

Abstract Submitted  
for the DPP16 Meeting of  
The American Physical Society

**Target optimization for desired X-ray spectra produced by laser plasma accelerated electrons.**<sup>1</sup> MAXIM LOBOK, Center for Fundamental and Applied Research, Dukhov All-Russian Research Institute of Automatics, Moscow, ANDREY BRANTOV, VALERY BYCHENKOV, P N Lebedev Physics Institute, Russian Academy of Sciences, Moscow, Russian Federation — Different regimes of electron acceleration from low-density targets are investigated using three-dimensional numerical simulations. Multiple spatial target density profiles were examined, including laser pre-pulse modified targets. The size of the plasma corona is shown to be one of the main parameters characterizing the temperature and number of hot electrons, which determine the yield of X-ray radiation and its hardness. The generation of X-ray radiation by laser accelerated electrons, which impact the converter target located behind the laser target, was studied. The X-ray spectra were computed using Monte-Carlo simulations.

<sup>1</sup>This work was partially supported by the Russian Foundation for Basic Research 16-02-00088-a.

Maxim Lobok  
Center for Fundamental and Applied Research, Dukhov All-Russian Research Institute of Automatics, Moscow

Date submitted: 14 Jul 2016

Electronic form version 1.4