Answer on Question 48023, Physics, Electrodynamics

Question:

What is the wavelength of light in nm if the light has a frequency of $6.23 \times 10^{14} Hz$?

Solution:

For the electromagnetic waves, frequency has an inverse relationship to the wavelength λ:

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

where f is frequency, c is the speed of light in vacuum and λ is wavelength.

So, from this formula we can find the wavelength λ:

$$\lambda = \frac{c}{f} = \frac{3 \times 10^8 \frac{m}{s}}{6.23 \times 10^{14} Hz} = 481.5 nm$$

Answer:

$\lambda = 481.5 nm$