INFRARED EMISSION SPECTRUM OF DBO

PINA COLARUSSO, KEQING ZHANG, PETER BERNATH, *Department of Chemistry, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1*; YOSHIYUKI KAWASHIMA, *Department of Chemical Technology, Kanagawa Institute of Technology, Atsugi, Kanagawa 243-02, Japan*; and EIZI HIROTA, *The Graduate University for Advanced Studies, Hayama, Kanagawa 240-01, Japan*.

We generated the transient molecule DBO by reacting deuterium with the parent molecule, HBO, at temperatures above 800°C in a ceramic tube furnace. Infrared emission spectra were recorded with a Fourier transform spectrometer at a resolution of 0.01 cm^{-1} from 350 to 3600 cm^{-1}. We observed the three fundamental vibrational bands as well as various hot and combination bands. A strong Coriolis interaction was detected between the ν_1 and ν_2+ν_3 energy levels. The high-resolution infrared data for DBO will be combined with previous results[a,b] to yield a thorough analysis of the ground electronic state.

[a] Y. Kawashima *et al., J. Molec. Spectrosc.* **133**, 116-127 (1989) and *44th Symp. Molec. Spectrosc.*, Columbus, (1989).
[b] P. Colarusso *et al., 51st Sympos. on Molec. Spectrosc.*, Columbus, (1996).