INFRARED SPECTROSCOPY AND ULTRA-VIOLET PHOTOCHEMISTRY OF H_2O_2 IN SOLID PARAHYDROGEN

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The high resolution infrared spectrum of solid parahydrogen crystals doped with anhydrous H_2O_2 has been observed for the first time. Doped crystals were prepared via the rapid vapor deposition method developed by Fajardo and co-workers. UHP (urea hydrogen peroxide) was utilized as a source of anhydrous H_2O_2 vapor. A series of photolysis studies were conducted with 274 nm radiation generated from the AS_2 (second anti-Stokes) beam of a 355 nm pumped hydrogen Raman shifter. Mechanistic studies will be presented as well as infrared spectroscopic studies of the photochemically generated radical species.