

## Practicumwerkblad O Fotocel

Bron: *Nuffield Revised A-Level* (1986)

### L2b Simple photoelectric cell using magnesium ribbon

Picoammeter  
Cell holder with four cells  
Ultra-violet lamp  
Magnesium ribbon 100 mm long  
Glass plate about 25 cm square  
Wire gauze, 70 mm x 60 mm, e.g. 20 mesh copper  
Retort stand base, rod, boss, and clamp  
Crocodile clip  
Razor blade  
Leads

*Safety note:* Take care not to look directly at the ultra-violet lamp.

The magnesium ribbon must be scraped clean with the razor blade before one end of it is put into the meter's input socket. The gauze is used to make a cylinder around, *but not touching* the ribbon.

You should be able to show that a current flows between the ribbon and the gauze when ultra-violet light falls on the clean magnesium surface. If the current is due to movement of negatively charged electrons which way are they travelling?

What happens if you put a sheet of glass between the lamp and the 'photocell'? Explain the effect.

You may be able to experiment with other metals in place of magnesium.

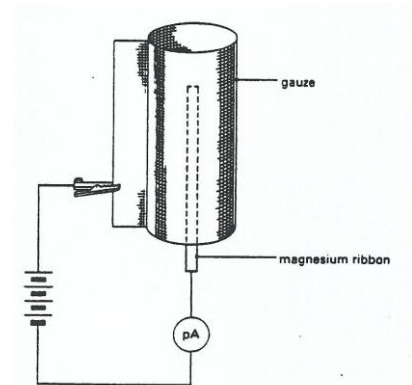


Figure L20  
Simple photoelectric cell.