INFRARED SPECTROSCOPY OF HYDROGEN PEROXIDE AND ITS PYROLYSIS PRODUCTS IN SUPERFLUID LIQUID HELIUM DROPLETS

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We have coupled a pyrolysis source to a helium droplet apparatus in an effort to obtain free radical IR spectra. The results of early results of this apparatus are reported. Infrared spectra have been obtained for hydrogen peroxide in superfluid liquid helium droplets, as well as its clusters with HCN. The pyrolysis source was further tested by monitoring the infrared absorption bands of different pyrolysis products and their associated clusters with HCN at different source-temperatures up to 1200 K, with particular emphasis being given to the production of OH radicals.