

Mesa 2

Examen 1 Física Electronica

D 27

M 01

A 2023

Scribe

① $\lambda_{max} = 2.898 \times 10^{-3} \text{ m K}$

$\lambda_{max} = \frac{2.898 \times 10^{-3} \text{ m K}}{323.0 \text{ K}} = 8.95 \times 10^{-6} \text{ m}$

② Procesador de la laptop

$\lambda_{max} = \frac{2.898 \times 10^{-3} \text{ m K}}{30.000 \text{ K}} = 9.66 \times 10^{-8} \text{ m}$

$E = \frac{1240}{9.66 \times 10^{-8}} = 1.2836 \text{ eV}$

③ Metal

$\phi_m \text{ (eV)}$

λ_c

Litio

2.30 eV

539.13 nm

Berilio

3.96 eV

317.948 nm

Mercurio

4.50 eV

275.555 nm

④

$\lambda_1 = \lambda_0 + \frac{h}{m_e c} (1 - \cos(\theta))$

$\lambda_1 = 1.54106 + \frac{6.626 \times 10^{-34} \text{ J s}}{(9.104 \times 10^{-31} \text{ kg})(3 \times 10^8 \text{ m/s})} \cdot (1 - \cos(37^\circ)) = 1.54 \times 10^{-10} \text{ m}$

$f = \frac{c}{\lambda} = \frac{3 \times 10^8 \text{ m/s}}{1.54547 \times 10^{-10} \text{ m}} = 1.94115 \times 10^{18} \text{ s}^{-1}$

$E = \frac{1240}{1.54547 \times 10^{-10} \text{ m}} = 8.0235 \times 10^{17} \text{ eV}$

Se necesitan dos o mas ondas que se superpongan creando un patron de interferencia