Supplemental Information

Table S1. Typical raw materials cost of emission layers for ILED, OLED and PeLED.

Function layer	**EML**		
Device	**Raw materials**	**$/g**	**Supplier**
ILED	TMGa	1.7	Market purchase
	TMAl	3.6	Market purchase
OLED	Alq3	55.50	Sigma-Aldrich
	$Ir(piq)_3$	4678.58	Sigma-Aldrich
	FIrpic	2604.83	Sigma-Aldrich
PeLED	FAI	22.70	Sigma-Aldrich
	FABr	23.47	Sigma-Aldrich
	PEAI	12.4	Sigma-Aldrich
	PEACl	8.22	Sigma-Aldrich
	PbI_2	1.81	Sigma-Aldrich
	$PbBr_2$	1.21	Sigma-Aldrich
	$PbCl_2$	0.21	Sigma-Aldrich
	CH_3NH_3Cl	0.22	Sigma-Aldrich
	CH_3NH_3Br	36.16	Sigma-Aldrich
	CH_3NH_3I	36.16	Sigma-Aldrich

Table S2. Typical raw materials cost of hole transport layers for ILED, OLED and PeLED.

Function layer	**HTL**		
Device	**Raw materials**	**$/g**	**Supplier**
ILED	TMGa	1.7	Market purchase
	TMAl	3.6	Market purchase
	CP_2Mg	57.2	Market purchase
OLED	NPB	128.57	Sigma-Aldrich
	TPD	75.4	Sigma-Aldrich
	TCTA	118.40	Sigma-Aldrich
PeLED	PEDOT:PSS	1.35	Sigma-Aldrich
	NiO_x	2.28	Sigma-Aldrich

Table S3. Typical raw materials cost of electron transport layers for ILED, OLED and PeLED.

Function layer	ETL		
Device	**Raw materials**	**$/g**	**Supplier**
ILED	TMGa	1.7	Market purchase
	SiH_4	7.45	Market purchase
OLED	Alq3	55.50	Sigma-Aldrich
	TAZ	409.68	Sigma-Aldrich
	BND	72.14	Sigma-Aldrich
PeLED	TPBi	1362.1	Sigma-Aldrich
	ZnO	0.64	Sigma-Aldrich

Table S4. EQE of PeLEDs.

EQE	Emission wavelength	department	Supplemental Reference
ITO/ZnO-PEIE/Perovskite/TFB/MoO_x/Au			
20.7%	803 nm	Nanjing Tech University	[1]
ITP/ZnO:PEIE/$FAPbI_3$/TFB/MoO_x/Au			
21.6%	800 nm	Linköping University	[2]
ITO/ZnO/PEIE/$FAPbI_3$/poly-TPD/MoO_3/Al			
20.2%	799 nm	National University of Singapore	[3]
ITO/MZO/PEIE/PPBH/TFB-PFO/MoO_x/Au			
20.1%	795 nm	University of Cambridge	[4]
ITO/poly-TPD/Perovskite/TPBi/LiF/Al			
20.9%	694 nm	University of Science and Technology of China	[5]
ITO/PEDOT:PSS/poly-TPD/$CsPbBr_3$ (OA or OAM)/TPBi/Liq/Al			
21.3%	649 nm	Graduate School of Organic MaterialsPR Science	[6]
LiF/Al/B3PYMPM/PMMA/Perovskite/PEEDOT:PSS/ITO			
20.3%	525 nm	Huaqiao University	[7]
ITO/NiO_x/TFB/PVK/Perovskite/TPBi/LiF/Al			
1.96%	483 nm	Zhejiang University	[8]
ITO/ZnO/PEI/Perovskite QDs/TCTA/MoO_3/Al (Lead-free)			
0.206%	408 nm	Zhengzhou University	[9]

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