Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

MIS Solar Cell Devices Based on a Cu2O Substrate Utilizing h-BN as an Insulating and Passivating Layer[1] ONUR ERGEN, ASHLEY GIBB, OSCAR VAZQUEZ-MENA, WILL REGAN, ALEX ZETTL, University of California at Berkeley — We demonstrate Cu_2O based metal insulator semiconductor Schottky (MIS-Schottky) solar cells with efficiency exceeding 3%. A unique direct growth technique is employed in the fabrication, and hexagonal boron nitride (h-BN) serves simultaneously as a passivation and insulation layer on the active cuprous oxide (Cu_2O) layer. The devices are the most efficient of any Cu_2O based MIS-Schottky solar cells reported to date.

[1]1Department of Physics, University of California at Berkeley, Berkeley, California 94720, USA. 2Materials Sciences Division, Lawrence Berkeley National Laboratory,Berkeley,CA,USA.Kavli Energy Nanosciences Institute at the University of Berkeley,CA,USA.

Onur Ergen
University of California at Berkeley

Date submitted: 14 Nov 2014 Electronic form version 1.4