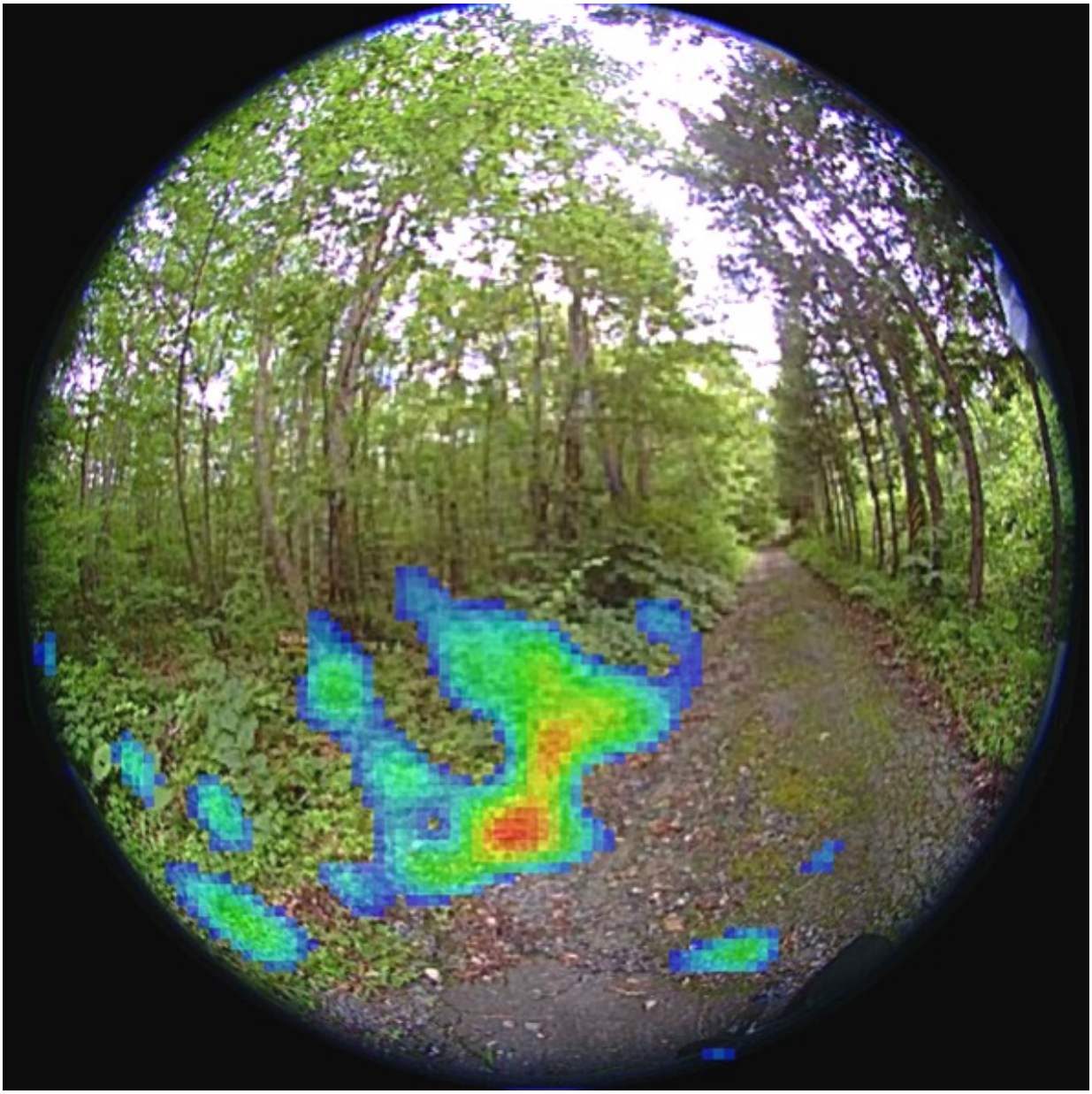
Gamma ray camera may help with Fukushima decontamination

May 20 2015



The new Compton camera incorporates high-accuracy, three-dimensional, gamma ray position measurement technology developed at Waseda University. Credit: Waseda University

Japanese researchers have significantly improved the performance of a gamma ray-imaging "Compton" camera. The new technology has potential applications in scientific research, medical treatment and environmental monitoring, as well as radioactive decontamination work.

Based on a high-sensitivity mobile gamma ray camera released by Hamamatsu Photonics in 2013, the new Compton camera incorporates high-accuracy, three-dimensional, gamma ray position measurement technology developed at Waseda University. Led by Professor Jun Kataoka, the Waseda team improved the original camera's resolution by about two times and enhanced its sensitivity by approximately 70%.

The new technology enables the smooth and accurate visualisation of gamma rays, which are invisible to the human eye, and could be used to help with the removal of radioactive substances from the Fukushima Daiichi nuclear accident.

The Waseda team is now working to make the detector even lighter and smaller: only 500 grams or less in weight and about 10 cubic centimetres in size. Professor Kataoka plans to use the detector to advance research on bio-function dynamics imaging and proton therapy.

Provided by Waseda University

Citation: Gamma ray camera may help with Fukushima decontamination (2015, May 20) retrieved 7 May 2024 from

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