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5P34 - PULSE POWER SYSTEM

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Abstract
This Article is a continuation of the research of Pulse Power Systems [1], [2]. Current features as well as complications of Electromagnetic Launchers (EL) of projectile are well known. The low efficiency of EL prompted the research for a fundamentally new type of devices, as well as a new type of electromagnetic energy sources. This Article is considering a new type of EL combined with modified Bitter Magnet and High-Frequency Pulse energy generator as a power source for sections of EL. Devices are protected by international applications for inventions. The absence of galvanic contact between the accelerated projectile and the EL barrel resolving the issue of friction and the heating. Also Sectional design of the EL resolving the issue of useless accumulation of electromagnetic energy in the barrel. Using modified Bitter Magnet in EL sections allows to create magnetic fields tens of times higher density than in a well known EL, which increases the electromagnetic pressure by hundreds of times to accelerate the projectile. This Article illustrates EL in greater details along with test results of the EL prototype.

[1] P.V. Vassioukevitch "Iron-Core Compulsator", Proc. of 9th IEEE Pulsed Power Conference, Albuquerque, New Mexico USA, June 21-23, 1993, Paper 224-227.
[2] P.V. Vassioukevitch "Segmented Electromagnetic Launcher", Proc. of 10th IEEE Pulsed Power Conference, Albuquerque, New Mexico USA, July 10-13, 1995, Paper 1273-1277.

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