

# Experimental determination of atomic fundamental parameters for X-ray spectroscopy

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The importance of having reliable atomic fundamental parameters for quantitative X-ray spectroscopy is obvious as more and more applications of both laboratory and synchrotron based XRS evolve. However, the existing databases for atomic fundamental parameters usually provide rather weak information on low-Z elements or soft X-ray transitions. For atomic fundamental parameters as e.g. the subshell photo ionization cross sections even wrong datasets exist and are being used [1].

The Physikalisch-Technische Bundesanstalt operates a laboratory at the BESSY II electron storage ring, where calibrated XRS instrumentation [2] and monochromatic synchrotron radiation of high spectral purity and well-known flux are employed also for an experimental determination of atomic fundamental parameters. This enables reliable evaluations of various FPs, including fluorescence yields [3], Coster-Kronig factors [4], ionization cross sections [1] and very recently also line energies and scattering cross sections using newly developed instrumentation.

## REFERENCES

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