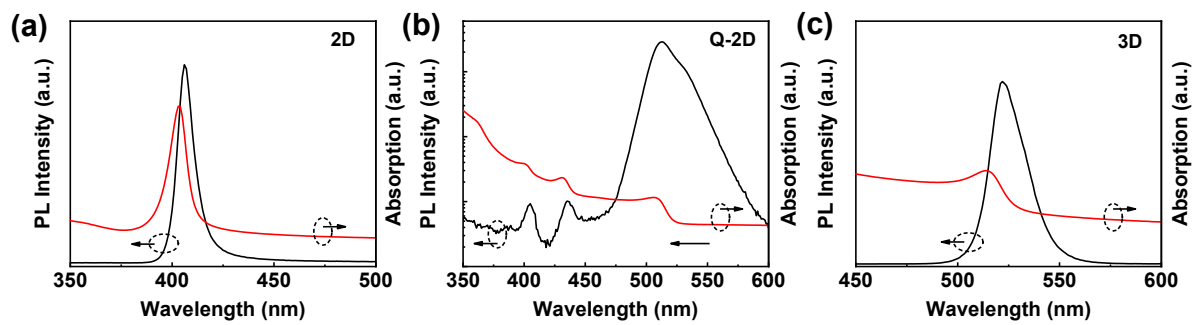


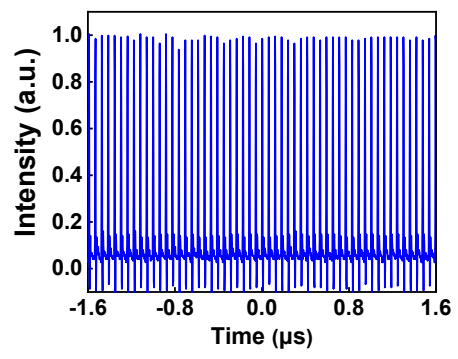
Supporting Information

**Mode-locking operation of Er-doped fiber laser with  
(PEA)<sub>2</sub>(CsPbBr<sub>3</sub>)<sub>n-1</sub>PbBr<sub>4</sub> perovskite saturable absorber**

**SONG YANG,<sup>1,†</sup> JINGZHEN LI,<sup>2,†</sup> LI LI,<sup>3</sup> LING ZHANG,<sup>2,\*</sup> AND XINGWANG  
ZHANG<sup>2,\*</sup>**



**Figure S1.** PL and absorption spectra of (a) 2D, (b) quasi-2D and (c) 3D perovskite.



**Figure S2.** Pulse train with 3.2  $\mu\text{s}$  x-axis span.

**Table S1.** The precursor solution preparation for 2D, quasi-2D and 3D perovskite. An excess of CsBr (molar ratio of CsBr:PbBr<sub>2</sub>=2:1) was introduced to suppress the formation of non-CsPbBr<sub>3</sub> phases. PEABr is phenylethylammonium bromide.

perovskite	PEABr (/mL)	PbBr <sub>2</sub> (/mL)	CsBr (/mL)
2D	0.2 mmol (40.4 mg)	0.1 mmol (36.7 mg)	0
Quasi-2D (n=5)	0.2 mmol (40.4 mg)	0.5 mmol (183.5 mg)	0.8 mmol (170.2 mg)
3D	0	0.5 mmol (183.5 mg)	1.0 mmol (212.8 mg)