Contribution ID: **20** Type: **Poster Presentation**

DEVELOPMENT OF HIGH-POWER GAS DISCHARGE AND ELECTRONIC VACUUM DEVICES FOR PULSED ELECTROPHYSIC. CURRENT STATUS AND PROSPECTS

Friday 8 July 2016 13:50 (20 minutes)

In the paper the most recent results of research and development efforts made by Pulsed Technologies ltd are presented. Design and essential characteristics of more than 36 types of high-power high-voltage switches TDI- and TPI-thyratrons (pseudospark switches) [1], TGI- thyratrons at 250 MW pulse and 0.5 MW average power, spark gaps, as well as X-ray tubes of the new generation are described.
High power pulse thyratrons contribute the major part of production volume of our company. Thyratrons used to be the most important switches for Pulsed Power applications, as indicator of which serves the fact that from volume 1 (1950) to volume 10 the titles of IEEE International Power Modulator Conferences involved a phrase "Hydrogen Thyratron". Currently, solid state switches keep replacing plasma switches in the most of pulsed power applications. However, there are some important niches in which thyratrons and pseudospark switches are still out of competition.
The report contains a list of publications and examples of emerging applications of these switches in the innovative equipment of leading world institutions, including high-power Pulsed Electrophysics, colliders [2] and accelerators of various types [3], in medical equipment, industry and etc..

1. V.D. Bochkov, Y.D. Korolev, "Pulsed gas-discharge switching devices", in Encyclopedia of Low-Temperature Plasma, V.E. Fortov, Ed. An introductory Book 4, Section № XI.6, Moscow, "Science", 2000, pp.446-459.
2. J. Slough, C. Pihl, V.D. Bochkov, et al., «Prospective Pulsed Power Applications Of Pseudospark Switches», Proc. 17th IEEE International Pulsed Power Conference, Washington DC, pp. 255-259, 2009.
3. A.V. Akimov, P.V. Logachev, V.D. Bochkov, et al, «Application of TPI-thyratrons in a Double-pulse Mode Power Modulator with Inductive-Resistive Load», IEEE Transactions on Dielectrics and Electrical Insulation, vol. 17, Issue 3, pp. 718-722, June 2010.

Primary author: Dr BOCHKOV, Victor (Pulsed Technologies ltd)

Co-authors: Mr BOCHKOV, Dmitriy (Pulsed Technologies Ltd.); Mr VASILIEV, Igor (Pulsed Technologies ltd); Mr PANOV, Peter (Pulsed Technologies ltd.); Mr TERYOSHIN, Vasiliy (Pulsed Technologies ltd); Mr DYAGILEV, Vladimir (Pulsed Technologies ltd); Mr USHICH, Vladimir (Pulsed Technologies ltd)

Presenters: Mr BOCHKOV, Dmitriy (Pulsed Technologies Ltd.); Dr BOCHKOV, Victor (Pulsed Technologies ltd)

Session Classification: Poster 3-A

Track Classification: Plasmas, Discharges, and Electromagnetic Phenomena