



## Book Review

### **The Vibrational and Rotational Spectrometry of Diatomic Molecules**

J F Ogilvie; Academic Press, San Diego, London, x + 448 pages, ISBN 0-12-524420-7, £ 75.00 (US\$ 120.00)

The emphasis in this rather specialised monograph is on the quantitative treatment of spectral data, in particular vibration–rotational transitions of diatomic molecules. The first three chapters introduce the experimental and theoretical characterisation of vibration–rotational frequencies and intensities and review mathematical methods used to interpret the spectra. The next three chapters present detailed results

relating successively to the potential energies of vibration–rotational states, vibrational and vibration–rotational wave functions and matrix elements. Chapter 7 presents the application of these results to the evaluation of electric and magnetic properties and the intensities of vibration–rotational transitions of molecules in an electronic state  $^1\Sigma^+$ . The final chapter discusses topics including extensions to molecules in other electronic states, vibration–rotational lasers based on diatomic molecules, and the effects of intermolecular interactions on frequencies, intensities and shapes of spectral lines.

A.J.B.