

Abstract Submitted
for the MAS16 Meeting of
The American Physical Society

Optical Absorption and Carrier Dynamics of Semiconductor Delafossites. RISHMALI SOORIYAGODA, TESS R. SENTY, BARRY HAYCOCK, Department of Physics and Astronomy, West Virginia University, JONATHAN LEKSE, CHRISTOPHER MATRANGA, The National Energy Technology Laboratory, HONG WANG, GIHAN PANAPITIYA, ALAN D. BRISTOW, JAMES P. LEWIS, Department of Physics and Astronomy, West Virginia University — Delafossites semiconductor oxides (ABO_2) are being considered for wide range of photovoltaic and photocatalytic applications. In ternary crystals the fundamental band gap is forbidden, whereas addition of second B site ion breaks inversion symmetry and allows the transition to occur. In this study, optical absorption, photoconductivity and transient absorption are used to investigate the carrier dynamics of delafossites $CuGaO_2$ and related $CuGa_{1-x}Fe_xO_2$ (with $0.00 \leq x \leq 0.05$) alloys for potential applications.

Rishmali Sooriyagoda
Department of Physics and Astronomy, West Virginia University

Date submitted: 16 Sep 2016

Electronic form version 1.4