

THE NEAR-INFRARED SPECTRUM OF THE JET-COOLED GERMANIUM METHYLIDYNE (GeCH) RADICAL

HAIYANG LI, TONY C. SMITH, DENNIS J. CLOUTHIER, *Department of Chemistry, University of Kentucky, Lexington, KY 40506-0055*; CHRISTOPHER T. KINGSTON and ANTHONY J. MERER, *Chemistry Department, University of British Columbia, 2036 Main Mall, Vancouver, BC, Canada V6T 1Z1*.

The $\tilde{A} \ ^2\Sigma^+ - \tilde{X} \ ^2\Pi$; LIF spectrum of the previously unknown germanium methylidyne radical has been observed by fragmentation of tetramethylgermane in a pulsed discharge jet. Extensive series of bands of both GeCH and GeCD were observed in the near-infrared. The strongest band of GeCH at $14,700 \text{ cm}^{-1}$ has been recorded at high resolution and rotationally analyzed to provide ground and excited state rotational constants. The vibrational frequencies, spin-orbit splitting and bonding will be discussed.