Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Role of chlorine in the performance of mixed halide perovskite solar cells OOMMAN VARGHESE[1], AIDA TORABI[2], MAGGIE PAULOSE[3], University of Houston — Recently introduced mixed halide perovskite solar cells have attracted considerable attention due to the demonstrated high photoconversion efficiency and the anticipated low cost fabrication. The presence of chlorine in CH3NH3PbX3 (x = halogen) apparently increased the carrier diffusion length to about 1 micron. Increase in carrier diffusion length enabled use of inorganic thin films instead of high surface area nanostructures as electron transport medium. However, due to the ferroelectric behavior of organic halides, the devices often give unreliable efficiency values and other solar cell parameters. We observed that chlorine play a significant role in the reliability of cell characteristics, We will present the result of our photo-impedance spectroscopy studies on chlorine-iodine based metalorganic perovskite cells.

[1]Department of Physics
[2]Department of Physics
[3]Department of Physics

Oomman Varghese
University of Houston

Date submitted: 14 Nov 2014 Electronic form version 1.4