The Helical Motion of Photons; The Proof of Wave-Particle Duality of Photons

Gh. Saleh

Saleh Research Centre, Netherlands

Scientists have been studying hard to find out how the light travels from the light source. Some believed that it would probably move in the form of a wave but the others thought that light was actually composed of particles that move in space. Isaac Newton, based on his experiments liked the second theory. But Newton's theory was rejected later. To his theory's rejection, one of the most famous experiments is the one performed by Thomas Young in 1801.

It was true that the photoelectric effect experiment confirmed Planck's quantum theory but created a new problem in the wave theory of light. This experiment can only be justified by considering the light as a particle. A few years later, Einstein for explaining the photoelectric experiment, presented the concept of "wave-particle duality of light".

The reason for not accepting the constant rest-mass for photons and believing in its wave-like state was the famous experiment of Thomas Young. In this experiment, interference patterns are observed and to justify them, they are considered light as a wave. But the question is, why does an Electron whose rest-mass has been proven to be constant also has an interference pattern in Young's double-slit experiment? Therefore, it seems that existence of interference patterns is related to the motion of particle not the nature of it.

Since the electron is the photon-generator and the electron is rotating around itself and around the nucleus, the emitted photon from the electron should have the effect of these rotating motions. So, the photon has a three-dimensional motion, including a transition movement and a rotary motion. And it traverses in a helical trajectory in 3 dimensions. It means the photon rotates around its central axis with a radius of "r" while it is moving. By using this definition, we have wave-particle duality at the same time; a particle that moves wave-like.

www.saleh-theory.com
postmaster@saleh-theory.com