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Photons - Corpuscles with mass and negative electrostatic charge

Ioan Rusu
Electriva Serv., Romania

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.

According to the theory presented in this paper:

- Photons have a mass infinitely smaller than the electron and different between photons depending on the wavelength of the radiation;
- Photons cannot be absorbed by the electrons and have a negative electrostatic charge;
- That theory is verified by the following phenomena:
- Thermal expansion;
- Photoelectric effect;
- Thermonuclear reaction

ioandanrusu@yahoo.com

Device for optical imaging of biological tissues

Anna A Khachaturova
National Academy of Sciences of Armenia, Republic of Armenia

The idea of our technology (product) is optical screening and imaging of highly scattering and/or absorbing thick media, including biological objects such as human palm and wrist, with spatial resolution and contrast adequate for imaging the bone and vascular structure, showing simple fractures, etc. We offer a device for straightforward optical transmission imaging of biological tissues. The key problems of optical transmission imaging of thick complex biological objects are strong diffusion (scattering) and non-uniform intensity distribution of transmitted signal across the scanned area. These constraints essentially reduce the spatial resolution and uniformity of the overall pattern. We report on implementation of a new approach of signal detection scheme, which relies on synchronization of lock-in amplifier with a temporal step of laser beam discrete scanning. This technique is favorable for preferential detection of abrupt spatial features, increase of contrast and substantial reduction of overall non-uniformity of image brightness. On the other hand, the lock-in detection scheme, being phase-sensitive, helps to some extent to enhance the contribution of least-deflected photons in the recorded signal thus suppressing the diffusion component. We present the results of measurements showing efficiency of the proposed scheme.

annakhachat@mail.ru