

Al-Mustaqbal University College
Department of Medical Physics
The Fourth Stage
First Course



Radiation Protection

LECTURE SEVEN

A Radiation Dosimeter

Detectors for Radiation Protection, Radiation
Accidents

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LECTURE SEVEN : A Radiation Dosimeter

- ❖ One : Film badge
- ❖ Two : Thermo-luminescent dosimeter (TLD)
- ❖ Three : Optically stimulated luminescent (OSL) dosimeter
- ❖ Four : Pocket dosimeter (PD)

A radiation dosimeter : It is a device that measures dose absorption of external ionizing radiation.

There are four major types of monitoring devices in use today are :-

One : Film badge

Film badge features

- 1) It is used as a personnel monitor device for X- and gamma radiation and charged particles
- 2) It consists of i) photographic film and ii) film holder.
- 3) The film holder contains various filters (e.g. lead, tin, aluminum, plastic).
- 4) Radiation passing through the filters will produce a density distribution on the film from which the energy range and type of the radiation can be determined.
- 5) The effect of radiation exposure is a darkening of the film, and the amount of darkening is proportional to the dose absorbed by the film.



Film badge