M. Hasyim Abdillah P. (1101191095)

1. $Al_x Ga_{1-x} As$; $x = 0,07$

$E_g = 1,424 + 1,266x + 0,266x^2$

$E_g = 1,424 + 1,266 \cdot 0,07 + 0,266 \cdot (0,07)^2$

$E_g = 1,514\ eV$

$\lambda = \frac{1,240}{E_g} = \frac{1,240}{1,514} = 0,819\ \mu m = 819\ nm$

2. $In_{1-x} Ga_x As_y P_{1-y}$, $x = 0,26$

$y = 2,20x = 2,20 \cdot 0,26 = 0,572$

$E_g = 1,35 - 0,72y + 0,12y^2$

$E_g = 1,35 - 0,72 \cdot 0,572 + 0,12 \cdot 0,572^2$

$E_g = 0,977\ eV$

$\lambda = \frac{1,240}{E_g} = \frac{1,240}{0,977} = 1,269\ \mu m$