## UV DISSOCIATION OF ETHYL ETHYNYL ETHER AND THE PRODUCTION OF THE KETENYL RADICAL (HCCO): A STUDY BY TIME-RESOLVED FTIR EMISSION SPECTROSCOPY

## WILLIAM McNAVAGE, MICHAEL J. WILHELM, RAYMOND R. GROLLER and HAI-LUNG DAI, *Department of Chemistry, The University of Pennsylvania, Philadelphia PA, 19104-6323, USA.*

The ketenyl radical (HCCO) was generated through UV dissociation of Ethyl Ethynyl Ether (EEE), a precursor chosen for its unity quantum yield in the production of HCCO<sup>*a*</sup>, a radical that plays an important role in the oxidation of most C2 hydrocarbons and is a major intermediate in the formation of CO and  $CO_2$  in the troposphere. IR emission from photoproducts following the EEE precursor dissociation was detected by sub-microsecond time-resolved Fourier transform emission spectroscopy. Two previously unknown vibrational modes, the  $\nu_1$  CH stretch and the  $\nu_3$  symmetric CCO stretch of HCCO have been identified and will be presented. The nascent product distribution from the EEE photo-dissociation will be discussed.

<sup>a</sup>M. J. Krisch, J. L. Miller and L. J. Butler J. Chem. Phys. 119(1), 176 July 2003.