

Determination of $K\alpha$ X-ray Production Cross Sections and $K\beta/K\alpha$ Intensity Ratios for Ba, La, Ce and Gd Elements Excited with Photons of 0,0208 Nanometer Wavelengths

F. Akman¹, M. F. Turhan², R. Durak³ and İ. Demirkol¹

¹ Bingöl University, Arts and Sciences Faculty, Department of Physics, 12000 Bingöl, Turkey

² Afyon Kocatepe University, Atatürk Health Services Vocational High School, Medical Imaging Techniques, 03200 Afyon, Turkey.

³ Atatürk University, Sciences Faculty, Department of Physics, 25240 Erzurum, Turkey
fakman@bingol.edu.tr

$K\alpha$ X-ray production cross-sections and $K\beta/K\alpha$ intensity ratios are important in a variety of fields such as atomic physics, molecular physics, space physics, plasma physics, X-ray fluorescence analysis, medical research, environmental protection and industrial processing [1]. The $K\alpha$ X-ray production cross-sections and the $K\beta/K\alpha$ intensity ratios of Ba, La, Ce and Gd elements were determined with experimentally and theoretically. The targets were irradiated with photons of 0,0208nm wavelengths. It has been observed that the obtained values in the present study agree with theoretical results and other available experimental values.

[1] R. Durak and Y. Şahin, Phys. Rev. A, 57, 2578 (1998).