

RECENSIONES

A. H. MUIL, K. J. ANDO, H. M. COOGAN:

Mössbauer Effect Data Index 1958—1965

The research work on the recoilless nuclear resonance absorption of γ -radiation immensely increased in the years following 1958. The phenomenon was observed on approx. 44 different isotopes and applied to various problems in solid state physics, nuclear physics, relativity theory and even in biology. For instance, the 14.4 keV transition of the Fe^{57} was studied on about 500 materials and publications on this subject appeared in approximately 20 languages. Under such circumstances researchers will find valuable assistance in this volume of about 350 pages; it contains mainly the data relating to the 44 isotopes including appropriate references to the special literature, which has been assorted, in addition, according to several viewpoints.

I. KOVÁCS*

W. L. HINDMARSH: Atomic Spectra

In his book of 368 pages, the author introduces the reader to the laws of atomic spectra, the theoretical interpretation of spectra and discusses the role spectra played in exploring atomic shell structure. In the Introduction (in Chapter I of the first part) the author deals with the structure of light and matter and, briefly, with the laws of atomic spectra. Chapter II discusses the spectral lines including the spectra of the hydrogen atom, the Bohr theory, hydrogen-like ions, the role of the finite mass of the nucleus, line series observed in elements other than hydrogen, the doublet structure of the spectra of alkali atoms. In Chapter III the spectra of atoms with two outer electrons, in Chapters IV and V the fine and hyperfine structure of lines, in Chapter VI the Zeeman-effect, in Chapter VII the intensity distribution of lines and the selection rules are explained, while the last Chapter deals with the width of spectrum lines (Doppler, natural and recoil broadenings).

In the second part there are reprinted original articles in English which had a decisive role on the development of our knowledge on the atomic shell structure; all re-published papers are of a classical value to-day. The following authors have been included:

BALMER (1885), RYDBERG (1889), BOHR (1913), SOMMERFELD (1920), WENTZEL (1921), LORENTZ (1915), LANDÉ (1923), RUSSELL and SAUNDERS (1925), HEISENBERG (1926), BURGER and DORGELO (1924), UHLENBECK and GOUDSMIT (1926), FERMI and SEGRÉ (1933), RACAH (1932), BREIT (1932), BETHE (1947), WEISSKOPF and WIGNER (1930) and WEISSKOPF (1932).

Originally the papers were published in the following periodicals and publications, respectively:

Annalen der Physik, Den Kongliga Svenska Vetenskaps Akademiens Handlingar, Philosophical Magazine, Zeitschrift für Physik, Physical Review, Physikalische Zeitschrift and Theory of Electrons.

The book will be of valuable assistance to all those who wish to study the present state of the theory of atomic spectra in a concise summary.

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