

MASS-SPECTROMETRIC INVESTIGATION OF CHEMICALLY ACTIVE PLASMA IN DISCHARGE WITH CONTROL MAGNETIC FIELDS

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Qualitative composition of chemically active plasma which is formed in high-frequency (HF) plasmochemical reactor (PChR) has been investigated by mass-spectrometric methods. HF discharge in PChR was formed in crossed electric and controlled magnetic fields. The technique of mass-spectrometric investigation, which is proposed by the authors of this paper permitted to make the qualitative analyses of plasma in SF₆ gas discharge for working pressure in the interval $10^{-4} \div 1$ torr. High efficiency of dissociation of SF₆ molecules and radicals ionization was received. These ions and radicals are responsible for high sputtering speed of materials. Ions energy is in interval 50÷200 eV. The physical mechanisms for ion-radicals contentment in mass-spectrograms are briefly reviewed.