Effect of Junction Morphology on the Performance of Polycrystalline Cu_2O Homojunction Solar Cells

*Colleen M. McShane, Withana P. Siripala,[a] Kyoung-Shin Choi**

Department of Chemistry, Purdue University, West Lafayette, IN 47907, USA

SUPPORTING INFORMATION

* To whom correspondence should be addressed. Email: kchoi1@purdue.edu; Tel: 1-765-494-0049; Fax: 1-765-494-0239.

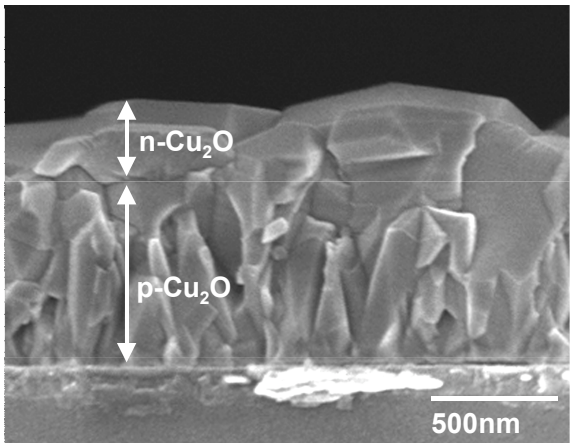

Figure S1. The side view SEM image of p-Cu_2O(II)/n-Cu_2O homojunction. The p-Cu_2O(II) layer is approximately 700 nm thick and the n-Cu_2O layer is approximately 300 nm thick, which are identical to those forming p-Cu_2O(I)/n-Cu_2O homojunction shown in Figure 3a-b.

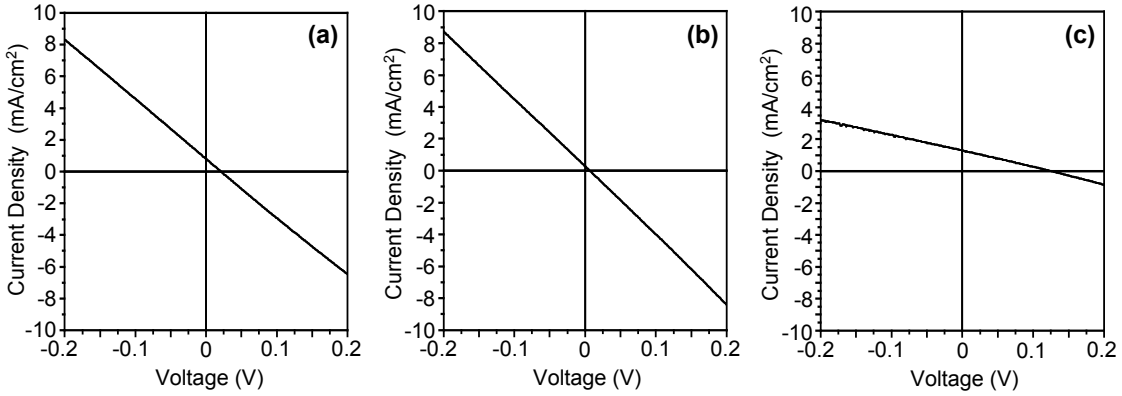

Figure S2. I-V curves of (a) p-Cu_2O(I), (b) p-Cu_2O(II), and (c) n-Cu_2O layers under under 1 sun, AM 1.5 illumination. ITO substrates were used as back contacts and sputter coated AuPd dots were used as front contacts. They show a slight photoresponse indicating the presence of a leaky Schottky junction formed either at the Cu_2O/ITO or at the Cu_2O/AuPd interfaces, which agrees well with the imperfect Ohmic behavior observed in their dark I-V curves.