Electronic Supplementary Material (ESI) for Nanoscale.

Electronic Supplementary Information

Visible Light Response, Electrical Transport, and Amorphization in compressed Organolead Iodine Perovskite

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Sample Preparation

$CH_3NH_3PbI_3$ nanorods were prepared by coprecipitation method using spin coating technique, based on the procedure reported.[1] A first precursor solution were prepared by dissolving Methyl ammonium iodide (CH_3NH_3I - MAI) and lead (II) iodide (PbI_2) at a 1:1 mole ratio in ɤ-butyrolactone at 80 °C for 2 h. Films were spin-coated at 2000 rpm for 20 s and annealed at 80 ºC for 10 minutes in the glovebox. CH_3NH_3I and PbI_2 were dissolved in anhydrous N, Ndimethyl formamide (DMF) in a 1:1 molar ratio, at 0.88 M of each reagent to give a perovskite second precursor solution. The above films were again spin coated at 2000 rpm for 20 s using the second precursor solution. Finally $CH_3NH_3PbI_3$ nanorods are obtained and these spin coated films were annealed at 80 ºC for 30 min in glovebox. The samples were stored in sealed glass tube in glovebox for further characterizations.

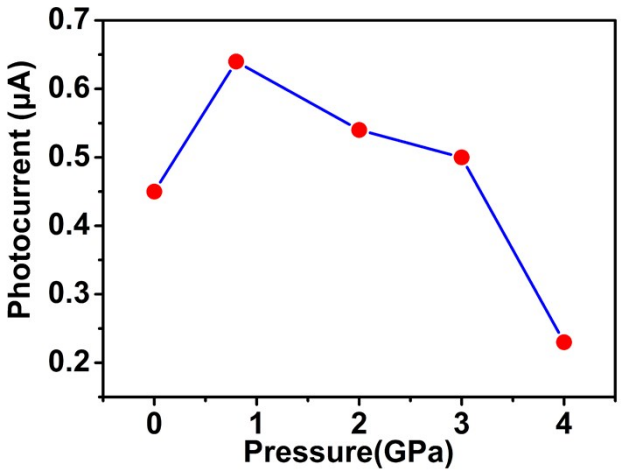

Figure S1. The pressure dependence of photocurrents.

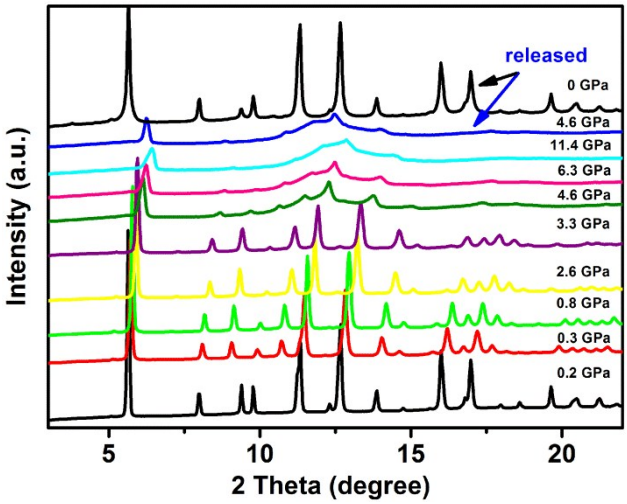

Figure S2. Synchrotron XRD patterns of $MAPbI_3$ with silicone oil as the pressure transmitting medium obtained during compression up to 11.4 GPa and decompression.

References

1.N. Rajamanickam, S. Rajashabala and K. Ramachandran, *AIP Conf. Proc.*, 2015, **1665**.080034