



(KTXFI2EBNF) Physics II. Practice

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Planck Radiation Law I

- ▶ The Planck Radiation Law can be expressed mathematically as follows:

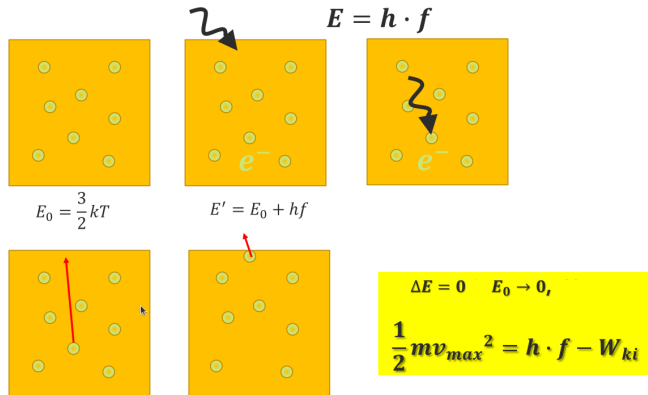
$$E(f, T) = \frac{8\pi hf^3}{c^3} \frac{1}{e^{\frac{hf}{kT}} - 1},$$

and

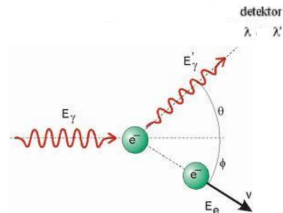
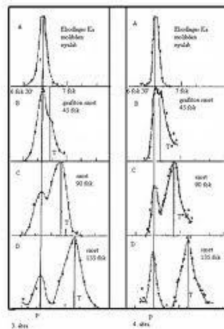
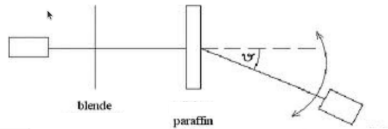
$$E(\lambda, T) = \frac{8\pi ch}{\lambda^5} \frac{1}{e^{\frac{hc}{\lambda kT}} - 1},$$

where c [m/s] is the speed of light in vacuum, f [1/s] is the frequency of the radiation, λ [m] is the wavelength, k is the Boltzmann constant, T [K] is the absolute temperature, and h is the Planck constant.

The Photoelectric Effect - Nobel Prize, Albert EINSTEIN, 1905



Compton Scattering I



Compton-formula:

$$\Delta\lambda = \frac{h}{m_0c} \cdot (1 - \cos\theta)$$

$$\lambda_c = \frac{h}{m_0c}$$

Exercises I

- ▶ See other documents
- ▶ Photoelectric Effect
- ▶ Compton Scattering
- ▶ etc.

The End

Thank you for your attention!