

Abstract Submitted  
for the 4CF12 Meeting of  
The American Physical Society

**Microwave microscopy of electrical and magnetic properties of graphene and graphite**<sup>1</sup> NIKOLAI KALUGIN, CHRISTOPHER DEL BARGA, LEE WICKEY, MEKAN OVEZMYRADOV, New Mexico Tech, ERIC SHANER, AARON GIN, SNL and CINT, VLADIMIR TALANOV, Neocera LLC, NMT TEAM, SNL AND CINT TEAM, NEOCERA LLC TEAM — The investigation of microwave properties of graphene and graphite is an important practical and scientific problem. The results of microwave measurements of graphene and graphite obtained using near-field scanning microwave microscopy, with the probe formed by an electrically open end of a 4 GHz half-lambda parallel-strip transmission line resonator, allow to develop a quantitative electrodynamic model of graphene microwave impedance. Investigations of the magnetic properties of graphene and graphite have recently attracted significant attention. The results of near-field scanning superconducting quantum interference device (SQUID) RF microscopy of graphite and graphene at 200 MHz show that screening currents induced in the sample by an external RF magnetic field tend to localize near defects. Sandia National Laboratories is a multi-program laboratory operated by Sandia Corporation, a Lockheed-Martin Company, for the U. S. Department of Energy under Contract No.DE-AC04-94AL85000..

<sup>1</sup>The work has been done with support of NSF (SBIR IIP-0924610, EPDT 0925988), and was performed, in part, at the Center for Integrated Nanotechnologies, a U.S. Department of Energy, Office of Basic Energy Sciences user facility.

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Date submitted: 24 Sep 2012

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