

Abstract Submitted
for the GEC06 Meeting of
The American Physical Society

Sorting Category: 1.1 (E)

Study of Vibration-Vibration and Vibration-Electronic Energy Transfer in Nitric Oxide ALLEN WHITE, Rose-Hulman Institute of Technology, IGOR ADAMOVICH, J. WILLIAM RICH, The Ohio State University — The $v=1$ vibrational level of nitric oxide is populated via resonant absorption of a single line carbon monoxide laser. Higher vibrational and electronic levels of nitric oxide are populated by $v-v$ and $v-e$ energy transfer mechanisms, respectively. Infrared overtone emission spectra are observed via time resolved step-scan Fourier transform infrared measurements and time resolved gamma band and beta band ultraviolet emissions are also measured. Additional measurements were taken to detect associative ionization in $V-V$ pumped NO, as well as the electron production rate. The $v-v$ energy transfer rates are inferred by comparing time-resolved experimental results to computational models. Results indicate that current NO kinetic rate models must be modified to describe experimentally observed population rise times presented here.

Prefer Oral Session
 Prefer Poster Session

Allen White
white.611@osu.edu
The Ohio State University

Date submitted: 15 Jun 2006

Electronic form version 1.4