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IMPROVING THE EFFICIENCY OF HIGH-VOLTAGE ELECTRIC DISCHARGE INSTALLATIONS WHICH USE EXOTHERMAL DISPERSED MEDIA

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Authors

Vovchenko O.I.*, **Demydenko L. Yu.****, **Blashchenko O.D.*****, **Starkov I.M.******

Institute of Pulse Processes and Technologies National Academy of Sciences of Ukraine,
Bohoiavlenskii Avenue, 43-A, Mykolaiv, 54018, Ukraine,
e-mail: dppte@iippt.com.ua , iippt@iippt.com.ua

* ORCID ID : <http://orcid.org/0000-0002-5837-2208>

** ORCID ID : <http://orcid.org/0000-0003-3045-0419>

*** ORCID ID : <http://orcid.org/0000-0002-1778-5065>

**** ORCID ID : <http://orcid.org/0000-0002-9740-3468>

Abstract

The article shows that the use of high-voltage electrical discharge installations, instead of traditional single-circuit capacitive double-circuit pulse generators, as well as control of the energy accumulated in them (by changing the capacitances and / or voltages of their charge) and the moment of energy input into the interelectrode gap filled with exothermic dispersed medium, allows to increase more than 1.5 times the energy efficiency of such facilities. This approach is especially effective when using exothermic medium containing aluminum with different dispersity as a fuel. In this case, the increase in the energy characteristics of the electric-discharge installations is ensured by increasing the duration of the exothermic processes. Moreover, one of the most important conditions for increasing the energy characteristics of such facilities is to maintain the pressure in the channel above the critical

value (~ 22.5 MPa), which is necessary for the flow of self-sustaining exothermic reactions. References 10, figures 5.

Key words: electric discharge, high-voltage installation, interelectrode gap, controlled introduction of energy, channel of discharge, exothermic medium, pressure, energy efficiency.

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