

A versatile luminophore of wide application proposed by scientists from Russia, China and Taiwan

Maxim Molokeev, researcher of Siberian Federal University, as part of an international scientific team, [has taken part](#) in the creation and study of a luminophore of infrared radiation with a wide spectrum of action.



This luminophore can be used in medicine for monitoring the health of patients, for analyzing the quality of products, in agriculture for growing plants, as well as in biosensorics.

“The existing devices with such radiation — halogen lamps, laser diodes and supercontinuum lasers — are large, consume a lot of energy and have low efficiency. In their turn, infrared lamps based on a luminophore with LEDs are small and efficient, but the problem of thermal stability has not been solved in them. Together with partners from the South China University of Technology (Guangzhou, China) and the National Synchrotron Radiation Research Center (Taiwan), we have proposed a unique luminophore that combines all of the listed positive characteristics and, moreover, has good thermal stability,” said Maxim Molokeev, assistant professor at the Basic Department of Physics Solid State and Nanotechnology, School of Engineering Physics and Radioelectronics, Siberian Federal University.



The photo on the left shows a flower captured with a conventional camera in natural light. In the middle and on the right are images of the same flower in infrared illumination from a new LED.

“The image in the middle is taken with a conventional camera that detects nothing in the dark, and the right image is taken with a special infrared camera. It can be seen that our lamp really illuminates the flower in a wide infrared range,” said professor Molokeev..

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