Answer on Question #53706 – Chemistry – General chemistry

Question:

The binding energy of electrons in a metal is 185 kJ/mol. Find the threshold frequency of the metal.

Answer:

The threshold frequency can be calculated according to the equation:

$v = E/h$, where E – the energy of electrons per atom and

h – the Plank constant which equals 6.626×10^{-34} Js

Energy per atom is of E(per mole)/N, where N- the Avogadro constant.

Thus, $v = 185\ 000$ J/ $(6.02 \times 10^{23} \times 6.626 \times 10^{-34}$ Js) **= 4638 ×10^{11} Hz**