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Instrumentation of I.R.

(1) Radiation Source

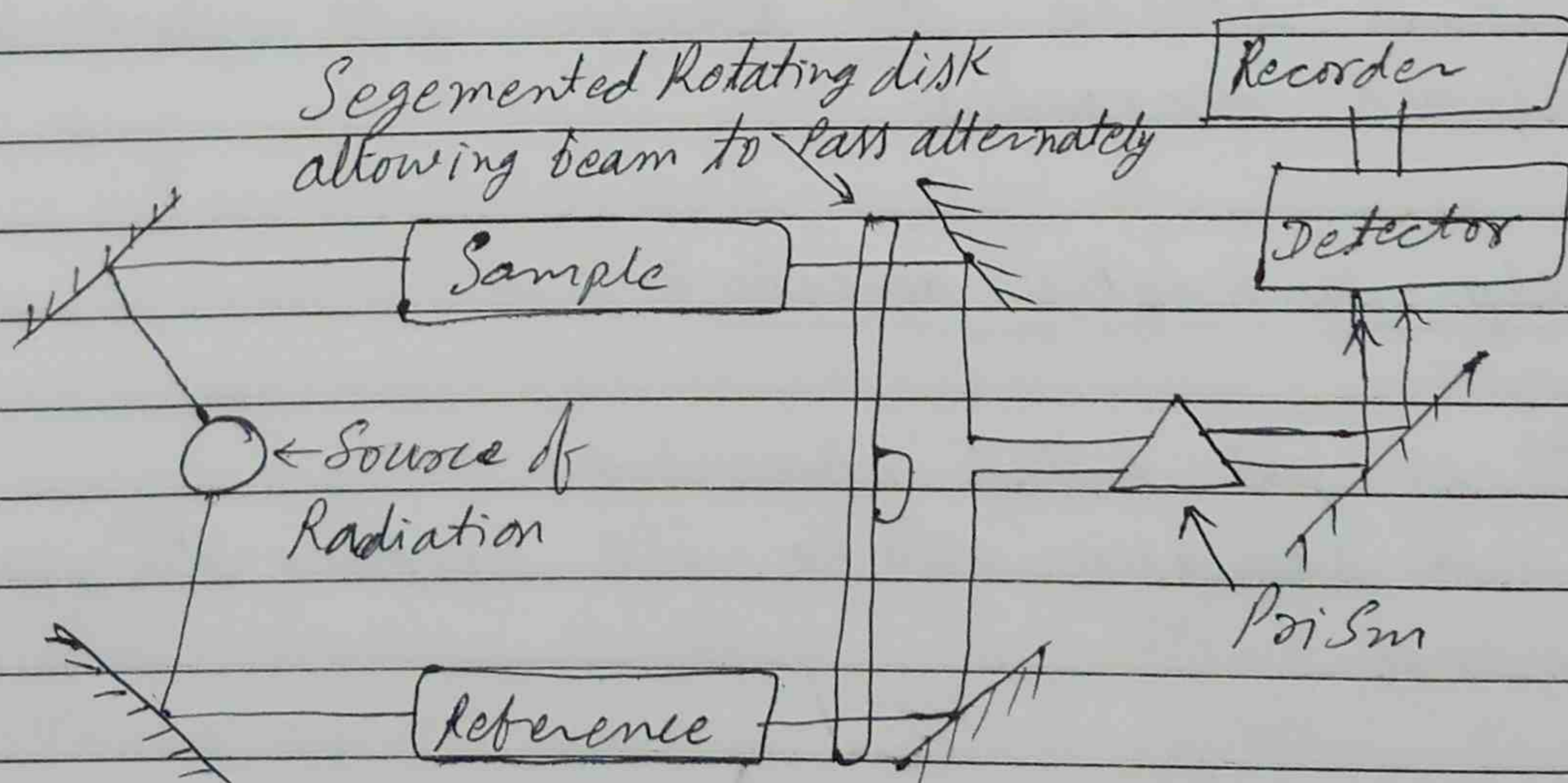
- (a) Nernst glower
- (b) GLOBAR (silicon carbide rod)
- (c) Nichrome wire

(2) Monochromator

- (a) Prism
- (b) Grating

(3) Cuvette

made up of Alkali halide (eg + NaCl)



(4) Detectors

- (a) Thermocouple

made up of two metal wires of different semiconductor material with high thermoelectric efficiency.

(b) Bolometer

It is a thin foil of metal conductor. As IR radiations strike to its surface its temperature increases that causes to changes in electrical resistance. ~~than~~

Change in electrical resistance causes a current flow through the galvanometer and that is proportional to the radiations falling on the detector.

(c) Thermistor

It is made up of fused metal oxide.

When the temperature increases as a result of radiations strike its surface its electrical resistance decreases.

(d) Galy pneumatic detector

It is a gas filled chamber.

When radiation strike its surface its pressure increases.

(e) Pyroelectric detector

It contains a thin coating of pyro-electric material e.g. Triglycerine sulphate.

When radiations strike surface of detector there is a change in polarization that produces an electrical signal. e.g. ~~O-phenol~~ photo-phenone.