5 Evidences that Shows the Speed of Photon Is 3.3 C

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In this paper, we will introduce some reasons that show the actual and true speed of photons is 3.3 C, not C. These five reasons are as follows:

1. **Calculation of the wave-like speed of photons**

In the article "New Discoveries About the Speed of Electromagnetic Waves 2024 Part B", by Saleh Research Group had calculated the wave-like speed of photons, where we have proved that the photon must have a speed of 3.3 C.

2. **University of Michigan and MIT experiments**

Drawing upon the experiments conducted at the University of Michigan and MIT, the energy formulation for photons at exceedingly short distances, specifically at time $t = \epsilon$ reveals a discrepancy with the perpetually held Planck relation. If the photon speed is "C", the calculated energy ($E_p = m_p C^2$) is 1000% greater (ten times) than the experimental values – or, put another way, ten times the energy of a photon travelling at the speed of light. In light of those mentioned above, a revised energy equation for the photon can be articulated as follows: $V_T = 3.3\,C$.

3. **Max Planck's energy formula**

As we mentioned in previous articles, photons have constant rest mass (m_p) and velocity, and their kinetic energy equation can be written as follows:

$$E = \frac{1}{2} m_p V^2$$

On the other hand, according to Planck's equation, the energy of electromagnetic waves (including the visible light spectrum) is as follows:

$$E_p = hf$$

If the used velocity $V = C$ were correct, the kinetic energy of the photon would be the same as the energy obtained from Planck's experimental equation. But in the article "A New Proof of Photon Velocity (V_T = 3.3 C) Utilising Ever-True Planck Energy Equation and Kinetic Energy Equation in the Universe 2025 Part B" we have proved that if we take into account the value of speed equal to "C", we get a paradox, but with a speed of "3.3 C" the energy value obtained from the kinetic energy equation will be the same as the energy value from Planck's experimental equation.

4. **Young's double-slit experiment**

Emitted photon motion is wave-like as Young's double-slit experiment has been demonstrated. That must be because of its source motion. The path of a photon emitted from an electron

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orbiting the atomic nucleus and spinning on its own axis is the sum of a projectile and two rotational motions. Therefore, its total velocity is also the sum of these velocities, which is equal to: $V_T = 3.3\ C$

5. Motion and generation model of photons

The birthplace of a photon is an electron orbiting around the atomic nucleus. When we induce energy changes in the electron, exciting an electron, it emits a photon. Therefore, the photon undergoes projectile motion. However, the electron rotates at a speed close to the speed of light around the nucleus, and the combination of this motion with the projectile motion of the photon results in the released photon having both rotational and linear motion simultaneously. The combination of these two paths creates a helical path. The true speed of the photon is, in fact, the speed in this helical path, which can be calculated.

References:

[1] Chandler, David L. “Breaking the Law, at the Nanoscale.” MIT News | Massachusetts Institute of Technology, news.mit.edu/2009/heat-0729. Accessed 29 July 2009.

[2] Thompson, Dakotah, et al. "Hundred-fold enhancement in far-field radiative heat transfer over the blackbody limit." *Nature* 561.7722 (2018): 216-221.

[3] Young, Thomas. "II. The Bakerian Lecture. On the theory of light and colours." *Philosophical transactions of the Royal Society of London* 92 (1802): 12-48.

[4] Planck, Max. "Zur theorie des gesetzes der energieverteilung im normalspektrum." *Berlin* (1900): 237-245.

[5] Planck, Max. *Über das gesetz der energieverteilung im normalspektrum*. Vieweg+ Teubner Verlag, 1978.

[6] Saleh, Gh. "New Proof of Photon Velocity ($V_T = 3.3\ C$) Utilising Mathematical Equations, Physical Laws and the Experiments of MIT and Michigan University in the Universe 2025 Part A." Saleh Theory, 26 Apr. 2025, https://www.saleh-theory.com/article/a-new-proof-of-photon-velocity-vsubtsub-33-c-utilising-mathematical-equations-physical-laws-and-the-experiments-of-mit-and-michigan-university-in-the-universe-2025-part-a

[7] Saleh, Gh. "New Proof of Photon Velocity ($V_T = 3.3\ C$) Utilising Ever-True Planck Energy Equation and Kinetic Energy Equation in the Universe 2025 Part B." Saleh Theory, 03 May 2025, https://www.saleh-theory.com/article/a-new-proof-of-photon-velocity-vsubtsub-33-c-utilising-ever-true-planck-energy-equation-and-kinetic-energy-equation-in-the-universe-2025-part-b

[8] Saleh, Gh. "New Proof of Photon Velocity ($V_T = 3.3\ C$) Utilising the Young's Double-Slit Experiment and the Motional Model of Emitted Photons from Electrons in the Universe 2025 Part C." Saleh Theory, 03 May 2025, https://www.saleh-theory.com/article/a-new-proof-of-photon-velocity-vsubtsub-33-c-utilising-the-youngs-double-slit-experiment-and-the-motional-model-of-emitted-photons-from-electrons-in-the-universe-2025-part-c

[9] Saleh, Gh. ""A New Proof of the Constancy of Photon Mass Using Its Initial Energy." Saleh Theory, 06 Mar. 2025, https://www.saleh-theory.com/article/a-new-proof-of-the-constancy-of-photon-mass-using-its-initial-energy

[10] Saleh, Gh. "New Experiment Under Ordinary Conditions With Common Tools to Verify the Planck's Equation." *Precision Atomic Physics Experiments to Probe for New Physics* (2024): E1.

[11] Saleh, Gh. "Discovery of the Hundred-Year-Old Lost Mathematical and Physical Relationship Between the Classical Kinetic Energy of Photons and Planck's Everlasting Experimental Equation in the Universe (Planck-Saleh Energy Equation)." Saleh Theory, 28 Jun. 2024, https://www.saleh-theory.com/article/discovery-of-the-hundred-year-old-lost-mathematical-and-physical-relationship-between-the-classical-kinetic-energy-of-photons-and-plancks-everlasting-experimental-equation-in-the-universe-planck-saleh-energy-equation

[12] Saleh, Gh. "New Uncomplicated Experiment Under Ordinary Conditions (Time, Place, Sunlight, etc.) With Common Tools (Ordinary Lenses and Thermometers) to Demonstrate and Verify the Planck's Experimental Equation." *Bulletin of the American Physical Society* (2024).

[13] Saleh, Gh. "New Uncomplicated Experiment Under Ordinary Conditions (Time, Place, Sunlight, etc.) With Common Tools (Ordinary Lenses and Thermometers) to Demonstrate and Verify the Planck's Experimental Equation." Saleh Theory, 10 Jul. 2024, https://www.saleh-theory.com/article/new-uncomplicated-experiment-under-ordinary-conditions-time-place-sunlight-etc-with-common-tools-ordinary-lenses-and-thermometers-to-demonstrate-and-verify-the-plancks-experimental-equation

[14] Saleh, Gh. "New Discoveries About the Speed of Electromagnetic Waves 2024 Part A." Saleh Theory, 12 Oct. 2023, https://www.saleh-theory.com/article/new-discoveries-about-the-speed-of-electromagnetic-waves-2024-part-a

[15] Saleh, Gh. "New Discoveries About the Speed of Electromagnetic Waves 2024 Part B." Saleh Theory, 30 Oct. 2023, https://www.saleh-theory.com/article/new-discoveries-about-the-speed-of-electromagnetic-waves-2024-part-b

[16] Saleh, Gh. "New Discoveries About the Speed of Electromagnetic Waves 2024 Part C." Saleh Theory, 06 Nov. 2023, https://www.saleh-theory.com/article/new-discoveries-about-the-speed-of-electromagnetic-waves-2024-part-c

[17] Saleh, Gh. "New, Marvelous and Revolutionary Discoveries About Photon." Saleh Theory, 07 Sep. 2023, https://www.saleh-theory.com/article/new-marvelous-and-revolutionary-discoveries-about-photon

[18] Saleh, Gh. "Photon Could Have the Rest Mass." *2023 International Conference on Artificial Intelligence and Power Engineering (AIPE)*. IEEE, 2023.

[19] Saleh, Gh. "Proving the Helical Motion of the Photon With Ten Reasons." *APS New England Section Fall Meeting Abstracts*. 2023.

[20] Saleh, Gh. "A New Explanation for the Motion of Photon; The Nested Helical Motion." *APS New England Section Fall Meeting Abstracts*. 2023.

[21] Saleh, Gh. "The Helical Motion of Photons; The Proof of Wave-Particle Duality of Photons." *APS Meeting Abstracts*. 2023.

[22] Saleh, Gh. "Proving the rotational motion of the photon using the photon energy equation." *APS Division of Atomic, Molecular and Optical Physics Meeting Abstracts*. Vol. 2023. 2023.

[23] Saleh, Gh. "10 Great Reasons for Helical Motion of Photon." *APS Meeting Abstracts*. 2022.

[24] Saleh, Gh, et al. "3 Dimensional Motion of Photon and Its Energy." *EPJ Web of Conferences*. Vol. 238. EDP Sciences, 2020.

[25] Saleh, Gh, R. Alizadeh, and A. Dalili. "The relationship between the wavelength and evanescent intensity of a wave in optical fiber and the explanation of the structure of Photon as a new atom in Saleh Theory." *International conference on Nanophotonics and Electronics (Nanophotonics2020*. 2020.

[26] Saleh, Gh. "Photon has a Constant Rest Mass!." Saleh Theory, 16 Mar. 2018, https://www.saleh-theory.com/article/photon-has-a-constant-rest-mass

[27] Saleh, Gh. "The Unseen World of Photon." Saleh Theory, 16 Jul. 2017, https://www.saleh-theory.com/article/the-unseen-world-of-photon

[28] Saleh, Gh. "A Revolution in Light Theory." Saleh Theory, 11 Apr. 2017, https://www.saleh-theory.com/article/a-revolution-in-light-theory