

## Theoretical and practical aspects regarding the mass and the negative electrostatic charge of photons

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### *Abstract*

Let us consider that the entire universe is composed of a single hydrogen atom within which the electron is moving around the proton. In this case, according to classical theories of physics, radiation, photons respectively, should be absorbed by the electron. Depending on the number of photons absorbed, the electron radius of rotation around the proton is established. Until now, the principle of photons absorption by electrons and the electron transition to a new energy level, namely to a higher radius of rotation around the proton, is not clarified in physics. This paper aims to demonstrate that radiation, photons respectively, have mass and negative electrostatic charge similar to electrons but infinitely smaller. The experiments which demonstrate this theory are simple: thermal expansion, photoelectric effect and thermonuclear reaction. This paper proposes also a practical method to determine the mass of photons. By measuring the difference in weight between two equal blocks of metal, one cold and one heated to high temperatures, resulting the photons weight. For the accuracy of the measurement, the classical arm of balance will be replaced with a Laser ray arm. By practical demonstration that photons have mass and their corpuscular structure is similar to electrons, can no longer admit the dual character of photons: corpuscles and electromagnetic wave. Being corpuscle with mass, the photon moves at the speed of light in a specified direction.

The electromagnetic waves move in a spherical direction in all space. This demonstrates that the electromagnetic waves represent only an electrostatic, (electric) field vibration surrounding space also in the cosmos.

### *Biography:*

Ioan Rusu is Associate professor at Jouf University, SA. He started his research on Physical chemistry at King Saud University, SA. During his Ph.D. he joined research groups at Cardiff University, United Kingdom. He obtained Ph.D. in 2012, and started his academic career as assistant professor at Jouf University, and promoted to Associate professor in 2019. He has successfully published several papers related to the area of designing new nanomaterials for catalysis applications.

### *Speaker Publications:*

- [1] I. Rusu, The electrostatic model of gravity, AES 2012, Advanced Electromagnetics Symposium, Book of Conference, pg.22, 16-19 April 2012, Paris, France,
- [2] I. Rusu, Researches concerning photons as corpuscles with mass and negative electrostatic charge, ICNRE 2015, 17th International Conference on Nuclear and Radiation Engineering, May, 28-29, 2015, Tokyo, Japan.

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