

Abstract Submitted
for the APR14 Meeting of
The American Physical Society

Printable CIGS thin film solar cells XIAOJUAN FAN, Marshall University — Among the various thin film solar cells in the market, CuInGaSe thin film cells have been considered as the most promising alternatives to silicon solar cells because of their high photo-electricity efficiency, reliability, and stability. However, many fabrication of CIGS thin film are based on vacuum processes such as evaporation sputtering techniques which are not cost efficient. This work develops a method using paste or ink liquid spin-coated on glass that would be to conventional ways in terms of cost effective, non-vacuum needed, quick processing. A mixture precursor was prepared by dissolving appropriate amounts of chemicals. After the mixture solution was cooled, a viscous paste prepared and ready for spin-coating process. A slight bluish CIG thin film substrate was then put in a tube furnace with evaporation of metal Se by depositing CdS layer and ZnO nanoparticle thin film coating to a solar cell fabrication. Structure, absorption spectrum, and photo-conversion efficiency for the as-grown CIGS thin film solar cell under study.

Xiaojuan Fan
Marshall University

Date submitted: 10 Jan 2014

Electronic form version 1.4