FT-IR SPECTROSCOPY OF MATRIX ISOLATED ALLYLPEROXYL RADICALS

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$^2A''$ Allylperoxyl radicals, $C_3H_5O_2$, have been generated in a cryogenic Ar matrix. In a two pulse experiment, allyl radicals, C_3H_5, are generated via pyrolysis of allyliodide in Ar through a hyperthermal SiC nozzle and deposited on a CsI window at 20 K; a second valve deposits a layer of O_2 in Ar on top of the allyl radicals. The process is repeated and allylperoxyl radicals are formed in the matrix. The matrix is analyzed with an IR spectrometer to identify vibrational frequencies of the peroxyl radical.