

STUDYING OF PARAMETERS OF MIDDLE FREQUENCY PULSE ATMOSPHERIC PRESSURE DISCHARGE IN ARGON

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In this work, we studied a low-current discharge (up to 1 A) at atmospheric pressure in the pulsed power supply mode with a frequency of 20 to 100 kHz in an argon flow with a flow rate of up to 3 L/s. An increase in the pulse repetition rate leads to a decrease in the discharge initiation voltage and has little effect on the burning voltage (Fig. 1). This experimental fact is based on the assumption of an increase in the concentration of the residual plasma and excited argon and nitrogen molecules in the intervals between pulses. This assumption, in turn, is confirmed by the results of studying the optical emission of the discharge plasma.

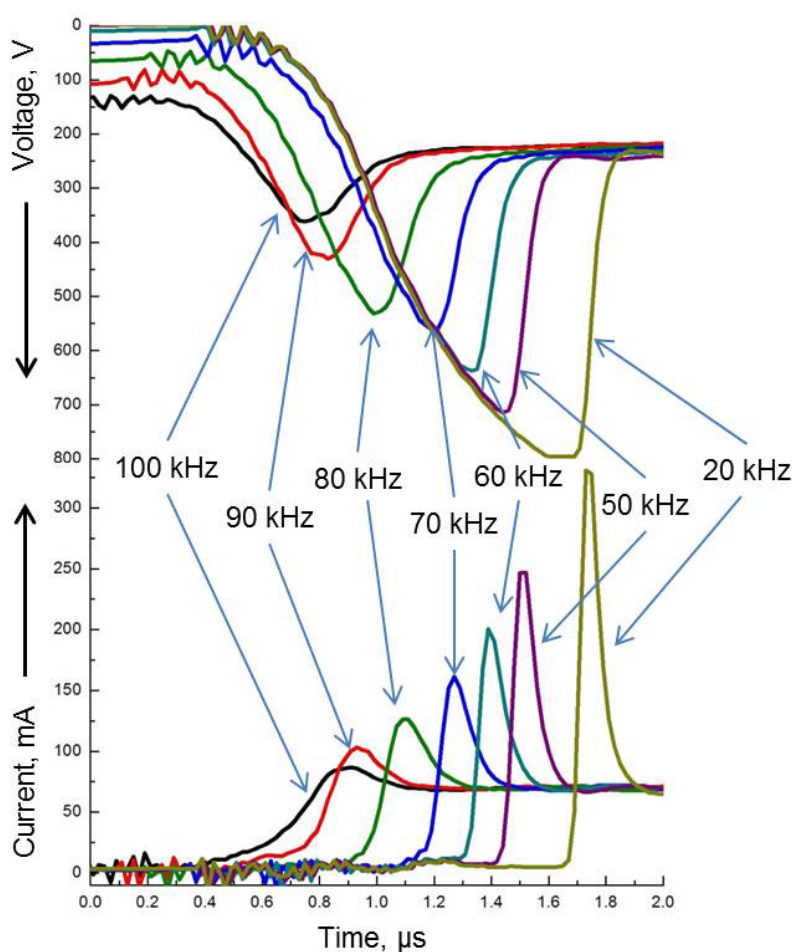


Fig.1. Waveforms of peak voltage and current at the moment of ignition of the discharge pulse.