

## Pulsed inductive RF discharge as an effective working process of an RF ion source

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**The paper experimentally considers a pulsed RF discharge as a working process of an RF ion source. It is shown that when operating on such a discharge, an increase in the ion current can be obtained in comparison with the continuous mode of operation. This increase is the greater, the greater the difference between the characteristic time of the fall of the ion current after turning off the RF power and the rise time of the ion current when the RF power is turned on. The pulsation parameters at which the ion current is maximized are estimated. It is shown that an external constant longitudinal magnetic field in the range of 0–7.2 mT nonmonotonically affects the maximum and equilibrium value of the ion current in a pulse and does not affect the rate of decrease in the ion current after turning off the RF power.**

**Keywords:** radio frequency (RF), discharge, plasma, pulsed, electrons, ions.

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