INFRARED SPECTROSCOPY OF SIZE-SELECTED PROTONATED MOLECULAR CLUSTERS: $(N_2)_nH^+$, $(CO)_nH^+$, AND $((CH_3)_2CO)_nH^+$

ALLEN M. RICKS, GARY E. DOUBERLY, and MICHAEL A. DUNCAN, *Department of Chemistry, University of Georgia, Athens, Georgia 30602*.

Cold, rare gas tagged, gas phase protonated molecular clusters are produced in a pulsed electric discharge supersonic expansion cluster source. The infrared spectra of the size-selected species are obtained *via* infrared photodissociation spectroscopy. The structure and spectroscopy (700-4000 cm^{-1}) of the monomers and dimers of protonated nitrogen, carbon monoxide and acetone will be discussed.