

New procedure calculation of $K\beta/K\alpha$ intensity ratios of low Z-elements

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Abstract

Over the years, a large quantity of experimental data were reported in the literature for $K\beta/K\alpha$ intensity ratios. Several researchers investigated $K\beta/K\alpha$ values by using different methods according to different experimental conditions such as ionization processes, target materials and type of detectors. The experimental values used in this work to calculate empirical and semiempirical data for elements from $16S$ to $30Zn$ relies on the published experimental data. The semiempirical method was based on both theoretical values, calculated using the relativistic Hartree-Slater theory taken from the work of Scofield [1] for $K\beta/K\alpha$ intensity ratios, and to the experimental values. On the other hand, the experimental data of the K X-ray intensity ratios ($K\beta/K\alpha$) were directly interpolated to deduce the empirical values. The results were compared with the other theoretical and experimental values reported in the literature [1-2]

Keywords: K-shell fluorescence yield; semiempirical and empirical calculations.

References

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