Supplementary Information

Controllable Growth of Two-Dimensional Perovskite Microstructures

Chen Fang¹, Junze Li¹, Jun Wang¹, Rong Chen¹, Haizhen Wang², Shangui Lan¹, Yining Xuan¹, Hongmei Luo², Peng Fei¹ and Dehui Li¹, ³*

¹School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, 430074, China;
²Department of Chemical and Materials Engineering, New Mexico State University, NM 88003, United States;
³Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Wuhan, 430074, China;

*Correspondence to: Email: dehuili@hust.edu.cn.
Fig. S1 OM images of (BA)$_2$PbI$_4$ butterflies grown on glass substrate at crystallization temperatures of (a) 25°C, (b) 50°C, (c) 70°C, (d) 100°C and (e) 130°C with the mass ratio of 8.25%. The scale bar is 5 μm. (f) Plots of crystal size and thickness of (BA)$_2$PbI$_4$ butterflies against the crystallization temperature.
Fig. S2 OM images of (BA)$_2$PbI$_4$/(BA)$_2$(MA)Pb$_2$I$_7$ square plates grown on Si substrate at mass ratios of (a) 4.5%, (b) 8.25%, (c) 12.5%, (d) 15% and (e) 25% with the crystallization temperature of 70°C. The scale bar is 5 μm. (f) Plots of crystal size and thickness of (C$_4$H$_9$NH$_3$)$_2$PbI$_4$/(C$_4$H$_9$NH$_3$)$_2$(CH$_3$NH$_3$)Pb$_2$I$_7$ square plates against the perovskite mass ratio in DMF.