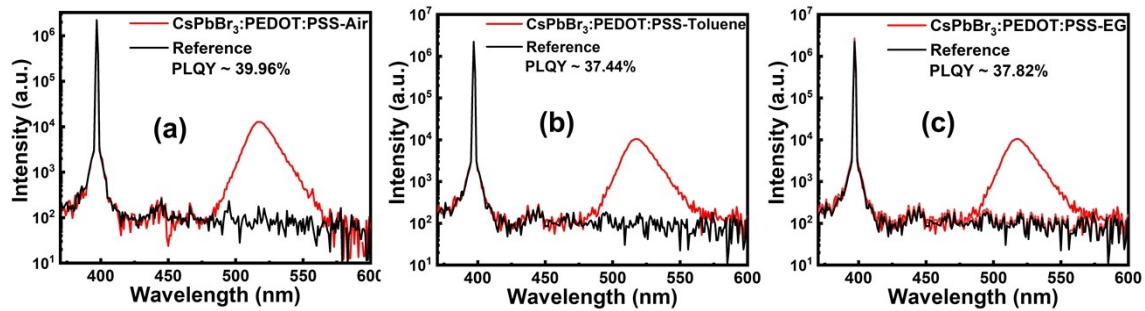


Fig. S3 The PLQY of the CsPbBr₃ QDs spin-coating on the PEDOT:PSS films.

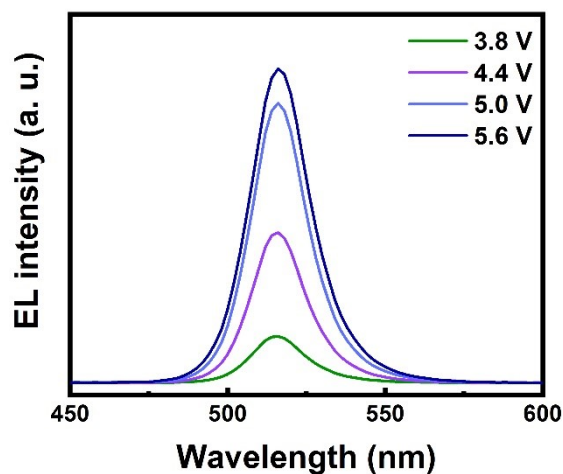


Fig. S4 EL spectra of QLED with toluene vapor annealed PEDOT:PSS films as the HTL at varied voltages. No change in the spectrum was observed.

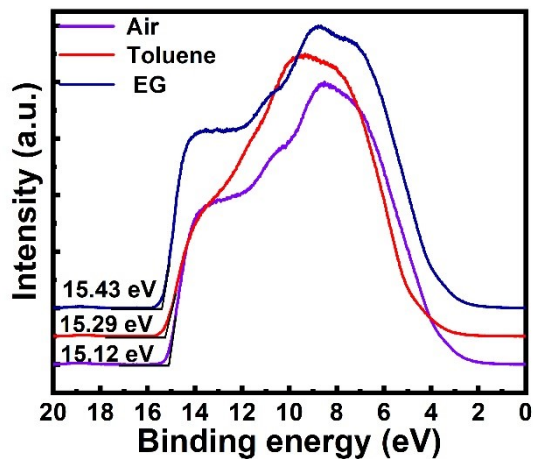


Fig. S5. UPS spectra of PEDOT:PSS films prepared by air annealing, toluene vapor annealing, and EG cleaning.

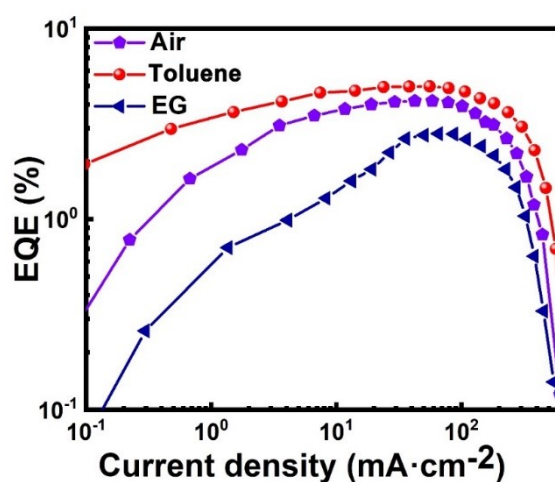


Fig. S6 EQE-voltage curves for CsPbBr₃ QLED devices with different treatments for the PEDOT:PSS layer.

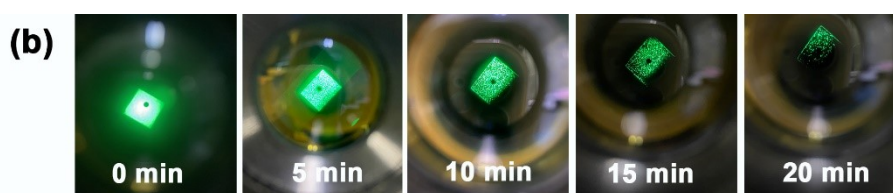
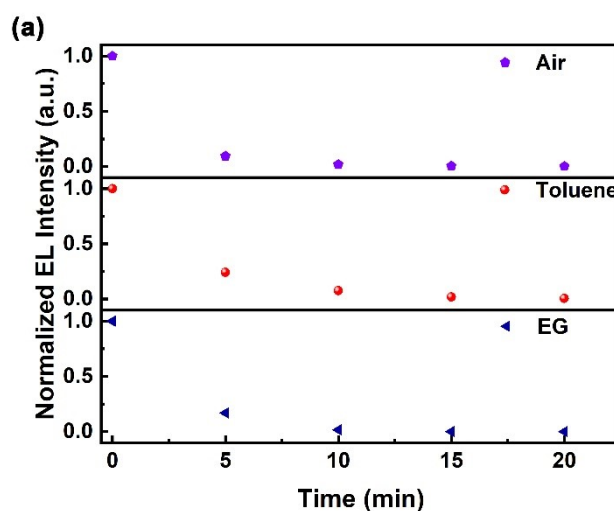


Fig. S7 (a) Normalized luminance versus time of the three types of QLEDs under a continuous bias of 6 V, (b) The photographs of the device of PEDOT:PSS films with toluene vapor annealing as HTL under a continuous bias of 6.0 V after different running periods. All the devices are without encapsulation.

Table S1. Summary of the performances of QLEDs based on CsPbBr₃ perovskite QDs.

Year	EL peak (nm)	Max. EQE (%)	Max. L (cd/m ²)	Refs.
2015	516	0.12	946	[1]
2016	516	0.06	1377	[2]
2016	523	0.19	2335	[3]
2017	525	0.43	8911	[4]
2017	513	2.1	11990	[5]
2017	512	8.73	1660	[6]
2018	516	6.5	7085	[7]
2018	518	4.62	10206	[8]
2018	508	8.08	1000	[9]
2019	517	9.7	2270	[10]
2020	519	0.55	2011	[11]
2020	513	5.9	24458	[12]
2020	524	5.6	5760	[13]
2021	518	~	833	[14]
2021	516	6.05	32747	[15]
2021	517	4.81	92279	[16]
2021	525	4.98	31140	Our work

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