



Contribution ID: 202

Type: Poster

The performance results of the LIA in double pulse mode

Tuesday, 20 June 2017 13:30 (1h 30m)

Linear induction accelerator LIA is designed and developed at the Budker Institute of Nuclear Physics in 2010 year as injector for fullscale radiographic machine. Now it is currently used as independent radiographic X-ray source for testing objects with an optical thickness up to 70 mm lead equivalent. In 2014 year the high-voltage power supply system was upgraded. Accelerator operates in one pulse and in a double-pulse mode – up to 2 MeV. Time delay between two frames can be changed in the range of $2 \div 100$ us with a minimum pitch of 5 ns. Energy spread in each pulse does not exceed $\pm 0.5\%$ [1].

The operation results in single-pulse mode and double-pulse mode are presented. The maximum possible emittance electron beam, allowing to compress beam spot size to about 1 mm on the target, is estimated.

1. D.A. Starostenko, P.V. Logatchev et al. «Status of the LIA-2. Double-pulse mode», ISSN 1531-8567 published in Physics of Particles and Nuclei Letters, December 2016, Volume 13, Issue 7, pp. 962–965. © Pleiades Publishing, Ltd. 2016.

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Session Classification: Poster session II - Particle Beam and Accelerator Technologies

Track Classification: Particle Beam and Accelerator Technologies