Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

In-situ IR studies of graphene oxide reduction.[1] MUGE ACIK, LAURENCE GOUX, YVES CHABAL — Thermal reduction of graphene oxide (GO) synthesized by Hummer's method is studied by *in-situ* infrared absorption spectroscopy in a vacuum reactor. Initially, water and hydroxyl groups are removed (100^oC), with release of CO_2. Upon reduction of epoxides and carbonyl groups, the appearance of sp2-bonded carbon (C=C bonds) is evident with detection of in-plane and out of plane vibrations. However, oxygen remains in the structure in the form of COC bonds even after 700^oC anneal. Around 290^oC, a strong increase of the absorbance associated with structure changes of GO is observed. The increase of the refractive index is attributed to an increase of electrical conductivity after reduction of GO.

[1]Work supported by the Soutwest Academy for Nanoelectronics funded by SRC-NRI

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Date submitted: 21 Nov 2008 Electronic form version 1.4