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Measurement of Photon-Induced K X-Rays Production Cross Sections for Elements with 62 \le Z \le 74

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Abstract: X-ray production cross sections of $K\alpha_1$, $K\alpha_2$, $K\beta'_1$ (= $K\beta$ {\ss}$_1$ + $K\beta_3$ + $K\beta_5$) and $K\beta'_2$ (= $K\beta_2$ + $K\beta_4$ + transitions from higher levels) lines have been measured and theoretically calculated for six elements with 62 \le Z \le 74 at excitation energy of 78.706 keV, the weighted avarage of K conversion x-rays emitted from Bi. The experimental results were compared with theoretically predicted values based on relativistic Hartree-Slater and Hartree-Fock theories, a comparison that was found to be in good agreement to within the experimental uncertainties.

Key Words: K shell, X-ray fluorescence, Cross section.

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