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### **Properties of buffer and dusty plasma in combined RF+DC discharge**

M.K. Dosbolayev<sup>1</sup>, A.U. Utegenov<sup>1</sup>, T.S. Ramazanov<sup>1</sup>

<sup>1</sup> Al Farabi Kazakh National University, IETP, al Farabi 71, Almaty, 050040, Kazakhstan

Gas discharge of combined radiofrequency and direct current is used in many technology industries, especially in cleaning and surface treatment of materials, in sterilization of medical instruments, etc. [1-5]. It is caused by the fact that with the imposition of an additional electrostatic field on the RF discharge can control the parameters of the formed plasma [1].

In our experiments the effect of an additional electrostatic field on plasma radiofrequency discharge and the characteristics of complex plasma were investigated.

The conditions of the experiments as follows: the gas pressure in the volume varied in 0.1-1 Torr, the electrode applied by AC voltage of 80-200 V with a frequency of 13.56 MHz and with a DC voltage 5-100 V.

The results of the experiments revealed several features of burning plasma in combined discharge and changes in the properties of dusty plasma, i.e. further increase of the static field in the RF discharge led to a significant change in the plasma parameters, thus affecting to the structure of the dust formation.

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