

# The design and construction of ultra high vacuum system and resolution measurements of an Auger electron spectrometer by using 4-grid LEED Optics

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A multipurpose ultra high vacuum chamber was designed and constructed in this laboratory. This enables us to be equipped with various analytical instruments such as Ar-ion gun, LEED optics, electron analyzer, and guadrupole mass spectrometer etc.

The UHV chamber was equipped with 4-grid LEED optics, a product of Omicron company in West Germany, and the LEED power supply was designed by this group.

Turbo-C language figured out Auger spectra of surface elements by means of the computer interface.

The resolution of Auger electron spectrometer was measured with a constant primary electron beam energy. The results showed that the resolution was independent of the primary electron beam energy, but depends on the modulation voltage. Also, it was revealed that the resolution of 4-grid optics was more improved than that of 3-grid optics.