

Optical Emission Lines of the Elements

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Optical Emission Lines of the Elements is a unique CD-ROM and print package comprising a fully searchable electronic database of emission lines for nearly 90 elements and a practical reference handbook.

The database has been compiled using an algorithm which calculated all the electric-dipole emission lines for each element based on their electronic structure. This product therefore contains wavelengths for lines that are very weak and only observable under optimum conditions. This is a break away from the traditional compendia of emission lines which consist of experimentally measured lines and intensities.

The CD-ROM provides many valuable features including:

- Information about all atomic and first ionic state lines in the range 100 nm to 900 nm (in air or vacuum) associated with the known energy levels for most elements from hydrogen to uranium
- Calculated transition probabilities for all lines
- A database that allows the user to plot the calculated spectrum matching their selection of elements and wavelength range
- Adjustable parameters so that the database can be customised to match the general characteristics of the user's own source and spectrometer.

Accompanying the CD-ROM is a reference handbook which includes a detailed introduction explaining the electronic structure of the atom and how the wavelengths and the intensities within the text and CD-ROM were calculated. The handbook also contains extensive tables showing 35,000 of the strongest lines for all atoms and ions arranged by element and by wavelength.

Written by experts in the field of optical emission this multimedia package is indispensable to researchers and analysts using other OES techniques, as well as the libraries of institutes involved in the research and teaching of atomic spectroscopy and manufacturers of ICP, arc, spark and glow discharge spectrometers.

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Contents

Introduction	xi
1.1 The Theory of the Atom and Atomic Spectra	xi
1.2 Atomic Structure	xii
Table of ground states of neutral atoms and ions	xiv
1.3 Wavelength	xviii
Table of wavelengths in nitrogen or standard air and vacuum	xxi
1.4 Coupling Schemes	xxii
1.5 Selection Rules	xxiv
1.6 Intensity	xxv
1.7 Line Shape	xli
Selected Optical Emission Lines, Arranged by Element	1
Selected Optical Emission Lines, Arranged by Wavelength	469
Installation and Operation of the CD-ROM	685
Periodic Table of the Elements showing starting page for the elemental spectra	686
Index	687