

THE MEASUREMENTS OF THE ELECTRICAL FIELD IN THE CURRENT OF ACTIVE  
CARBON DUST.

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It is not possible to measure the electrostatic field without disturbing it. The minimisation of this disturbance determines the accuracy of the methods. Most of known methods are based on the use of the current probe which is brought in the field.

In our work the "radioactive convertor" was used to intervene between a probe and a galvanometer with sensitivity of  $10^{-10}$  A. The other end of the probe was connected to the galvanometer through the gas which was ionized by the  $\alpha$  - source put in the vessel. The density of primary ionisation along the  $\alpha$  - particle path sets the limit on the probe current. The system of electrode pairs produces electric field normal to the  $\alpha$  -particle path. By means of this field the multiplication process and large linearity of the convertor can be obtained. "Radioactive convertor" has the function of protective resistance without introducing Joule's losses.

Using this method the electrostatic field was measured in the current of active carbon dust. The particle diameter was  $0.5, \mu - 10$  mm. Calibration of the device was done in the electrical field of cylindrical geometry.

The scheme of the device is shown in fig. 1.

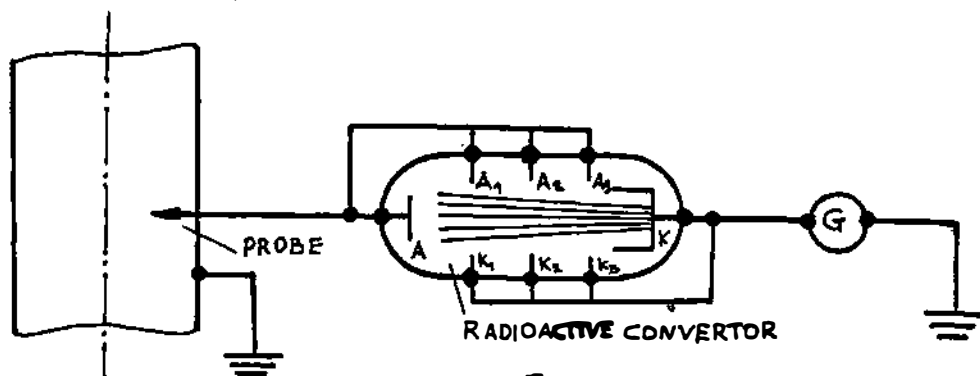


Fig. 1