ELECTRON PRECESSION AND FREQUENCY UNDER INFLUENCE OF AN APPLIED MAGNETIC FIELD

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The ratio of the energies of an electron with and without an applied external magnetic field B is 2Pi x 10^{-7} x 137.036 which depicts precession

Larmor frequency & precession solved

$$\omega = 2u_e B\frac{2\pi}{h} = 2(\frac{h}{2\pi}\times\frac{e}{2m_e})B\frac{2\pi}{h}$$

$$u_e = 9.274009408\times10^{-24} J/Tesla$$

$$u_e Magneton$$

$$B = 60487.75593 Tesla$$

$$\omega = \frac{e}{m_e}B = \frac{e}{m_e}\times\frac{I}{r_e} = \frac{e}{e^2}\times\frac{e}{t}[where\Omega = \frac{I}{m_e} = 1.87\times10^{27}\Omega]$$

$$\omega = \frac{1}{t} = f = 1.063870815\times10^{16} Hz[angular, f]$$

$$Larmor, f = \frac{\omega}{2\pi} = 27.99249144\ MHz[1Tesla]$$

$$E = hf = 6.6260693\times10^{-34}\times1.063870815\times10^{16}$$

$$E = 7.049281746\times10^{-18} J$$

Electron Precession
Under Tesla Influence

$$E = 7.049281746\times10^{-18} J$$

$$E = mc^2$$

$$m = 7.84338373\times10^{-35} kg$$

$$\frac{m}{m_e} = \frac{7.84338373\times10^{-35}}{9.1093826\times10^{-31}} = 2\pi\times10^{-7}\times137.036$$

$$E = mc^2 = kT$$

$$T = 511keV$$

Conclusions & Consequences

1. The Larmor angular frequency *f* =28 MHz experimentally measured for an electron is due to the magnetic field B of 1 Tesla strength.
2. The angular frequency *f* =1.063870815 x 10^{16} Hz for an electron is due to the magnetic field B of 60487.75593 Tesla strength.
3. The ratio of the energies of an electron with and without an applied external magnetic field B is 2Pi x 10^{-7} x 137.036 which depicts precession.
4. Temperature of an electron is 511 kilo electron volts. Temperature has units of electron volts.
5. Electrical resistance is constant at 1.87 x 10^{27} Ohms or speed of light by elementary charge.