Supplementary Information (SI) for Journal of Materials Chemistry C.

Laser in self-assembly size-controlled perovskite crystallite arrays on modulated substrate

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Table S1. Laser thresholds of different perovskite materials under different Pump pulse lengths

Active Material	Threshold	Pump Pulse Length	Reference
$FAPbI_3$	3 μJ cm^{-2}	150 fs	[1]
$FAPbI_3$	19.5 μJ cm^{-2}	5 ns	[1]
$MAPbI_3$	12 μJ cm^{-2}	150 fs	[2]
$MAPbI_3$	54.1 μJ cm^{-2}	5 ns	[3]
$CsPbBr_3$	3.3 μJ cm^{-2}	150 fs	[4]
$CsPbBr_3$	64.9 μJ cm^{-2}	5.5 ns	[4]
$MAPbBr_3$	15 μJ cm^{-2}	80 fs	[5]
$MAPbBr_3$	14 μJ cm^{-2}	5 ns	this work

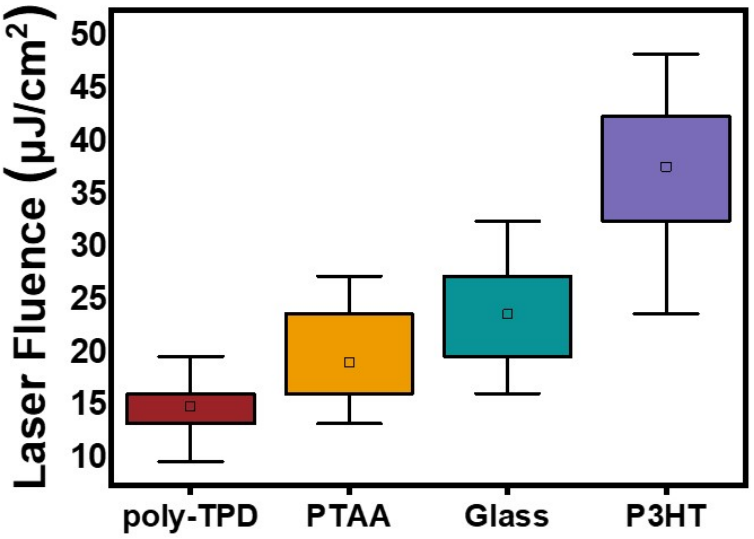

Figure S1. Threshold statistics of crystallites grown on poly-TPD, PTAA, Glass, P3HT films.

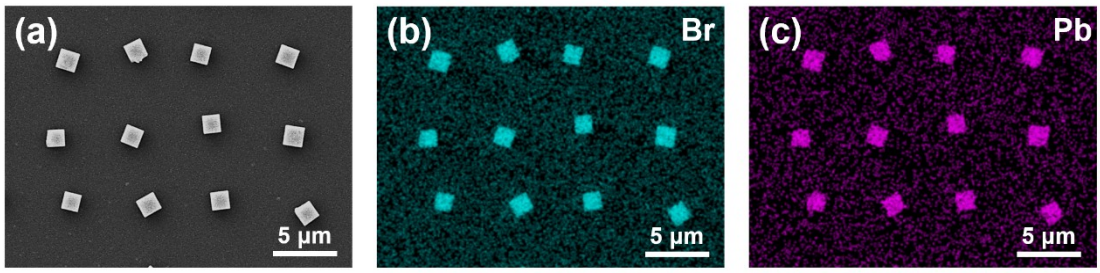

Figure S2. EDS maps of $MAPbBr_3$ crystallites. (a) SEM image, (b) and (c) distribution maps of Br and Pb.

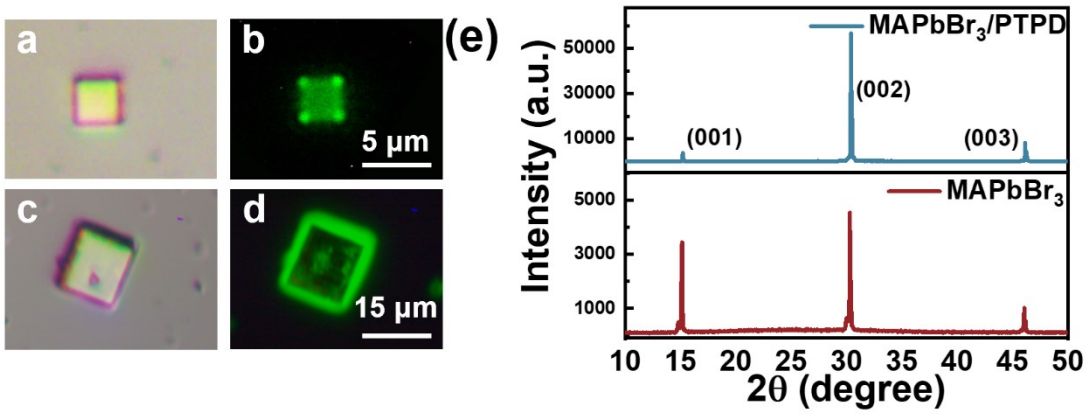

Figure S3. (a)(c) Microscopy photographs and (b)(d) fluorescence images of $MAPbBr_3$ crystallite grown on poly-TPD film(a)（b) and glass（c）(d). (e) Comparison of XRD patterns of the two crystallites.

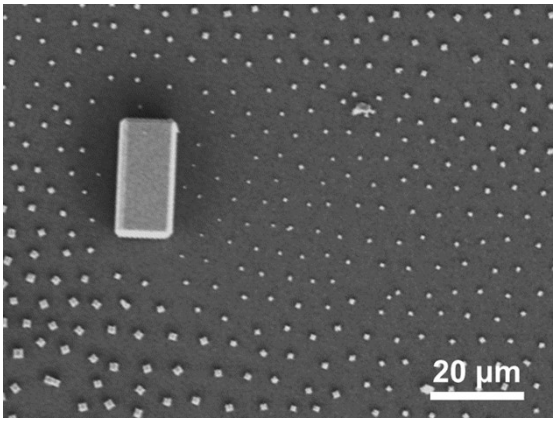

Figure S4. SEM image of crystallite array with special huge size and surrounding perovskite crystallite.

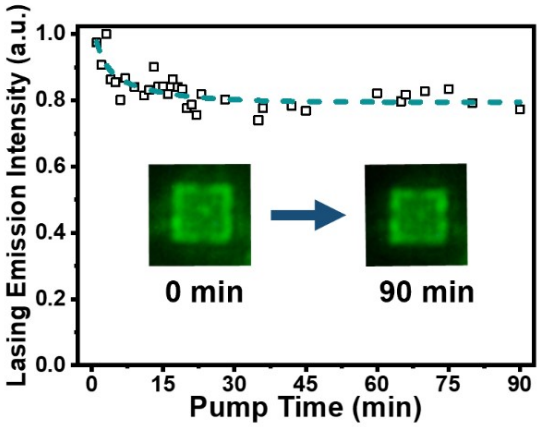

Figure S5. Stability of $MAPbBr_3$ crystallite under continuous irradiation of a 450 nm pulsed laser (5 ns, 10 Hz) in air. The insert figures are the fluorescence images of perovskite crystallite at beginning of excitation and 90 minutes after excitation.

References

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