

Abstract Submitted
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Characterization and Photoconductivity Measurements of Methylammonium Lead Iodide Perovskite Thin Films DAVID R. SPRENGER, Depts. of Chemistry and Physics, John Carroll University, JEFFREY S. DYCK, Dept. of Physics, John Carroll University, ROBERT STANEK, CLEMENS BURDA, Dept. of Chemistry, Case Western Reserve University — Methylammonium lead iodide is a material with highly desirable photoconductive properties, making it very efficient for use in solar panels. Thin films of methylammonium lead iodide were prepared by spin-coating solutions of lead(II) iodide and methylammonium iodide onto a glass slide, followed by annealing on a hot plate in inert atmosphere. X-ray diffraction and electron microscope data showed the films were of moderate quality. The photoconductive properties in vacuum of the films were characterized under illumination by white light, in addition to narrow-spectrum red and blue light from high power light emitting diodes. The current-voltage characteristics were verified to be Ohmic. The electrical resistance versus light intensity and wavelength trends were compared to various models of photoconduction. We gratefully acknowledge support from John Carroll University and the Ferro Corporation.

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