

## **SURFACE ANALYSIS**

### **1. Separation of a Reflection Electron Energy Loss spectrum into its different components**

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The inelastic electron scattering cross section gives valuable information on the electronic structure of the surface region of the solid.

In the past, experimental methods to determine the inelastic scattering cross section for electrons moving in solids have largely relied on experiments where electrons passed through an extremely thin solid film. Such experiments are however exceptionally difficult and for electron energies below about 10 keV such experiments can only be carried out for a few special solids. It is now possible to determine the inelastic electron scattering cross section from analysis of the energy distribution of a mono-energetic beam of electrons that is reflected from a solid surface, the so-called Reflection Electron Energy Loss Spectroscopy (REELS).

However practical actual methods do not allow to fully correct the spectrum for the multiple scattered electrons and thus the determination of the effective inelastic scattering cross section is blurred. The goal of the work is well to develop software allowing to separate the experimental REELS spectrum into its varied components. The method will be then applied to practical spectra of technological importance.

## **PARTICLES-MATTER INTERACTIONS: Nuclear medicine and radiotherapy**

(in collaboration with Jules Bordet Institute)