

INFRARED SPECTROSCOPY OF COLD, HYDRATED ALKALINE EARTH-HYDROXIDE CLUSTERS

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Hydrated, singly-charged $[\text{MOH}]^+$ (M=Mg,Ca) clusters have been investigated using mass-selective cryogenic infrared spectroscopy. Spectra of $[\text{MOH}]^+ \cdot (\text{H}_2\text{O})_n$ reveal broad features beginning at $n = 3$ that approach 1000 cm^{-1} in width at $n = 5$, indicative of large amplitude motion in the water network despite ion temperatures below 40 K. Comparison to calculated structures and spectra help to elucidate the structural and charge-separation dynamics occurring in these clusters.