

Photovoltaic cell: B.Sc. Part-2

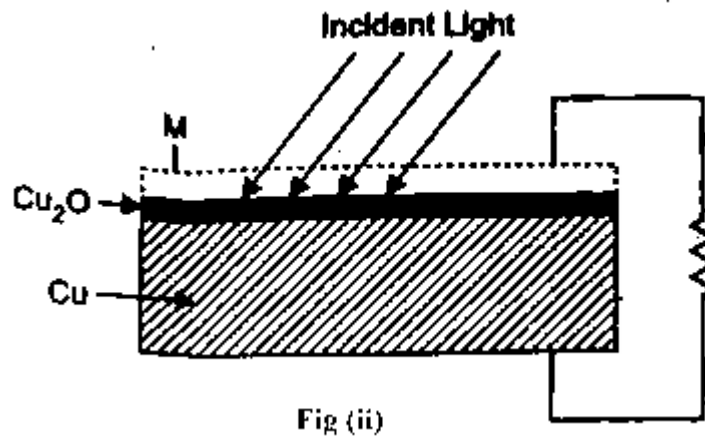
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Photo-voltaic cell :



It consists of a copper plate covered with a thin layer of cuprous oxide (Cu₂O) on the surface of which is coated a metal grid M (or a thin transparent film of metal such as iron, gold) which maintains electrical contact with the oxide and the same time allows the incident light to fall on it. When light falls on the oxide, the electrons which are emitted probably from the boundary between the metal grid and oxide, flow from oxide to copper. Thus a potential difference is established between the metal film and copper plate. If the circuit is completed through a low resistance R, a current flows which is proportional to the intensity of incident light.

The advantages of these cells as (i) no external source of *e.m.f.* is required and the cell generates its own *e.m.f.* (ii) the response of such a cell to lights of different wavelength is practically the same as that of eye these cells are used as exposure meters in photography and in portable illumination meters.