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Hall-Effect Thruster with Wide Acceleration Zone, Ballistic and Magnetic Beam Focusing OLEKSII GIRKA[1], V. N. Karazin Kharkiv National University, Ukraine; National Fusion Research Institute, Republic of Korea, YULIIA BALKOVA, SERGEY REVA, OLEXANDER BIZYUKOV, V. N. Karazin Kharkiv National University, Ukraine — An efficient, long-life Hall effect thrusters (HET) would be attractive for a wide range of aerospace missions [1], research tasks [2-3] and technological applications [4]. The objective of research is developing focusing system for HET with wide acceleration zone. Previous research [3] showed attractive set of applications. Average ion energy of anode layer thruster was 2 keV, which is high enough for some surface treatment applications. Therefore scheme of Hall-effect thruster with wide acceleration zone, ballistic and magnetic beam focusing is proposed. Magnetic field distribution in reversed magnetic focusing system and trajectories of Hydrogen and Argon ions with energy of 800 eV in inhomogeneous magnetic field are calculated, optimal values of currents in magnetic field coils are determined. Technical documentation on source manufacturing is completed and further experimental testing is planned. [1] S. Mazouffre. Plasma Sources Sci. Technol. 25 (2016) 033002 (27pp) [2] J. Kurzyna, et. al. Laser and Particle Beams, 36(1) (2018), 105-114 [3] O. Girka, et. al. Rev. Sci. Instr. 83 (2012), 083501 [4] O. Girka, et. al. Nukleonika, 60(2) (2015), 327-330

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