PHOTOCHEMISTRY OF BIACYTIL-\textit{d}_6 ISOLATED IN INERT GAS MATRICES

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We report the results of ultraviolet photolysis of biacetyl-\textit{d}_6 ((CD_2CO)_2) trapped in solid nitrogen, argon, and krypton. The infrared spectra obtained prior to photolysis are in agreement with the gas phase results obtained by Durig and coworkers \textsuperscript{a}. The photoproducts were characterized via infrared spectroscopy. Irradiation at 405 nm results in the production of CO, CD_2CO, and CD_3, which are the photoproducts expected from gas phase biacetyl-\textit{h}_6 studies at this wavelength \textsuperscript{b}. Recombination of the trapped photoproducts leads to the production of other species not observed in the gas phase photolysis, including ketene-\textit{d}_3 (CD_2CO) and acetaldehyde-\textit{d}_4 (CD_2CDO). Mechanisms for the production of these and other secondary photoproducts will be discussed.
