

# AN INVESTIGATION OF THE PROPERTIES OF VACUUM- ULTRAVIOLET RADIATION DETECTORS

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**Abstract.** At the Institute of Physics and Astronomy of the Academy of Sciences of the Estonian S.S.R. there is a laboratory for the research on the properties of detectors for vacuum ultraviolet radiation. The laboratory has also the necessary measuring equipment, including a beam double vacuum monochromator for the wavelengths 1000–2700 Å with a balancing-out system of registration attached to it. The last-named device automatically eliminates effects on the results of measurement caused by the distribution of energy in the spectrum of the light source as well as by absorption in the apparatus.

Earlier the absolute efficiency of detectors was determined by means of a thermocouple but at present it is calculated from the data obtained from the photoionisation cross sections of gases.

The present report throws light on some results of the investigation of the properties of radiation detectors under different operating conditions.

## Discussion

*Campbell:*

(1) In your use of sodium salicylate to transfer your absolute quantum efficiency measurements to other wavelengths, what evidence do you have of the uniformity of the quantum efficiency with wavelength?

(2) Have you measured the quantum efficiency of the sodium salicylate at wavelength shorter than 2537 Å?

*Tiyt:*

(1) We have not directly investigated the constancy with wavelength of the quantum efficiency of sodium salicylate. But we suppose that if we have a fresh layer of sodium salicylate the quantum efficiency is constant. In course of calibration of the two-beam monochromator we compare fresh and old sodium salicylate layers in order to detect if there is some variation with time.

(2) I have calibrated the screen by wavelength 2537 Å with a thermocouple.

*Wilson:* Have you made a direct comparison between your ionization chamber and thermocouple? You can do this by observing a source in the pass band of the former, using the latter as an energy detector.

*Tiyt:* No, I have not made a direct comparison between ionization chamber and thermocouple.