The press service of the University of ITMO reported that university experts have developed a unique nanostructure that makes silicon 10 thousand times more efficiently in the absorption and emission of light. This is the most compact photoluminescent source based on silicon from existing ones.

As the researcher Artyom Larin explained, the device generates broadband white light, including all colors of the visible spectrum and part of the infrared range. Such characteristics are especially valuable for optical computing systems, where it is important to work with different wavelengths at the same time.

The development is based on a metapo-surface-an artificial structure made of golden substrate and silicon-gold-valve nanocylinders. It acts as a trap for photons, repeatedly strengthening their interaction with silicon.

It is important that the production of such nanums is possible using standard lithographic methods.