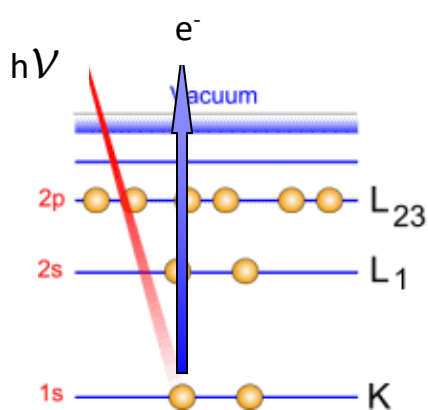


Practicals

N°02: SURFACE ANALYSIS, AN INTRODUCTION TO XPS

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X-ray Photoelectron Spectroscopy known as XPS or ESCA (Electron Spectroscopy for Chemical Analysis) has been developed from the Fifties by Professor K. Siegbahn. The Physics Nobel Prize awarded his work in 1981. The most interesting thing with this technique is its ability to measure binding energy variations resulting from their chemical environment. For the past 20 years, this type of spectrometry emerged as a key tool in surface analysis, mainly because of two major features :

- Quantitative analysis
- Information on the chemical nature and state of the detected elements.

The aim of this workshop is to provide an intensive introduction to the principles of the electron spectroscopic techniques of X-ray photoelectron spectroscopy. After theoretical aspects, laboratory demonstrations will be performed. The lecturers will study 2 different kinds of surfaces, a silicon wafer and a stainless steel surface in order to identify elements and chemical bonds. Finally a model to describe oxide surfaces will be proposed to calculate oxide thicknesses.