A WIEN FILTER VELOCITY ANALYZER FOR INTERMEDIATE ENERGY ELECTRON IMPACT SPECTROSCOPY

Heloisa M.B. Roberty* **and Gerardo G.B. de Souza**

*Observatório do Valongo, Universidade Federal do Rio de Janeiro, Ladeira Pedro Antônio, 43, 20080, Rio de Janeiro, Brazil

Instituto de Química, Universidade Federal do Rio de Janeiro, Cidade Universitária, 21910, Rio de Janeiro, Brazil

A new electron velocity analyzer based on the Wien Filter principle, has been developed. In this analyzer an electrical and magnetic field perpendicular to each other, disperse electrons of different energies. Immersion electrostatic lenses are employed, in order to decelerate and accelerate the electrons respectively before and after energy dispersion. This analyzer has demonstrated an excellent capability to determine the energy loss spectra in an extended impact energy range (0.2 eV to 1.5 eV). The high inherent signal/noise ratio has lead to the acquisition of well-defined and reliable inner-shell spectra.