

**Citation:**

B.A. Ruzicka, L.K. Werake, Hui Zhao, S. Wang, and K.P. Loh, *Femtosecond pump-probe studies of reduced graphene oxide thin films*, [Applied Physics Letters](#), 96, 173106 (2010).

**Published version:**

Published version: [http://apl.aip.org/applab/v96/i17/p173106\\_s1](http://apl.aip.org/applab/v96/i17/p173106_s1)

**Other sources:**

ArXiv: <http://arxiv.org/abs/1003.1972>

**Key words:**

Mesoscale and Nanoscale Physics

Materials Science

Optics

**Abstract:**

The dynamics of photocarriers in reduced graphene oxide thin films is studied by using ultrafast pump-probe spectroscopy. Time dependent differential transmissions are measured with sample temperatures ranging from 9 to 300 K. At each sample temperature and probe delay, the sign of differential transmission remains positive. A fast energy relaxation of hot carriers is observed, and is found to be independent of sample temperature. Our experiments show that the carrier dynamics in reduced graphene oxide is similar to other types of graphene, and that the differential transmission is caused by phase-state filling of carriers.