

Birth Defect of The Equation $E_{max} = hf - W$

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Abstract Everyone studying photoelectric effect must know this equation

$$E_{max} = hf - W \quad (Eq. 01)$$

where E_{max} is said to represent the maximum kinetic energy that a photoelectron carries when flying across the electrodes, h is the Planck constant, f is the frequency of an incident light, and W is the so-called work function. Based on this equation, a concept called photon, then further called quantum, is firmly rooted in modern physics.

Key Words mathematics, physics

To make Eq. 01 as an expression of a more accurate statement in physics, let us anchor the physical dimension to each term in this equation while all E , h , f and W are restricted to play the role of pure numerical values. Then we have

$$E_{max}(\text{Joule}) = h(\text{Joule} \cdot \text{second}) \times f(\text{Hz}) - W(\text{Joule}) \quad (\text{Eq. } 02)$$

With term rearrangement, Eq. 02 lets us have

$$E_{max}(\text{Joule}) + W(\text{Joule}) = h(\text{Joule} \cdot \text{second}) \times f(\text{Hz})$$

$$(E_{max} + W)(\text{Joule}) = h(\text{Joule} \cdot \text{second}) \times f\left(\frac{\text{periods}}{\text{second}}\right)$$

$$(E_{max} + W)(\text{Joule}) = h \times f(\text{Joule} \cdot \text{periods}) \quad (\text{Eq. } 03)$$

The equal sign in Eq. 03 must bring out $(E_{max} + W)$ and $(h \times f)$ as two equal numerical values and enable them to cancel out each other. Subsequently Eq. 03 can end up as

$$\text{Joule} = \text{Joule} \cdot \text{periods} \quad (\text{Eq. } 04)$$

or further

$$1 = \text{period}(s) \quad (\text{Eq. } 05)$$

EQ. 05 can earn absolutely no legitimacy as an expression in either the realm of mathematics or the realm of physics. So, Eq. 01 is no equation of any kind but just a nonsensical jumble of letters and signs.

Sadly, ever since the appearance of the erroneous mathematical work of the theory of special relativity [1] and the concept of photon, modern physics leads us to have entered an era of competition in fairy tale imaginations.

Reference: [1] Speed of Light =0, —So “Proven” by Special Relativity, by Cameron Rebigol, <https://www.gsjournal.net/Science-Journals/Research%20Papers/View/8040>