

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Photoresponse in reduced graphene oxide thin films¹ SURAJIT GHOSH, University of Central Florida Nanoscience Technology Center, BIDDUT K. SARKAR, University of Central Florida Nanoscience Technology Center and Dept. of Physics, ANINDARUPA CHUNDER, LEI ZHAI, University of Central Florida Nanoscience Technology Center and Dept. of Chemistry, SAIFUL I. KHONDAKER, University of Central Florida Nanoscience Technology Center and Dept. of Physics — We examine photo-response and positional dependent photocurrent generation in chemically reduced graphene oxide (RGO) thin film under near infrared illumination. We have observed that the photocurrent depends strongly on the position of laser spot with maximum photocurrent occurring at the metal-film interface. A slow time constant (~ 2.8 seconds) was observed and the photocurrent exhibits a linear dependence on the incident laser intensity. In light of our observations, the positional sensitive photocurrent generation is explained as originating from the diffusion of photo-excited carriers around the Schottky barriers at the RGO thin film electrode junctions.

¹One of the authors (S.G) thanks DST, Government of India, for BOYSCAST fellowship.

Saiful I. Khondaker
University of Central Florida Nanoscience
Technology Center and Dept. of Physics

Date submitted: 29 Nov 2009

Electronic form version 1.4