

Marks
4

- Moseley discovered experimentally in 1913 that the atomic number, Z , of an element is inversely proportional to the square root of the wavelength, λ , of fluorescent X-rays emitted when an electron drops from the $n = 2$ to the $n = 1$ shell.

$$i.e. \quad \frac{1}{\sqrt{\lambda}} = kZ$$

If iron emits X-rays of 1.937 \AA when a $2s$ electron drops back to the $1s$ shell, determine the identity of the elements contained in an alloy found to emit the same type of X-rays at 1.435 \AA and 1.541 \AA ?

Answer: