From this we conclude that, except for dimensionless numerical factors that appear in theoretical developments and of course cannot be determined by dimensional considerations, the coefficients $\frac{\epsilon^2}{c^4}$ and $\frac{R\epsilon^2}{Nc}$ appearing in the [64] equation for ρ must be numerically equal to the coefficients appearing in the Planck (or Wien) radiation formula. Since the above nondeterminable dimensionless numerical factors are hardly likely to essentially change the order of magnitude, we can put, as far as the order of magnitude[1] is concerned

$$\frac{h}{c^3} = \frac{\epsilon^2}{c^4} \quad \text{and} \quad \frac{h}{k} = \frac{R}{N}\frac{\epsilon^2}{c} \,, \qquad [65]$$

hence

$$h = \frac{\epsilon^2}{c} \quad \text{and} \quad k = \frac{N}{R} \,.$$

It is the second of these equation which has been used by Mr. Planck to determine the elementary quanta of matter or electricity. Concerning the [66] expression for h, it should be noted that

$$h = 6 \cdot 10^{-27}$$

and

$$\frac{\epsilon^2}{c} = 7 \cdot 10^{-30} \,.$$

This is three decimal places off the mark. But this may be due to the fact [67] that the dimensionless factors are not known.

The most important aspect of this derivation is that it relates the light quantum constant h to the elementary quantum ϵ of electricity. We should remember that the elementary quantum ϵ is an outsider in Maxwell-Lorentz electrodynamics[2]. Outside forces must be enlisted in order to construct the electron in the theory; usually, one introduces a rigid framework [69]

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[1]The Planck formula reads

$$\rho = \frac{8\pi h\nu^3}{c^3} \frac{1}{e^{\frac{h\nu}{kT}} - 1} \,.$$

[2]Cf. Levi-Civita. "Sur le mouvement etc." [On the motion, etc.], *Comptes Rendus* (1907). [68]