

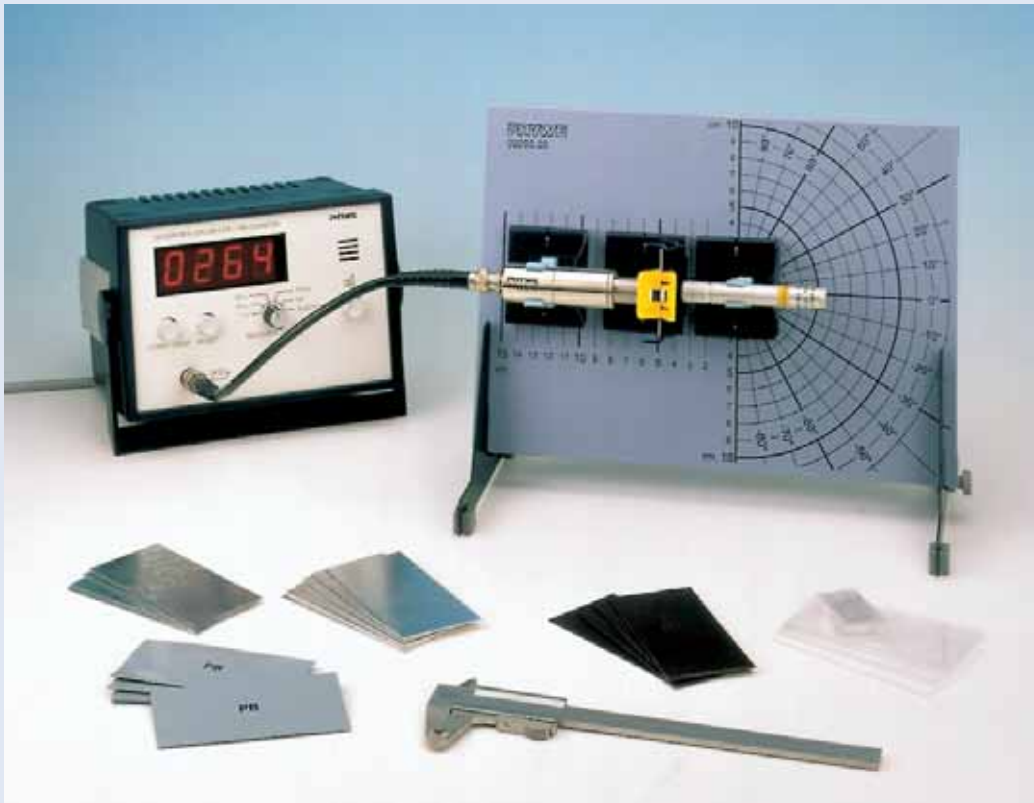
Electron absorption 5.2.31-00

What you can learn about ...

- Density
- Counter tube
- Radioactive decay
- Attenuation coefficient
- Mass coverage

Principle:

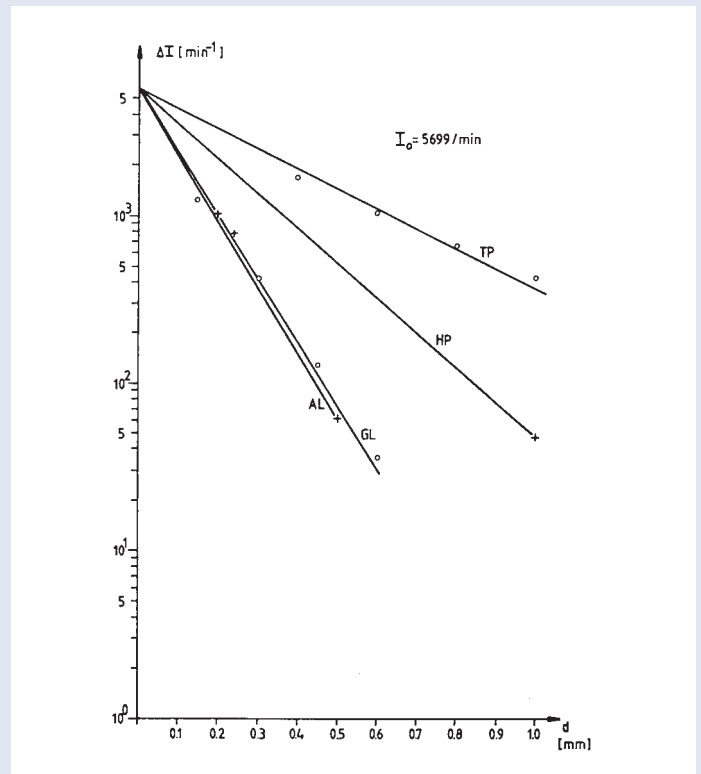
The attenuation of an electron particle stream passing through a material layer depends both on the thickness of the layer and on the mass coverage, resp. the "mass per unit area". It will be shown that the particle flux consisting of electrons of a particular energy distribution decreases with the "mass per unit area". As electron source, a radioactive sample of Sr^{90} is used.



What you need:

Radioactive source, Sr-90, 74kBq	09047.53	1
Geiger-Müller Counter	13606.99	1
Counter tube, type A, BNC	09025.11	1
Screened cable, BNC, $l = 750$ mm	07542.11	1
Stopwatch, digital, 1/100 s	03071.01	1
Base plate for radioactivity	09200.00	1
Supports for base 09200.00, 2 pcs.	09200.01	1
Counter tube holder on fixing magnet	09201.00	1
Plate holder on fixing magnet	09203.00	1
Source holder on fixing magnet	09202.00	1
Vernier calipers, stainless steel	03010.00	1
Absorption plates for beta-rays	09024.00	1
Cover glasses, 40 x 22 mm, 50 pcs.	64688.00	1

Complete Equipment Set, Manual on CD-ROM included
Electron absorption P2523100



Counting rate ΔI as a function of absorber thickness.

Tasks:

- The β -counting rates are measured as a function of the absorber thickness using different absorbing materials such as aluminium (AL), glass (GL), hard paper (HP), and typing paper (TP).
- The attenuation coefficients are evaluated for the four absorbing materials and plotted as a function of the density.