

Abstract Submitted
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Inverse Compton Scattering from Laser Accelerated Quasi-Monoenergetic Electrons¹ YOSHITAKA MORI, GPI, Hamamatsu, Japan, HAJIME KUWABARA, IHI, Yokohama, Japan, KATSUHIRO ISHII, RYOHEI HANAYAMA, GPI, Hamamatsu, Japan, TOSHIYUKI KAWASHIMA, Hamamatsu photonics, hamamatsu, Japan, YONEYOSHI KITAGAWA, GPI, hamamatsu, Japan — The progress of the laser accelerator shows us the possible applications to the industries, such as an inspection source for soft materials like as human bodies, plants foods and medicines. The inverse Compton scattering will realize such a novel inspection system. We demonstrate for the first time that the laser-accelerated mono-energetic electrons inversely scatter the same counter laser beam to the Compton X-ray emissions. A Ti:sapphire laser (500mJ width 150fs) is divided into two beams. Main beam is focused to an edge of a helium gasjet to accelerate electrons to 13 and 22 MeV monoenergies, which inversely scattered the counter laser beam into 6 and 11 keV X-ray emissions in agreement with that calculated from the obtained electron spectra. The scattering is within 30 deg. around the main beam direction.

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