

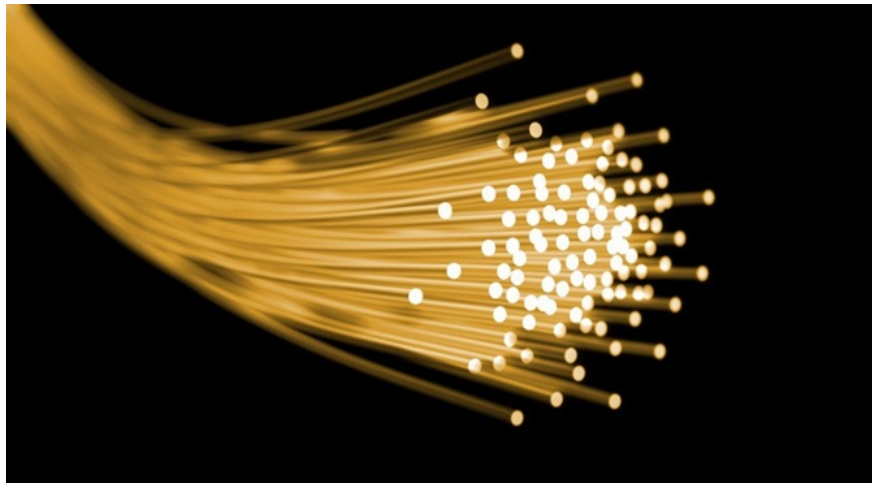
# When you turn off the light in the room, where did the light go?

When you turn off the light in the room, the darkness will cover everything, so where did the light go?

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1. 20 interesting facts about light you may not know
2. Light bulbs all day without electricity from discarded plastic bottles

When a light bulb is turned on, it emits photons scattered in all directions and collides with every object in the room. These objects absorb most of the photons, but also reflect a small part and this helps us see objects in the room. When the light is off, no new photons are emitted and photons already present in the room will be reflected off the object countless times until they are completely absorbed.



According to Scienceabc, light is made up of millions of extremely small particles (these particles are not visible to the naked eye called photons). These are the basic particles that carry all kinds of electromagnetic radiation, including radio waves, ultraviolet rays, microwaves and of course visible light.

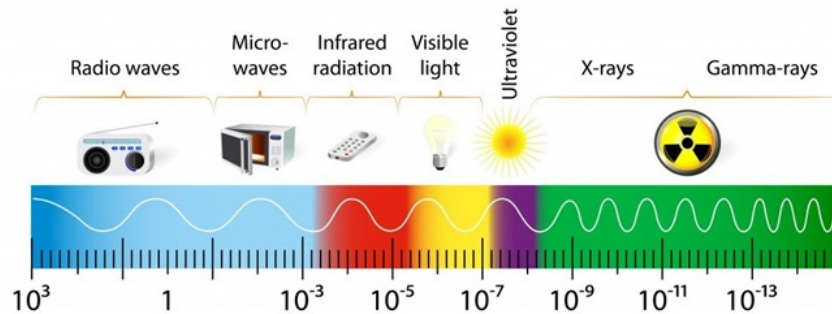
When you enter the room and turn on the light, the room is immediately flooded with light. More specifically, the room is filled with millions and billions of photons, helping us see what's inside the room. However, when you turn off the light, where does the light actually go? What will happen to the billions of photons inside the room? Do they still exist?

Before we get to the answer, we need to clarify some of the following basic issues.

**Photons: Basic particles that carry light**

You probably know that visible light is a type of electromagnetic radiation and is a small component of the electron spectrum - in the same group as radio waves, infrared rays, ultraviolet rays, gamma rays .

## THE ELECTROMAGNETIC SPECTRUM



Photons are the most fundamental particles of any kind of electromagnetic radiation, be it radio waves carrying WiFi signals, microwave waves heating food inside an oven or light to help us see the world around . A photon with a speed of 300,000 km per second in a vacuum (note that the photon rate represents the speed of light).

### How do photons produce light?

A light source (such as a lamp) will emit millions of photons into the surrounding environment when stepped up. When the lamp is placed in the room (ie in a closed space), the photons it emits will affect everything on the path it moves, so it illuminates everything in the room. And this happens in a small, enclosed space.

### Where does Photon go when the light source is turned off?

As long as the light bulb glows, the room will have a continuous supply of photons. In the multitude of photons that touch objects in the room (such as a table), some will be absorbed, while others will be reflected and lose a certain amount of energy in the process. The reflected photons will collide with other objects in the room and lose a little more energy. Basically, a photon will collide with objects until it is completely absorbed by something.



In this way, the room will be illuminated as long as the light is on. However, the moment it is turned off, everything changes quite quickly.

Photons - have been emitted before the lights turn off - continue to collide with objects in the room until fully absorbed. In a fraction of a millisecond, all photons are completely absorbed in the room.

If the light is still on, the photons are absorbed quickly but they are always compensated from the light source so we don't feel the difference. However, when the lamp is turned off, there is no supply of a new photon, the photon is removed by being absorbed by the objects in the room. The energy of absorbed photons is used in heating objects (to a small extent insignificantly) .

All this process, that is, emission of photons by lights, their reflection and absorption from other objects takes place in a fraction of a second. It was so fast that we could not feel the change. That's why a room almost switches to darkness when the light is turned off.

*According to VnReview*

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