

I A3

$$\lambda_b = 436 \text{ nm} = 436 \cdot 10^{-9} \text{ m}$$

$$U_b = 1,05 \text{ V}$$

$$\lambda_g = 578 \text{ nm} = 578 \cdot 10^{-9} \text{ m}$$

$$U_g = 0,4 \text{ V}$$

ges.: h

W_A

f_g

Lös.: $C = 2 \cdot f$

$$\Rightarrow f = \frac{c}{\lambda}$$

$$f_b = \frac{3 \cdot 10^8 \frac{\text{m}}{\text{s}}}{436 \cdot 10^{-9} \text{ m}}$$

$$f_b = 6,88 \cdot 10^{14} \text{ s}^{-1}$$

$$f_g = \frac{3 \cdot 10^8 \frac{\text{m}}{\text{s}}}{578 \cdot 10^{-9} \text{ m}}$$

$$f_g = 5,19 \cdot 10^{14} \text{ s}^{-1}$$

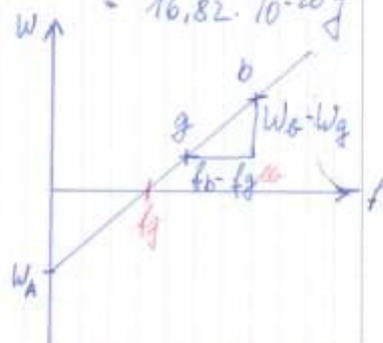
$$W_A = W_{\text{kin}}$$

$$eU = W_{\text{kin}} = E_{\text{kin}}$$

$$E_b = 1,602 \cdot 10^{-19} \text{ As} \cdot 1,05 \text{ V}$$

$$E_b = 1,682 \cdot 10^{-19} \text{ J}$$

$$= 16,82 \cdot 10^{-20} \text{ J}$$



$$E_g = 1,602 \cdot 10^{-19} \text{ As} \cdot 0,4 \text{ V}$$

$$E_g = 6,408 \cdot 10^{-20} \text{ J}$$

Ausgang m: $m = \frac{W_b - W_g}{f_b - f_g}$

$$m = \frac{(16,82 - 6,41) \cdot 10^{-20} \text{ J}}{(6,88 - 5,19) \cdot 10^{14} \text{ s}^{-1}} = \frac{1,041 \cdot 10^{-19} \text{ J}}{1,69 \cdot 10^{14} \text{ s}^{-1}}$$

$$m = 6,16 \cdot 10^{-34} \text{ Js} \Rightarrow h_{\text{exp}}$$

$$\frac{h_{\text{exp}}}{h} = \frac{6,16 \cdot 10^{-34} \text{ Js}}{6,626 \cdot 10^{-34} \text{ Js}} = 92,97\% \rightarrow 7\% \text{ Abw.}$$

$0 = W_{\text{kin}} = hf - W_A$
 $W_{\text{kin}} = hf - W_A$
 $hf = \frac{W_{\text{kin}}}{h} + W_A$

$$W_{\text{kin}} = h \cdot f - W_A$$

$$W_A = W_{\text{kin}} - h \cdot f$$

$$W_A = 1,682 \cdot 10^{-19} \text{ J} - 6,626 \cdot 10^{-34} \text{ Js} \cdot 6,88 \cdot 10^{14} \text{ s}^{-1}$$

$$W_A = -2,876 \cdot 10^{-19} \text{ J} \approx 28,8 \cdot 10^{-20} \text{ J}$$

$$f_g = \frac{W_{\text{kin}}}{h}$$

$$f_g = \frac{28,8 \cdot 10^{-20} \text{ J}}{6,626 \cdot 10^{-34} \text{ Js}}$$

$$f_g = 4,34 \cdot 10^{14} \text{ s}^{-1}$$