



UNIVERSITY OF CENTRAL FLORIDA

NANO SCIENCE TECHNOLOGY CENTER
ADVANCED MATERIALS PROCESSING & ANALYSIS CENTER

GRADUATE RESEARCH SEMINAR SERIES

Friday
October 23, 2015

12:15 PM

Research Pavilion
NSTC
Conference Room 475

*Pizza and drinks
will be provided*

A PCBM-Assisted Low Temperature Process to Fabricate High Efficiency Semitransparent Perovskite Solar Cells

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Semi-transparent planar perovskite solar cell is of great interest due to its potential application in building integrated photovoltaics (BIPVs). In this study, efficient perovskite solar cells with good transparency in the visible wavelength range have been developed by a facile and low-temperature method. Only one-step heating is required to anneal both the active perovskite and PCBM layers. This method involves fewer steps and therefore is less expensive compared to other methods. The semitransparent solar cell exhibited power conversion efficiency (PCE) from 12% to 4% depending on the average visible transmittance (AVT) ranging from 3% to 35%. As-fabricated semitransparent perovskite solar cells with an active layer thickness of only about 150nm provide a high PCE of 8.8% and an AVT of 18%.

