selection. The results are indicated in figure 2.

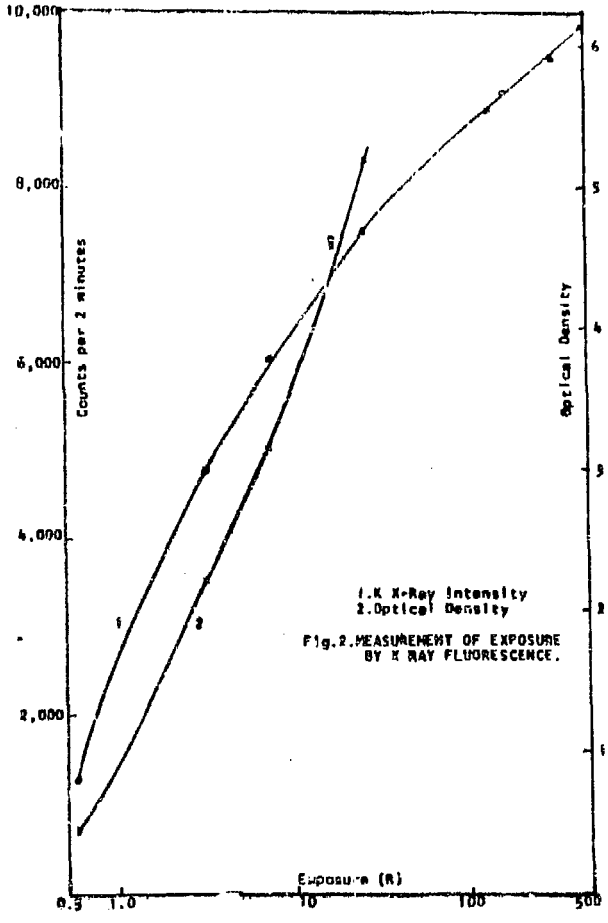


Fig.2.MEASUREMENT OF EXPOSURE BY X RAY FLUORESCENCE.

It can be seen that exposures upto 500 R of Ir-192 gammas can be evaluated employing fluorescence technique whereas by densitometric method, exposures beyond about 12 R cannot be evaluated since the optical density is more than 4.

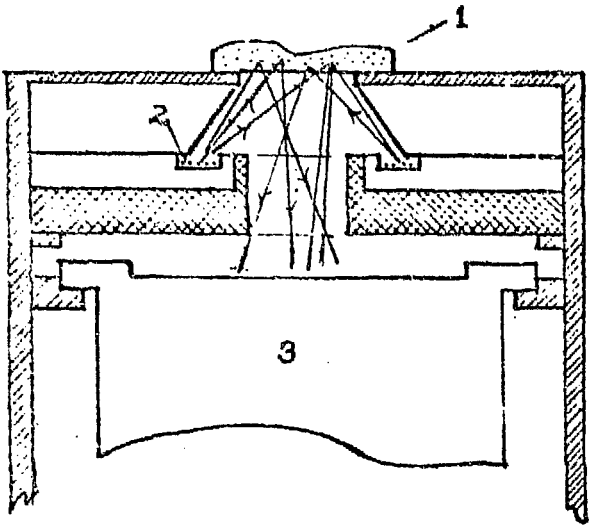
15. A Beta Backscattering Gauge With An Integrating Scaler Assembly

P. Gangadharan, A.V.L. Pathy, M.J. Subramanya, V.H. Risbud, A. Thiagarajan.

This instrument employs the principle of backscattering, wherein, beta particles from a radioisotope are scattered, by the object being tested, back towards a Geiger Mueller counter. The number of beta particles reaching the detector is a measure of the

thickness of the scatterer or effective atomic number of the scatterer. Metal coatings such as silver and gold as also organic coatings such as plastics and paints, can be measured provided the effective atomic numbers of the coating and the base materials are different.

An annular source geometry is employed in this instrument as shown in Fig.1 The output of Geiger Mueller counter is fed to an



1. SAMPLE
2. SOURCE
3. G.M. DETECTOR

Fig.1 PROBE FOR BETA BACKSCATTER GAUGE

integrating scaler assembly to give quick and accurate readout. The time of integration (30, 60, 120 Secs.) can be selected, depending on the countrate and accuracy required.

With this instrument thicknesses upto 60 mg/cm^2 can be measured with good accuracy, as can be seen from the graph (Fig.2). This instrument can also be employed for the measurement of silver content in processed radiographic/photographic films.

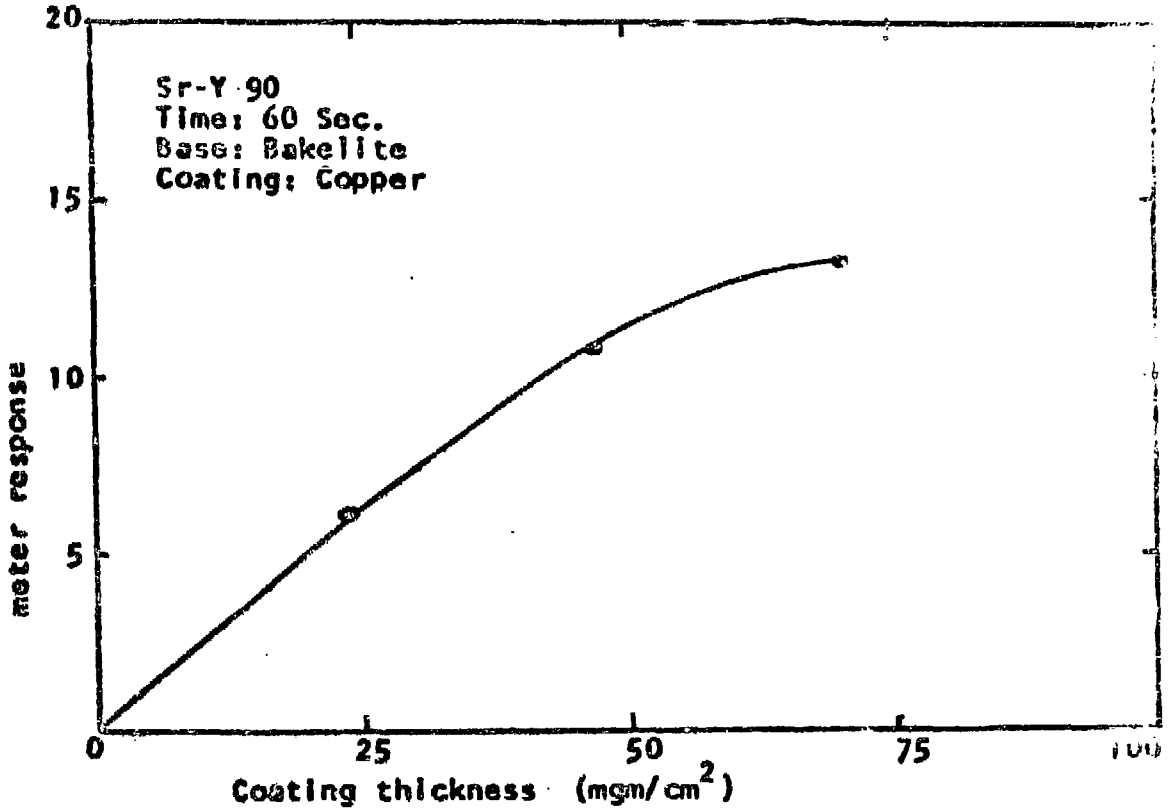


Fig.2. RESPONSE CURVE FOR BETA BACKSCATTERING GAUGE.

14. An Automatic Isodose Curve Plotter For Clinical Use

P. Gangadharan, N.C. Pal, S.P. Gambhir, A. Sankaran and K.S. Gopalakrishnan

An automatic isodose curve plotter has been designed and fabricated for drawing isodose curves for various field sizes of X- and Gamma ray beams. The instrument consists of two air equivalent ionization chambers - a 0.4 cc probe chamber kept inside a water phantom and a 4 cc monitor chamber mounted at the exit of the treatment cone of the X-ray machine or at the end of the field defining portal in a teletherapy machine. The ionisation currents from the two chambers are amplifierd by D.C. amplifiers. A preselected output of the monitor chamber, which determines