

$$\left\{ \begin{array}{l} 2\pi r = n\lambda \\ v = \frac{h}{m\lambda} \\ kr = \frac{mv^2}{r} \end{array} \right.$$

התנאים הם

הם

$$\frac{kn\lambda}{2\pi} = \frac{m \left( \frac{h}{m\lambda} \right)^2}{\left( \frac{n\lambda}{2\pi} \right)}$$

$$\Rightarrow \frac{kn\lambda}{2\pi} = \frac{2\pi h^2}{mn\lambda^3}$$

$$\Rightarrow \lambda^n = \frac{h^2 (2\pi)^2}{mkn^2}$$

$$E = \cancel{k} r^2 \quad \left( \frac{1}{2}mv^2 = \frac{1}{2}kr^2 \right) \text{ נמצא, נציב}$$

$$= \cancel{k} \frac{n^2 \lambda^2}{(2\pi)^2} = \cancel{k} \frac{n^2 h (2\pi)}{(2\pi)^2 \sqrt{mk} n}$$

$$= \hbar \sqrt{\frac{k}{m}} n$$