

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Electronic structure of graphite oxide HAE KYUNG JEONG, Daegu University, CHEOLSOO YANG, Samsung Electronics, BONG SOO KIM, KI-JEONG KIM, Pohang Accelerator Laboratory (PAL) — We have investigated the electronic structure of graphite oxide by photoelectron spectroscopy at the Pohang Accelerator Laboratory, Korea. The typical sp^2 hybridization states found in graphite were also seen in graphite oxide. However, the π state disappeared near the Fermi level because of bonding between the π and oxygen-related states originating from graphite oxide, indicating electron transfer from graphite to oxygen and resulting in a downward shift of the highest occupied molecular orbital (HOMO) state to higher binding energies. The band gap opening increased to about 1.8 eV, and additional oxygen-related peaks were observed at 8.5 and 27 eV.

This research was supported by the Basic Science Program through the National Research Foundation of Korea (NRF), funded by the Ministry of Education, Science and Technology (2010-0004592), and partly by the MEST (2009-0087138). Experiments at the PLS were supported in part by POSTECH and MEST.

Hae Kyung Jeong
Daegu University

Date submitted: 17 Nov 2010

Electronic form version 1.4