Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supplementary Information

Facile Surface Modification upon $CH_3NH_3PbI_3$ Films Leading to Simultaneously Improved Efficiency and Stability of Inverted Perovskite Solar Cells

Hongmei Zhu, Boyuan Huang, Shaohang Wu, Zhenzhong Xiong, Jiangyu Li* and Wei Chen*

Ms. H. Zhu, Dr. S. Wu, Mr. Z. Xiong, Prof. W. Chen

Shenzhen Key Laboratory of Nanobiomechanics, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen 518055, Guangdong, China

Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Luoyu Road 1037, Wuhan 430074, China

Mr. B. Huang, Prof. J. Li

Shenzhen Key Laboratory of Nanobiomechanics, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen 518055, Guangdong, China

Department of Mechanical Engineering, University of Washiongton, Seattle, WA 98195, USA

*Corresponding Authors, E-mail: jjli@uw.edu (J. Li), wnlochenwei@mail.hust.edu.cn (W. Chen)

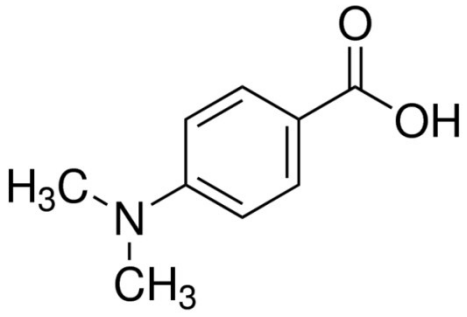

Figure S1. The molecular structure of 4-DMABA.

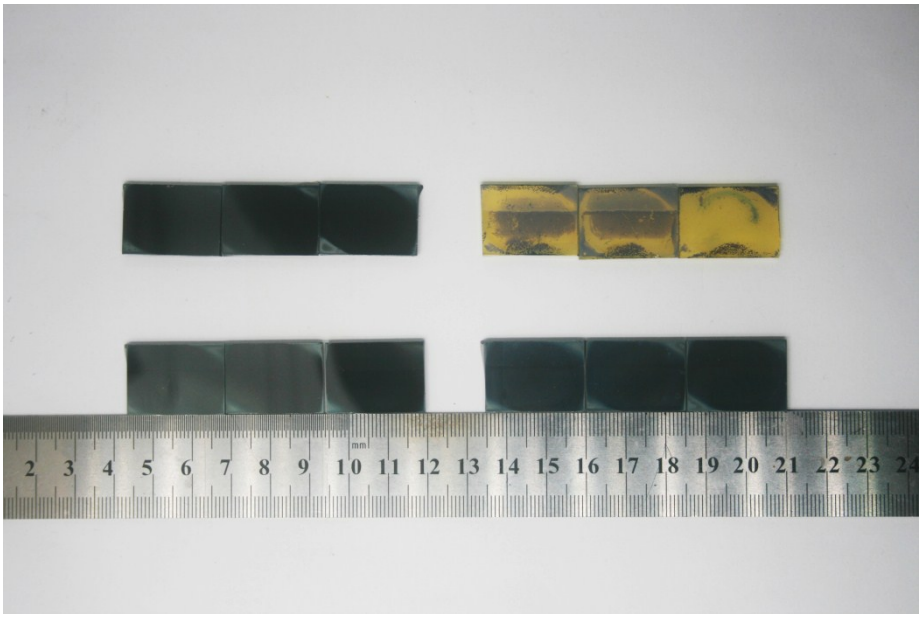

Figure S2. Color changes of the pristine and 4-DMABA modified $MAPbI_3$ films before and after 10 or 20 days' aging in ambient atmosphere close to the window.

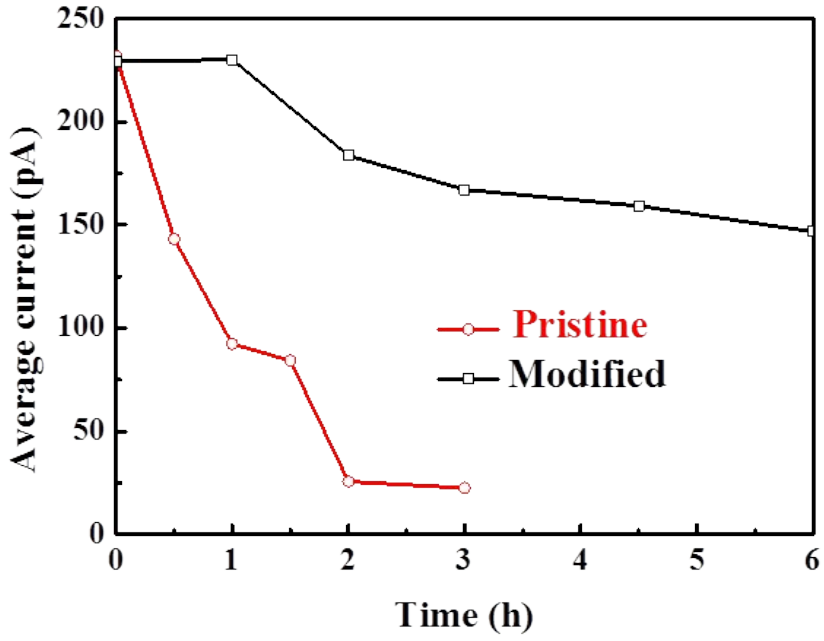

Figure S3. The degradation of average current of the pristine and 4-DMABA modified $MAPbI_3$ films along with the aging time during the pc-AFM tests. Average current is obtained from current mapping results.

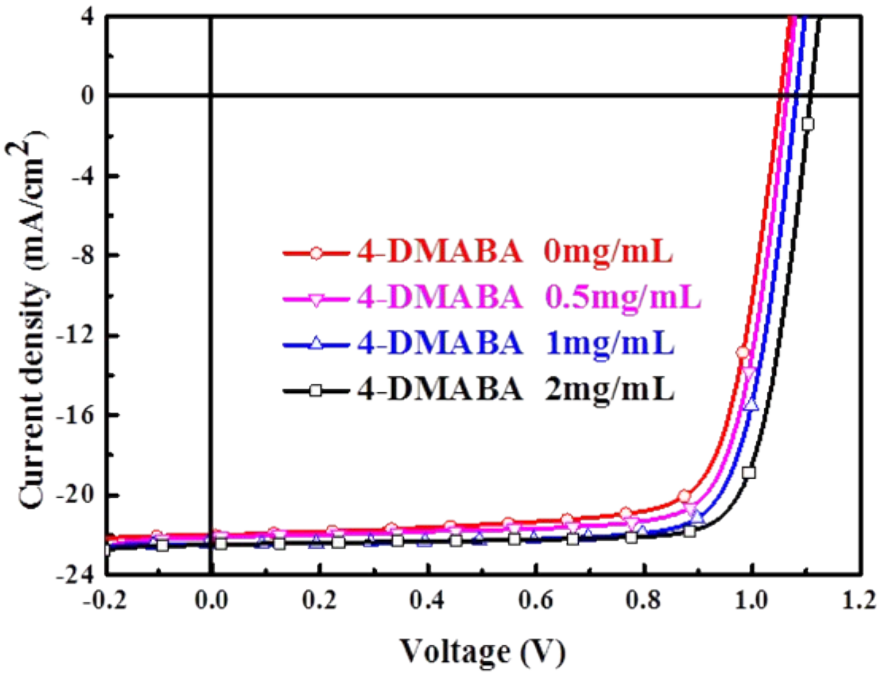

Figure S4. *J-V* curves for the PSCs based on the $MAPbI_3$ films treated with 4-DMABA of different concentrations.