

Planck's "quantum of action" from the photoelectric effect (line separation by interference filters) 5.1.04-01/05



- What you can learn about ...
- External photoelectric effect
 - Work function
 - Absorption
 - Photon energy
 - Anode
 - Cathode

Principle:

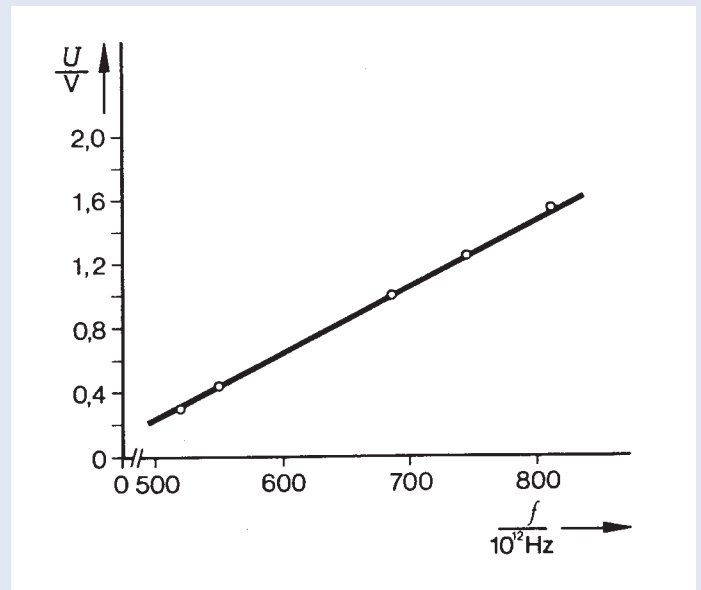
A photo-cell is illuminated with light of different wavelengths. Planck's quantum of action, or Planck's constant (h), is determined from the photoelectric voltages measured.

Set-up of experiment P2510405 with electrometer

What you need:

| | | | |
|--|----------|---|---|
| Experiment P2510405 with electrometer | | | |
| Experiment P2510401 with amplifier | | | |
| Photocell, for h detection, with housing | 06778.00 | 1 | 1 |
| Interference filters, set of 3 | 08461.00 | 1 | 1 |
| Interference filters, set of 2 | 08463.00 | 1 | 1 |
| Experiment lamp 6 | 11615.05 | 1 | 1 |
| Spectral lamp Hg 100, pico 9 base | 08120.14 | 1 | 1 |
| Power supply for spectral lamps | 13662.97 | 1 | 1 |
| Universal measuring amplifier | 13626.93 | 1 | |
| Digital multimeter 2010 | 07128.00 | 1 | 1 |
| Screened cable, BNC, $l = 30$ cm | 07542.10 | 1 | 1 |
| Connecting cable, 4 mm plug, 32 A, red, $l = 25$ cm | 07360.01 | 1 | 1 |
| Connecting cable, 4 mm plug, 32 A, blue, $l = 25$ cm | 07360.04 | 1 | 2 |
| Electrometer Amplifier | 13621.00 | 1 | |
| Adapter BNC socket/4 mm plug pair | 07542.27 | 1 | |
| Power supply 12V AC/500 mA | 11074.93 | 1 | |

Complete Equipment Set, Manual on CD-ROM included
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Voltage of the photo-cell as a function of the frequency of the irradiated light.

Tasks:

To determine Planck's quantum of action from the photoelectric voltages measured at different wavelengths.