Wiensches Verschiebungsgesetz

$$\rho(\nu)\,\mathrm{d}\nu = \frac{8\pi h\nu^3}{c^3}\,\frac{\mathrm{d}\nu}{\mathrm{e}^{\frac{h\nu}{k_\mathrm{B}T}}-1}$$

a)

b)

Photoeffekt

$$W = 2.9\ \mathrm{eV}$$

a) $E > \underline{W = 2.9\ \mathrm{eV}}$

b) $E = hf; \quad \lambda = \frac{c}{f}$

$\lambda = \frac{ch}{E} = \underline{4.28 \times 10^{-7}\ \mathrm{m}}$

c) $\lambda = 400\ \mathrm{nm}; \quad I = 1\ \mathrm{mA}$

d)

e)

f)

Zerfließen eines Gauß-Pakets

$$\psi(x,t) = \frac{\sqrt{a}}{(2\pi)^{3/4}} \int\limits_{-\infty}^{\infty} \exp\left(-\frac{a^2}{4}(k-k_0)^2\right) \exp\left(i\,(kx - \omega(k)t)\right) \mathrm{d}k$$

a)

b)

c)