

HIGH RESOLUTION LASER EXCITATION SPECTROSCOPY OF BARIUM MONOSULFIDE

G. LI, J.-G. WANG, and P. F. BERNATH, *Department of Chemistry, University of York, Heslington, York, YO10 5DD, UK.*

BaS molecules were synthesized using a Broida-type oven and detected by laser excitation spectroscopy using a single mode Ti:Sapphire laser. High resolution spectra of BaS were recorded in the $12200 - 12765 \text{ cm}^{-1}$ region. The BaS spectra contain several bands, and preliminary assignments and least-squares fits were carried out using ground state microwave data. The main bands are provisionally assigned to the $A^1\Pi - X^1\Sigma^+$ transition of BaS. Further analysis of the minor isotopologues will be performed in order to obtain a secure vibrational assignment of the upper state levels. More laser scans will also be carried out from 12200 cm^{-1} to the lower frequency limit of the Ti:Sapphire laser. Preliminary results on this ongoing project will be presented.